Apacer

Stock Code: 8271

Apacer Technology Inc.

2023 Annual Report

Taiwan Stock Exchange Market Observation Post System:
https://mops.twse.com.tw
Apacer annual report is available at
https://www.apacer.com

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5. Name(s) of the exchange(s) where the securities of the Company are traded offshore, and the method(s) by which the information of the offshore securities is accessed:
   N/A

6. Company website:https://www.apacer.com

Contents

One. Letter to Shareholders

Dear Shareholders:

Looking back on 2023, the global economy remained highly uncertain due to the intensification of geopolitical conflicts and the interest rate policy of the U.S. Federal Reserve System. In addition, the global semiconductor end application market was not as good as expected and the inventory adjustment time was lengthened. The weak memory market led to a sharp decline in the selling price, forcing manufacturers to take measures such as cutting production, reducing capital expenditure, adjusting equipment configuration, and optimizing production lines. In addition, due to the interference of the escalating technology war between the United States and China, complicated situations were not favorable to business operations and the annual revenue declined as a result.

Facing such a difficult operating environment, Apacer relied on its long-term efforts in key areas over the past few years, combined with the cooperation with strategic partners in recent years, to seize business opportunities amid these drastic changes in the market, adjusting product structure strategies rapidly, and ultimately maintaining a relatively stable operation result.

The consolidated operating revenue in FY 2023 was TWD 7.63 billion; the consolidated gross operating profit was TWD 1.78 billion; and the consolidated net profit after tax was TWD 600 million, and the earnings per share after tax was TWD 4.51. The following is an outline of the operating performance as well as operation and research results in FY 2023 and the operational plan for FY 2024:

I. Consolidated operating performance in FY 2023:

Unit: TWD 1,000

Item	2023	2022	Difference
Group operating revenue	7,631,446	8,797,035	(1,165,589)
Group gross operating profit	1,778,642	1,688,414	90,228
Group net operating profit	710,534	694,122	16,412
Group net non-operating income	37,855	19,353	18,502
Group net profit after tax	604,712	576,991	27,721
Attributable to shareholders of the parent company	553,046	559,126	(6,080)
Attributable to non-controlling interests	51,666	17,865	33,801
Earnings per share after tax (in TWD)	4.51	5.23	(0.72)

II. Operation and research results in FY 2023:

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

1. The Company was recognized by the 9th Corporate Governance Appraisal, ranking in the top 5% among the companies having a market value between TWD 5 billion and TWD 10 billion.

2. Apacer's technology products have won the EE Awards Asia Gold Award for two consecutive years.
3. We have been invited to the Taiwan Global Brands evaluation for seven consecutive years and received the “Emerging Brands” award.
4. Again, we won the “Golden Award” under the category of Corporate Sustainability Report of TCSA.
5. We were continuously included in the list of top-10 global module manufacturers with our operating revenue.

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 2023, we had accumulated 235 patents issued or pending at home and abroad. At the same time, we also launched the CoreSnapshot 2.0 technology that can perform multiple backup and restoration cycles; the industry's first DDR5 positive wide-temperature memory module with industry-grade wide-temperature ICs to provide IPCs with higher performance and reliability; and the enterprise-grade SSD series equipped with CorePower hardware technology focusing on SME's high requirement for industry-grade storage equipment. In addition, with the support of the extensive experience in the development of optical technologies, we continued to accumulate the successful cases of total solutions for our intelligent automated testing technology.

In light of the international trends of sustainability, we launched the world's first completely lead-free memory module that surpasses the current EU RoHS environmental protection standard and a patented multi-functional extension module, transformed SSD SV25T Series that can reduce carbon emissions. With these, we responded to the expectation of all the stakeholders to environmental sustainability. In addition to integrating product technology with sustainability issues, the achievements of sustainability governance included appointing an information security officer to ensure information security, carrying out greenhouse gas inventory and external audit for the operation headquarters ahead of schedule, long-term adoption of local coffee trees to care for local small farmers, and encouraging employees to donate blood for volunteer leave, make voluntary donations to social welfare organizations and take other actions in response to the needs of the society.

III. Operation plan for FY 2024:

(I) Operational strategy

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

(II) Development strategies

Integrate internal resources to strengthen the connection between R&D of technology and new products, and optimize the development of key application areas such as AI, Internet of Things, national defense solidification, information and communication, and intelligent automated testing; work with strategic partners to deploy high value-added applications and cultivate growth potential.

(III) Core policies on production and sale

In the face of the volatile global market, Apacer has leveraged its advantages of agile and flexible strategy adjustment, prioritized stable supply of goods to protect customers' interest, while integrating internal and external production resources to strengthen competitive advantages. We will integrate marketing models through multiple data analysis to strengthen sales business and increase international market share to create higher brand value.

Looking forward to 2024, the market is expected to shake off the recession over the past two years. Apacer will grasp the opportunity of this reversal and demonstrate the brand's core value of "Becoming Better Partners" namely "Act on what we say, persist in a better result, develop together with partners." We will optimize operating performance and achieve the ESG goals, in the hope to share the results with all stakeholders, including shareholders and strategic partners, and achieve the goal of becoming a leader.

Chairman

Managerial officer

Accounting Manager

Two. Company Profile

I. Founding date

April 16, 1997

II. History

1997	April	We were founded in Taipei City as BizAnchor Service Network Inc., an enterprise re-invested by Acer Group and with TWD 10 million as initial capital. We were a professional manufacturer of memory modules.
	July	We moved to Xizhi Township, Taipei County, and we renamed ourselves Apacer Technology Inc.
	October	For the development of global logistics, we founded Apacer Memory America Inc. as our US subsidiary.
1998	January	The Longtan Factory was established.
	February	With the European market booming, we founded Apacer Technology B.V. as our European subsidiary.
1999	August	We received the ISO 9002 certification.
2000	July	We conducted an initial public offering.
	August	To expand business in the Japanese market, we founded Apacer Technology Corp. as our Japanese subsidiary.
2001	March	We invested in AQR Technology Inc. and acquired 100% of its shares.
	August	With approval from the Ministry of Economic Affairs (MOEA) through Letter Jing-(90) No. 90030399, we acquired Kingdom Corporation Ltd. as our Hong Kong subsidiary.
	October	With approval from MOEA through Letter Jing-(90)- Tou-Shen-Er-Zi No. 90036342, we acquired Apacer Technology (BVI) Inc. as our subsidiary in the British Virgin Islands.
		To expand our business in the Chinese market, and with approval from the Ministry of Economic Affairs through Letter Jing-(90)-Tou-Shen-Er-Zi No. 90036342, Apacer Electronic (Shanghai) Co., Ltd was founded with re-investment from Apacer Technology (BVI) Inc.
2002	August	To expand our business into multimedia and digital storage sector, we acquired 100% of the shares of Pronology Services Inc.
2003	August	We received the ISO 9001:2000 certification.
2004	January	Our shares began to be traded as emerging stocks in the over-the-counter (OTC) market.
2005	April	The Longtan Factory received the ISO 14001:2004 certification.
	June	Share Steno, the world's first OTG USB device for storage of digital images, won the National Award of Excellence.
2007	March	To expand business in the Indian market, we founded Apacer Technologies Pvt Ltd. as our Indian subsidiary.
2009	April	We established an office in Shenzhen, China.
	November	We established the VA-Consumer Product Department which covers four product lines: digital storage, multimedia entertainment, digital sharing, digital peripherals.
2010	December	We became listed on the Taiwan Stock Exchange.
2013	July	We established our operational headquarters in Tucheng to realize the plan of bringing the factory and head office together. The establishment successfully set a milestone for us in the process of fulfilling the objective of sustainable development.

2015	January	We and Phison Electronics Corp. jointly announced our entering into strategic cooperation through private placement. The aim is to reinforce our robust experiences and R&D capabilities in the fields of industrial SSDs and controllers through this mutual investment.
2016	January	We unveiled the USB 3.0 fingerprint flash drives which use exclusive biometric identification technology and are capable of 360º all-angle sensing and discrete management of public and private data.
2017	February	NVMe PCIe SSD was launched. It provides a transmission rate up to PCIe Gen3 x4 and supports the industry-leading NVMe (Non-Volatile Memory Express) technology to substantially improve IOPS low latency performance, and also break through the bottleneck of the AHCI standard.
	March	The first drop-resistant mobile hard disk AC730 of military specifications was launched. The armor made of aluminum alloy can bear a load of 1500kg with anti-drop capability of military specifications as well as IP68 waterproof and dust-resistance features. The internal suspension and shockproof functions with five defending capabilities are available.
	April	The integrated CAN bus communication module and GPS-based EFC-G/EFC-R series products with dual-board modules were developed, with the support of the integrated software kit (SDK) for selectable car-borne information and communication network cloud.
		The first anti-vulcanization series memory in the world was launched for the environment exposed to sulfur; the product has been patented in many countries.
	October	The dedicated portable storage solution AH790 Rotary Disk for iPhone and iPad was launched; it has passed the Apple MFi certification.
2018	March	With the release of the PANTHER DDR4 memory and SSD, whose excellent performance and tough appearance quickly drew the interest of modders and eSport players from countries around the world.
		We became the first manufacturer in the industry to begin mass production of the DDR4 2666 industrial memory module for servers of all series. The memory module can be supported by the latest Intel® Purley and AMD EPYC processors.
	April	We introduced the technical-grade wide-temperature identification and established the market specifications.
	June	We released the high rugged memory module XR-DIMM to build the highest reliability in the industry and was the first to introduced it into the military specification application.
	August	By the great achievement in the active exploration of the optical inspection, we promoted the luminance inspection project for liquid crystal panels with high-end customization and wireless transmission support. This project also has a “depolarization ” patent to solve errors of the optical spectrometer.
	December	We released the world’s fastest industrial-grade memory card CFexpress to meet the specifications of the latest CFA CFexpress1.0 and NVME. By adopting the XQD standard and high-speed PCIe Gen3x2 interface along with the advantages of high capacity, high efficiency and low latency, we continued to expand the market of high performance computing, AI and deep learning, and intelligent image analysis.
2019	January	We worked with our IoT partners to carry out painless smart upgrades for long-term care wards. By using Line to control environmental monitoring equipment and utilizing robots to assist in ward rounds, we sought to build a system closest to the needs of care workers.
	April	We released the industrial-grade DDR4 high-performance wide-temperature memory.
	July	We released the AS2280Q4 M.2 PCIe Gen4x4 SSD.

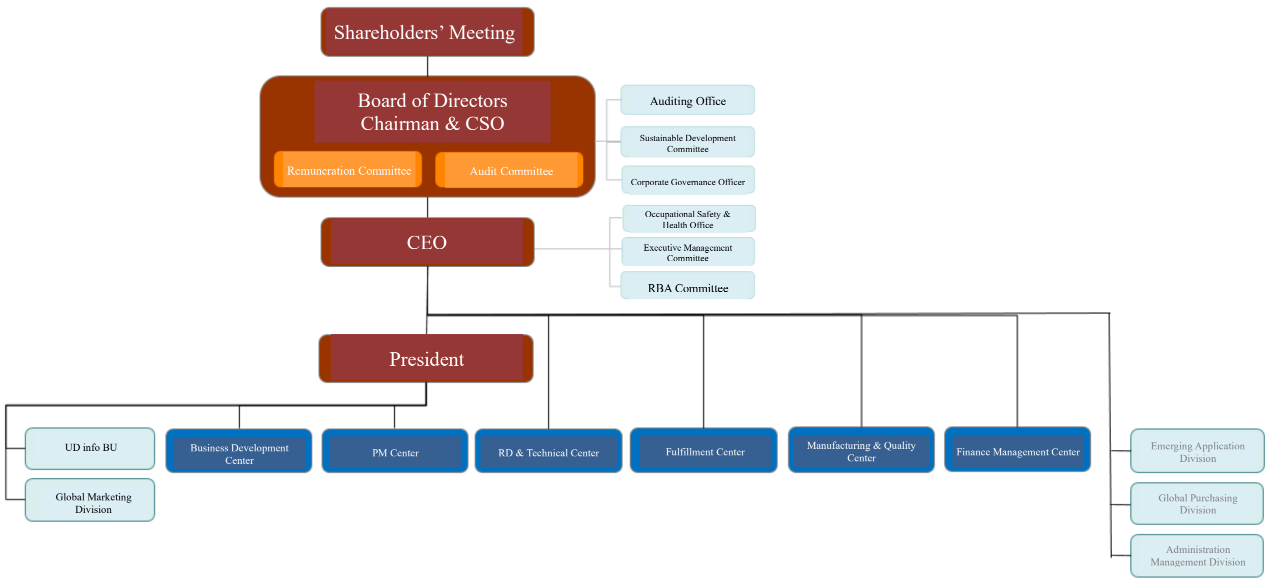
	August	We participated in the Australasian Gaming Expo in Sydney for the third time, and introduced the latest 3D NAND SLC-liteX technology. The XR-DIMM passed the RTCA DO-160G test for airborne equipment, becoming the first of its kind to be dual-certified globally.
	October	We became the first manufacturer to release the full series of the DDR4-3200 industrial-grade memory.
	November	For the third consecutive year, we were ranked in the top 35 of the Best Global Brands of Taiwan, and we received the "Emerging Brands" award.
2020	January	We cooperated with Advantech in promoting industrial cloud services, our first investment in smart factory application.
	April	The anti-vulcanization DDR4 server memory with the highest level of protection was released.
	May	We have been ranked in the top 5% of companies participating in the Corporate Governance Evaluation for the second consecutive year, showing our excellent performance of CSR promotion.
	June	We were the first manufacturer to create the industrial-grade wide-temperature DDR4 server memory.
	July	To add a new powerful member to our high-speed SSDs, the world's smallest industrial-grade PCIe BGA SSD was released.
	August	We collaborated with Allxon to develop the technology of IoT smart equipment management.
	September	We researched and developed the first military shock-resistant server memory, XR-LRDIMM, with our high-end customization capability.
	November	We worked together with DIGITIMES to utilize the smart IoT to identify vital signs in order to ensure the safety of elderly living alone. We became the first manufacturer to introduce the CoreSnapshot instant SSD backup and recovery technology.
2021	January	We were the first manufacturer to initiate the mass production of the DDR4-3200 wide-temperature memory module with the highest speed in the industry.
	March	We forged the alliance for DDR5 ecological chain, sped up the mass production plan, and drew up plans for the future development of all the DDR5 product lines. The Company introduced the automated disaster prevention system in the Smart City Summit & Expo, and had the system successfully implemented in the food courts of the factories in large industrial parks.
	June	The Company, along with Onyx Healthcare, integrated the CoreSnapshot one-second backup and recovery technology into medical devices, responding to the new post-pandemic trend while promoting the efficiency of resource usage in medical institutions.
	November	Responding to the era of smart health care, We built up an intelligent IoT for the environmental and health care safety. Three of our products were honored with the Taiwan Excellence Award, including the patented easy-mount cooling M.2 SSD that won the Silver Award. The Company received the "Emerging Brands" award of the Best Taiwan Global Brands evaluation again.
	December	Apacer released the 112L BiCS5 3D TLC industrial memory cards with ultra-low latency, high endurance and great resistance to harsh environments. We proactively developed our business in the panel industry and the biotech and pharmaceutical industry to embrace the waves of Industry 4.0.
2022	March	The industrial control wide-temperature 3D NAND SSD achieved the highest 100K P/E cycles in the industry

	April	According to the Q1 report, our EPS hit a historical high compared to same period in the previous years. Apacer was the first to launch the JEDEC 1.0 mass production version of an industrial-grade memory DDR5.
	May	Apacer launched the AS2280Q4U M.2 Gen4 x4 solid state drive (SSD).
	June	The Company entered into a strategic alliance with UD info Corp..
	November	Acer became our partner through private placement, expanding the cross-border niche markets with us.
	December	Apacer collaborated with ADLINK Technology to launch rugged edge computing solutions to accelerate the development of diverse AI applications.
2023	February	With the help of the four forces, Apacer’s EPS reached a new high of TWD 5.23. Transformed SSD Is a Quick and Easy Way to Adopt OOB Technology For Organizations Interested In Improving ESG Compliance
	March	Apacer’s TCG Opal SSDs Have Earned FIPS 140-2 Certification Take Security to the Next Level with a Diverse Array of Extremely Secure SSDs
	July	Apacer promoted manufacturing in India to create a new operation deployment.
	October	Apacer's patented multi-functional extension module SSD won the Excellence Award and helped customers in the implementation of ESG. Apacer Creates the First Industrial-grade Wide-temperature DDR5 Memory Module Made with ICs Sourced Directly from Leading Manufacturers Apacer Launches the AS2280F4 Gen5 x4 SSD: Over 25% Cooling Power, The Essential Choice for High-Performance Lovers
	December	From 2017 to 2023, the Company consecutively recognized by Interbrand as the Best Global Brands of Taiwan - Emerging Brands. CoreRescue won the EE Awards Asia.

Three. Corporate Governance

I. Organizational system

(I) Organizational structure



(II) Tasks of the main divisions

Division	Tasks
Auditing Office	(1) Assess the defects of the internal control system and the efficiency of operations. (2) Provide advices for improvement to ensure the internal control system continues to be implemented effectively. (3) Assist the BoD and the management in fulfilling their responsibilities.
Occupational Safety & Health Office	(1) Education regarding occupational safety and health. (2) Impact analysis, supervision and advice regarding work safety. (3) Prevention, monitoring and control of unsafe conduct at work. (4) Planning, advice and supervision regarding work safety improvement programs. (5) Prevention and control of occupational accidents, and the planning, advising and supervision regarding the protection of employee health, safety and well-being.
Business development center	(1) Market research, information collection, and formulation of strategies regarding the promotion of business in line with the annual operational objectives. (2) Maintenance of customer relations and development of new customers, channels and application areas. (3) Field Application Engineering (FAE): Understanding of regional customer applications and assistance to the sales department in development of customers, response to technical issues for regional customers, and preparation of product analysis reports. (4) Coordination with product units over the positioning/packaging of product solutions and promotion, planning and implementation of informative events.

Division	Tasks
PM Center	(1) Market research, collection and analysis of market information, and formulation of strategies for product marketing. (2) Planning for new product design and coordinating with R&D units over formulation of R&D strategies. (3) Coordination with business units over inter-division resource integration to increase output. (4) Handling major customer complaints.
RD & Technical Center	(1) Formulate strategies regarding the direction of R&D for new technologies and products. (2) Research and development of software, firmware, hardware and institutional integration for product technologies. (3) R&D of our core technologies, and submission of patent applications. (4) Specialized technical services and certification of product technologies. (5) Technical Support (TS): Global new technology and product technology transfer, product technology education and training, analysis of product application issue, and response to technical issues for global customers. (6) Application Engineering (AE): Analysis of global post-production issues.
Fulfillment Center	(1) Integration of global customer demands and simulation of material supplies and demands. (2) Production scheduling for global business orders, and planning and implementation for order delivery. (3) Providing global business supports and services. (4) Providing sales and operational information of products. (5) Management, warehousing and transportation of raw materials. (6) Overall management of global imports and exports. (7) Optimization of operational processes.
Manufacturing & Quality Center	(1) Manufacturing of our products. (2) Research and improvement regarding production engineering and technologies. (3) Inspection and testing of product quality. (4) Inspection, improvement and control of hazardous substances for products. (5) Analysis and improvement of production defects. (6) Product after-sales services. (7) Document management center.
Finance Management Center	(1) Establishment of procedures for accounting and tax matters and financial statements of the Company. (2) Control of the accounting and tax matters of subsidiaries. (3) Handling of the matters related to the Board of Directors and shareholders' meetings as per the regulations. (4) Assisting the directors in the inauguration, continuing education and compliance with the regulations, and providing information required for the directors to perform their duties. (5) Control of our cash flow, and movement of funds (6) Announcement and disclosure of material information, and maintenance of investor relations. (7) Reinvestment and risk control.

Division	Tasks
Emerging Application Division	(1) Market research, information collection, and formulation of strategies regarding the promotion of business in accordance with the annual operational objectives (2) Develop business of smart application products and explore new customers. (3) Integration of all B2B business resources and determination of sales and marketing strategies. (4) Handling of major customer complaints and exploration of special channels for products. (5) Planning of distribution, production and priorities regarding domestic/foreign orders. (6) Collection of customer demands.
UD info BU	(1) Industrial storage modules: R&D, assembly and sales of SSD, industrial memory cards, embedded DRAM module, Industrial NAND flash.
Global Marketing Division	(1) Cooperation with product units to position product and technology advantages, and, through integrated marketing activities, assisting business teams in operating in regional markets to achieve the goal of growth in the operating performance. (2) Communicating for internal and external consensus and promoting sustainable initiatives to implement Apacer's brand promise of sustainable operations in line with the Company's strategy
Global Purchasing Division	(1) Planning and management of the procurement of raw materials and components for products. (2) Bargaining and management regarding the contractors of externally procured products.
Administration Management Division	(1) Management and establishment of our information systems. (2) Establishment of database and system planning for cyber security protection. (3) Matters related to legal affairs, patents and trademarks of the Company. (4) Matters related to the management of contracts and seals of the Company. (5) Planning remuneration policies and talent development strategies for the Company. (6) Formulating systems and regulations and planning welfare activities for the Company.

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

(I) Director

April 2, 2024

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
Chairman	Republic of China	Austin Chen	2021.07.14	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., Chairman and 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 OtO Photonics Inc., Representative of Legal Person as Director JoiiUp Technology Inc., Representative of Legal Person as Director Darwin Precisions Corp., Independent Director	None	None	None
Director	Republic of China	Teddy Lu	2021.07.14	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%	EcoLumina Technologies Inc., Director 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 Business Section, General Manager M.S. of Electrical Engineering and M.B.A., University of California B.S., Department of Electro-physics, National Chiao Tung University	Apacer Technology Inc., Director Cyber Power Systems, Inc., Director RDC Semiconductor Co., Ltd., Director YODN Lighting Corp., Director	None	None	None
Director	Republic of China	Chang Chia-Kun	2021.07.14	Male 55-59 years old	3 years	2012.06.13	196,825	0.19%	455,642	0.35%	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
Director	Republic of China	Haydn Hsieh	2021.07.14	Male 65-69 years old	3 years	2015.6.15	0	0.00%	0	0.00%	0	0.00%	0	0.00%	Wistron NeWeb Corporation, Chairman and CEO Wistron Corp., Senior Vice President	AOPEN Inc., Representative of Legal Person as Director Raydium Semiconductor Corporation, Independent Director	None	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
															Acer Inc., Portable Computer Business Group, General Manager and Senior Vice President Entrepreneur Class, National Chengchi University B.S., Department of Electrical Engineering, Tatung University	aEnrich Technology Corp., Director Apacer Technology Inc., Director			
Director	Republic of China	George Huang	2021.07.14	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 enphants Co. Ltd., Director Motech Industries Inc., Director	None	None	None
Director	Republic of China	Phison Electronics Corp.	2021.07.14	N/A	3 years 3 years	2018.05.30 2018.05.30	10,050,000	9.87%	12,554,580	9.75%	0	0.00%	0	0.00%	N/A	N/A	N/A	N/A	N/A
	Malaysia	Representative: Weng Wen-Jie		Male 40-44 years old			0	0.00%	0	0.00%	0	0.00%	0	0.00%	Phison Electronics Corp., Manager B.B.A., Department of Accounting, National Cheng Kung University	Apacer Technology Inc., Representative of Legal Person as Director Lian Xu Dong Investment Corp., Representative of Legal Person as Director	None	None	None
Independent Director	Republic of China	Max Wu	2021.07.14	Male 65-69 years old	3 years	2012.06.13	68,325	0.07%	68,325	0.05%	0	0.00%	0	0.00%	Birch Venture Capital, Inc., Chairman Acer America Corp., president Hua Nan Management Consulting Co., Chairman InveStar 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 Novatek Microelectronics Corp., Director YODN Lighting Corp., Director Antec, Inc., Director Cruise10 Co., Ltd., Chairman	None	None	None
Independent Director	Republic of China	Philip Peng	2021.07.14	Male 70-74 years old	3 years	2018.05.30	527	0.00%	527	0.00%	0	0.00%	0	0.00%	SmartStar Technology Inc., Chairman Acer Inc., Senior vice President/CFO M.B.A., Department of Business Administration, National Chengchi University	Apacer Technology Inc., Independent Director AU Optronics 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	None	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: Number of shares	Shares held at time of election: Shareholding ratio	Current shares held: Number of shares	Current shares held: Shareholding ratio	Current shares held by spouse or minor children: Number of shares	Current shares held by spouse or minor children: Shareholding ratio	Shares held in the name of others: Number of shares	Shares held in the name of others: Shareholding ratio	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: Title	Other supervisors, directors or supervisors in a spousal relationship or within the second degree of kinship: Name	Other supervisors, directors or supervisors in a spousal relationship or within the second degree of kinship: Relation
Independent Director	Republic of China	Cathy Han	2021.07.14	Female 55-59 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 MBA, University of Connecticut, USA	Wiwynn Corporation, Independent Director Apacer Technology Inc., Independent Director Macroblock Inc., Independent Director AU Optronics Corp., Independent Director	None	None	None

(II) Major shareholders of the corporate shareholders:

April 2, 2023

Name of corporate shareholders	Major shareholders of the corporate shareholders
Phison Electronics Corp.	Investment account of KIOXIA Corporation in escrow at First Commercial Bank (9.93%) Fubon Life Insurance Co., Ltd. (2.66%) Pan Jian-Cheng (2.59%) Yang Jun-Yong (2.28%) Taiwan Life Insurance Co., Ltd. (2.08%) Investment account of Norges Bank in escrow at Citibank (2.04%) Ouyang Zhi-Guang (1.75%) Chenghe Investment Co., Ltd. (1.20%) Yuanta Taiwan High-Yield Leading Company Fund account in escrow at Chang Hwa Commercial Bank, Ltd. (1.17%) Wu Han-Wei (1.16%)

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

April 2, 2023

Name of corporate shareholders	Major shareholders of the corporate shareholders	Shareholding ratio
Investment account of KIOXIA Corporation in escrow at First Commercial Bank	Kioxia Holdings Corportaion	100%
Fubon Life Insurance Co., Ltd.	Fubon Financial Holding Co., Ltd.	100%
Taiwan Life Insurance Co., Ltd.	CTBC Financial Holding Co., Ltd.	100%
Chenghe Investment Co., Ltd.	Pan Jian-Cheng	99.38%

(IV) Information on directors

I. 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	● Education: M.B.A., Department of Management Science, National Chiao Tung University ● Experience: Apacer Technology Inc., Chairman and CSO; Apacer Technology Inc., Chairman; Acer Inc., Vice President; Apacer Technology (BVI) Inc. Director; OtO 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
Teddy Lu, Director	● Education: M.S. of Electrical Engineering and M.B.A., University of California; B.S., Department of Electro-physics, National Chiao Tung University ● Experience: YODN Lighting Corp., Chairman; 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.	-	0

Qualifications / Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
Chang Chia-kun, Director	● Education: Baruch College CUNY of M.B.A., NYU Polytechnic School of M.E.E. ● 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
Haydn Hsieh, Director	● Education: Entrepreneur Class, National Chengchi University; B.S., Department of Electrical Engineering, Tatung University ● Experience: Wistron NeWeb Corporation, Chairman and CSO; Wistron Corp., Senior Vice President; Acer Inc., Portable Computer Business Group, General Manager, Senior Vice General Manager; Wistron Corp., Director's Representative; Raydium Semiconductor Corp., Independent Director; aEnrich Technology Corp., Director; Apacer Technology Inc., Director. ● None of the circumstances under Article 30 of the Company Act applies to the director.	-	1
George Huang, Director	● 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	-	1

Qualifications / Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
	enphants Co. Ltd., Director; Motech Industries Inc., Director. ● None of the circumstances under Article 30 of the Company Act applies to the director.		
Phison Electronics Corp. Representative: Weng Wen-jie, Director	● Education: B.B.A., Department of Accounting, National Cheng Kung University ● Experience: Phison Electronics Corp., Manager; Apacer Technology Inc., Director's Representative; Lian Xu Dong Investment Corp., Director's Representative. ● None of the circumstances under Article 30 of the Company Act applies to the director.	-	0
Max Wu, Independent Director	● 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; Novatek Microelectronics Corp., Director; YODN Lighting Corp., Director; Antec, Inc., Director. ● None of the circumstances under Article 30 of the Company Act applies to the director.	● 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 (II) Independence of the Board of Directors.	2
Philip Peng Independent Director	● Education: M.B.A., Department of Business Administration, National Chengchi University	● 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	1

Qualifications / Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
	● Experience: SmartStar Technology Inc., Chairman; Acer Inc., Senior Vice President/CFO; Apacer Technology Inc., Independent Director; AU Optronics Corp., Independent Director; Wistron Corp., Director; Wistron NeWeb Corp., Director; Wistron ITS Corp., Director; ZIGONG ART SHARING CO., LTD., Director; Allxon Inc., Supervisor. ● 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.	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 (II) Independence of the Board of Directors.	
Cathy Han Independent Director	● Education: MBA, 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; Wiwynn Corporation, Independent Director; Apacer Technology Inc., Independent Director; Macroblock Inc., Independent Director; AU Optronics 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.	● 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 (II) Independence of the Board of Directors.	3

II. Diversification and Independence of the Board of Directors

(I) Diversification of the Board of Directors:

1. 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 no less than five directors based on the business development scale, the shareholdings of major shareholders, and the practical operational needs 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:

   1. Basic requirements and values: Gender, age, nationality, culture, etc.
   2. 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:

   a. Ability to make operational judgments.
   b. Ability to perform accounting and financial analysis.
   c. Ability to conduct business management.
   d. Ability to handle the crisis.
   e. Industrial knowledge.
   f. International market perspective.
   g. Ability to lead.
   h. Ability to make policy decisions.

2. 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 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		✓		✓	✓
Teddy Lu	Republic of China	Male	Engineering, management		✓	✓	✓	✓
Chang Chia-Kun	Republic of China	Male	Engineering, management		✓		✓	✓
Haydn Hsieh	Republic of China	Male	Engineering, management		✓		✓	✓
George Huang	Republic of China	Male	Engineering, finance	✓	✓	✓	✓	✓
Phison Electronics Corp. Representative: Weng Wen-Jie	Malaysia	Male	Accounting	✓		✓	✓	✓
Max Wu	Republic of China	Male	Engineering		✓	✓	✓	✓
Philip Peng	Republic of China	Male	Management, finance	✓	✓	✓		✓
Cathy Han	Republic of China	Female	Management, finance	✓	✓	✓		✓

(II) Independence of the Board of Directors:

1. 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 / Independent director qualifications	Max Wu	Philip Peng	Cathy Han
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.	V	V	V

Independent director qualifications \ Name of Independent Director	Max Wu	Philip Peng	Cathy Han
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
(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

Name of Independent Director / Independent director qualifications	Max Wu	Philip Peng	Cathy Han
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.	V	V	V

2. 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

April 2, 2024

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held No. of shares held		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	Relation-Relationship
Chairman & 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 and 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 OtO Photonics Inc., Representative of Legal Person as Director JoiiUp Technology Inc., Representative of Legal Person as Director Darwin Precisions Corp., Independent Director	None	None	None
CEO	Republic of China	Chang Chia-Kun (Note 1)	Male	2014.04.01	455,642	0.35%	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
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 PhD, Aerospace Engineering, University of California, Los Angeles, California, USA	UD info Corp., Chairman & President	None	None	None
Vice President	Republic of China	Luo Rong-Fa	Male	2020.07.01	99,885	0.08%	0	0.00%	0	0.00%	Apacer Technology Inc., Vice President Apacer Technology Inc., Special Assistant to the President's Office JoiiUp Technology Inc., Chairman Master of Graphic Arts and Communications, National Taiwan Normal University	Apacer Technology Japan Corp. Director	None	None	None
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

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held No. of shares held		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	Relation-Relationship
Vice President	Republic of China	Luo Xue-Ru	Female	2018.08.01	88,552	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	121,372	0.09%	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
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 Qinjing 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

<table>
<tr><th rowspan="2">Title</th><th rowspan="2">Nationality</th><th rowspan="2">Name</th><th rowspan="2">Gender</th><th rowspan="2">Start date of office</th><th colspan="2">No. of shares held</th><th colspan="2">Shares held
No. of shares held</th><th colspan="2">Shares held in the name of others</th><th rowspan="2">Educational background and experience</th><th rowspan="2">Concurrent posts in other companies</th><th colspan="3">Managerial officers in a spousal relationship or within the second degree of kinship</th></tr>
<tr><th>Number of shares</th><th>Shareholding ratio</th><th>Number of shares</th><th>Shareholding ratio</th><th>Number of shares</th><th>Shareholding ratio</th><th>Title</th><th>Name</th><th>Relation-Relationship</th></tr>
<tr><td>Senior Head</td><td>Republic of China</td><td>Yu Yao-tse</td><td>Male</td><td>2022.01.01</td><td>20,547</td><td>0.02%</td><td>0</td><td>0.00%</td><td>0</td><td>0.00%</td><td>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
B.B.A., Department of Business Administration, Royal Roads University</td><td>–</td><td>None</td><td>None</td><td>None</td></tr>
<tr><td>Accounting manager</td><td>Republic of China</td><td>Huang Yi-cheng (Note 3)</td><td>Male</td><td>2022.02.23</td><td>11,582</td><td>0.01%</td><td>0</td><td>0.00%</td><td>0</td><td>0.00%</td><td>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</td><td>–</td><td>None</td><td>None</td><td>None</td></tr>
</table>

Note 1: The CEO, Chang Chia-Kun, was inaugurated on April 1, 2024. He continues to have ultimate management responsibilities.

Note 2: The President, Chen Ming-Ta, was inaugurated on April 1, 2024.

Note 3: The Accounting manager, Huang Yi-cheng, was inaugurated on August 1, 2023.

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

1. Remuneration for general directors and independent directors

Unit: TWD

Title	Name	Remuneration								The total amount of A, B, C and D, and the percentage in net income after tax		Remuneration for part-time employees								The total amount of A, B, C, D, E, F and G, and the percentage in net income after tax		Remuneration from reinvestment businesses other than subsidiaries
		Remuneration (A)		Retirement pension (B)		Director remuneration (C)		Business execution fee (D)				Salary, bonus and special allowance (E)		Retirement pension (F)		Employee remuneration (G)						
		Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer		All companies in financial report		Apacer	All companies in financial report	
																Cash amount	Share amount	Cash amount	Share amount			
Chairman	Austin Chen	2,000,000	2,000,000	-	-	8,583,300	8,583,300	280,000	280,000	10,863,300 1.96%	10,863,300 1.96%	35,751,559	35,751,559	108,000	108,000	9,040,000	-	9,040,000	-	55,762,859 10.08%	55,762,859 10.08%	-
Director	Teddy Lu																					
Director	Chang Chia-Kun																					
Director	Haydn Hsieh																					
Director	George Huang																					
Director	Phison Electronics Corp. Representative: Weng Wen-jie																					
Independent Director	Max Wu	3,850,000	3,850,000	-	-	1,535,700	1,535,700	150,000	150,000	5,535,700 1.00%	5,535,700 1.00%	-	-	-	-	-	-	-	-	5,535,700 1.00%	5,535,700 1.00%	-
Independent Director	Philip Peng																					
Independent Director	Cathy Han																					

Note 1: For the details of the policies, systems, standards, and structure for payment of the remuneration for Independent Directors, and the description of the relationship between the responsibilities, risks and time devoted with the remuneration amount to be paid, please see page 32-33.

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.

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 1,000,000 dollars				
1,000,000 dollars (incl.) ~ 2,000,000 dollars (not incl.)	Chang Chia-Kun, Teddy Lu, Haydn Hsieh, George Huang, Phison, Max Wu, Philip Peng, Cathy Han	Chang Chia-Kun, Teddy Lu, Haydn Hsieh, George Huang, Phison, Max Wu, Philip Peng, Cathy Han	Teddy Lu, Haydn Hsieh, George Huang, Phison, Max Wu, Philip Peng, Cathy Han	Teddy Lu, Haydn Hsieh, George Huang, Phison, Max Wu, Philip Peng, Cathy Han
2,000,000 dollars (incl.) ~ 3,500,000 dollars (not incl.)	Austin Chen	Austin Chen		
3,500,000 dollars (incl.) ~ 5,000,000 dollars (not incl.)				
5,000,000 dollars (incl.) ~ 10,000,000 dollars (not incl.)				
10,000,000 dollars (incl.) ~ 15,000,000 dollars (not incl.)				
15,000,000 dollars (incl.) ~ 30,000,000 dollars (not incl.)			Austin Chen, Chang Chia-kun	Austin Chen, Chang Chia-kun
30,000,000 dollars (incl.) ~ 50,000,000 dollars (not incl.)				
50,000,000 dollars (incl.) ~ 100,000,000 dollars (not incl.)				
More than 100,000,000 dollars				
Total	9 (Vice) Presidents	9 (Vice) Presidents	9 (Vice) Presidents	9 (Vice) Presidents

2. Remuneration for supervisors

Unit: TWD

Title	Name	Supervisor remuneration						The total amount of A, B and C, and the percentage in net income after tax		Remuneration from reinvestment businesses other than subsidiaries
		Remuneration (A)		Remuneration (B)		Business execution fee (C)				
		Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	
-	-	-	-	-	-	-	-	-	-	-

<u>Salary Range Table</u>

Salary range for supervisors of Apacer	Supervisor name	
	Total amount of the first three remuneration items (A+B+C)	
	Apacer	All companies in financial report
Less than 1,000,000 dollars	-	-
1,000,000 dollars (incl.) ~ 2,000,000 dollars (not incl.)	-	-
2,000,000 dollars (incl.) ~ 3,500,000 dollars (not incl.)	-	-
3,500,000 dollars (incl.) ~ 5,000,000 dollars (not incl.)	-	-
5,000,000 dollars (incl.) ~ 10,000,000 dollars (not incl.)	-	-
10,000,000 dollars (incl.) ~ 15,000,000 dollars (not incl.)	-	-
15,000,000 dollars (incl.) ~ 30,000,000 dollars (not incl.)	-	-
30,000,000 dollars (incl.) ~ 50,000,000 dollars (not incl.)	-	-
50,000,000 dollars (incl.) ~ 100,000,000 dollars (not incl.)	-	-
More than 100,000,000 dollars	-	-
Total	-	-

3. Remuneration for President and Vice President

Unit: TWD

<table>
<tr><th rowspan="3">Title</th><th rowspan="3">Name</th><th colspan="2">Salary (A)</th><th colspan="2">Retirement pension (B)</th><th colspan="2">Bonus and special allowance (C)</th><th colspan="4">Employee remuneration (D)</th><th colspan="2">The total amount of A, B, C and D, and the percentage in net income after tax</th><th rowspan="3">Remuneration from reinvestment businesses other than subsidiaries</th></tr>
<tr><th rowspan="2">Apacer</th><th rowspan="2">All companies in financial report</th><th rowspan="2">Apacer</th><th rowspan="2">All companies in financial report</th><th rowspan="2">Apacer</th><th rowspan="2">All companies in financial report</th><th colspan="2">Apacer</th><th colspan="2">All companies in financial report</th><th rowspan="2">Apacer</th><th rowspan="2">All companies in financial report</th></tr>
<tr><th>Cash amount</th><th>Share amount</th><th>Cash amount</th><th>Share amount</th></tr>
<tr><td>CEO</td><td>Chang Chia-Kun (Note 1)</td><td rowspan="5">13,322,000</td><td rowspan="5">14,644,575</td><td rowspan="5">432,000</td><td rowspan="5">432,000</td><td rowspan="5">32,716,181</td><td rowspan="5">33,846,181</td><td rowspan="5">8,296,000</td><td rowspan="5">-</td><td rowspan="5">9,308,000</td><td rowspan="5">-</td><td rowspan="5">54,766,181
9.79%</td><td rowspan="5">58,230,756
10.41%</td><td rowspan="5">-</td></tr>
<tr><td>President</td><td>Chen Ming-Ta (Note 2)</td></tr>
<tr><td>Vice President</td><td>Luo Rong-Fa</td></tr>
<tr><td>Vice President</td><td>Huang Mei-Hui</td></tr>
<tr><td>Vice President</td><td>Luo Xue-Ru</td></tr>
</table>

Note 1: The CEO, Chang Chia-Kun, was inaugurated on April 1, 2024. He continues to have ultimate management responsibilities.

Note 2: The President, Chen Ming-Ta, was inaugurated on April 1, 2024.

<u>Salary Range Table</u>

Salary range for the President and Vice President of Apacer	President and Vice President name	
	Apacer	All companies in financial report
Less than 1,000,000 dollars	-	-
1,000,000 dollars (incl.) ~ 2,000,000 dollars (not incl.)	-	-
2,000,000 dollars (incl.) ~ 3,500,000 dollars (not incl.)	Chen Ming-Ta	-
3,500,000 dollars (incl.) ~ 5,000,000 dollars (not incl.)	-	-
5,000,000 dollars (incl.) ~ 10,000,000 dollars (not incl.)	Luo Rong-Fa, Huang Mei-Hui, Luo Xue-Ru	Chen Ming-Ta, Luo Rong-Fa, Huang Mei-Hui, Luo Xue-Ru
10,000,000 dollars (incl.) ~ 15,000,000 dollars (not incl.)	-	-
15,000,000 dollars (incl.) ~ 30,000,000 dollars (not incl.)	Chang Chia-Kun	Chang Chia-Kun
30,000,000 dollars (incl.) ~ 50,000,000 dollars (not incl.)	-	-
50,000,000 dollars (incl.) ~ 100,000,000 dollars (not incl.)	-	-
More than 100,000,000 dollars	-	-
Total	5 (Vice) Presidents	5 (Vice) Presidents

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

Unit: TWD

	Title	Name	Share amount	Cash amount	Total	The total amount in net income after tax (%)
General manager	Chairman and CSO	Austin Chen	0	17,952,000	17,952,000	3.25%
	CEO	Chang Chia-Kun (Note 1)				
	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 3)				

Note 1: The CEO, Chang Chia-Kun, was inaugurated on April 1, 2024. He continues to have ultimate management responsibilities.

Note 2: The President, Chen Ming-Ta, was inaugurated on April 1, 2024.

Note 3: The Accounting manager, Huang Yi-cheng, was inaugurated on August 1, 2023.

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 operation performance and future risk exposure.

Title	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	Ratio of total remuneration in 2022 to net income after tax	Ratio of total remuneration of all the companies in the consolidated statements in 2022 to net income after tax
Directors and Independent Directors	2.96%	2.96%	3.07%	3.07%
President and Vice President	9.79%	10.41%	8.63%	9.01%

(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.

III. Corporate governance

(I) Operation status of the Board of Directors

The Board of Directors held 5 meetings in 2023. 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 Presence (attendance) rate (%)	Remarks
Chairman	Austin Chen	5	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Director	Teddy Lu	4	1	80%	Inaugurated on July 14, 2021 for another consecutive term.
Director	Chang Chia-Kun	5	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Director	Haydn Hsieh	5	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Director	George Huang	4	1	80%	Inaugurated on July 14, 2021 for another consecutive term.
Director	Phison Electronics Corp. Representative: Weng Wen-Jie	5	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Independent Director	Max Wu	5	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Independent Director	Philip Peng	5	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Independent Director	Cathy Han	5	0	100%	Inaugurated on July 14, 2021.

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
2023.2.21	1st meeting in 2023	Proposal for distribution of the remuneration for employees and directors in FY 2022 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, present at the meeting of the Board of Directors after consultation with the independent directors.
2023.7.27	3rd meeting in 2023	Proposal for adjustment of salary for managers in 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, present at the meeting of the Board of Directors after consultation with the independent directors.
2023.12.14	5th meeting in 2023	Proposal for distribution of the performance bonus for managers in 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, present at the meeting of the Board of Directors after consultation with the independent directors.
2023.12.14	5th meeting in 2023	Proposal for distribution of the remuneration for managers in 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, present at the meeting of the Board of Directors after consultation with the independent directors.

2023.12.14	5th meeting in 2023	Proposal for distribution of the Employee Stock Ownership Trust for managers in FY 2024 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, present at the meeting of the Board of Directors after consultation with the independent directors.

III. The Company resolved at the ninth meeting of the eighth Board of Directors held on December.17, 2019 to establish the "Guidelines for Evaluating the Performance of the Board of Directors". The evaluation procedure is described as follows:

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, 2023	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	1. Evaluation of the performance of the Board of Directors (1) Involvement in the Company's operation (2) Improvement of the quality of decision-making by the Board of Directors. (3) Composition and structure of the Board of Directors. (4) Election and continued education of directors. (5) Internal control. 2. (Self- or peer) evaluation of the performance of directors (1). Understanding of the objectives and missions of the Company. (2) Knowledge of the responsibilities of directors. (3) Involvement in the Company's operation (4) Internal relationship management and communication. (5) Professional knowledge and continued education of directors. (6). Internal control. 3. Evaluation of the performance of functional committees (1) Involvement in the Company's operation (2) Knowledge of the responsibilities of functional committees. (3) Improvement of the quality of decision-making by functional committees. (4) Composition and election of the members of functional committees. (5) Internal control.

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: 1. 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 2023, the performance evaluation was conducted by the board members themselves. 2. 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. 3. 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. 4. 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. 5. 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 2023 were 75.

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

The Audit Committee held 4 meetings in 2023. 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 July 14, 2021 for another consecutive term
Member	Philip Peng	4	0	100%	Inaugurated on July 14, 2021 for another consecutive term
Member	Cathy Han	4	0	100%	Inaugurated on July 14, 2021
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
2023.02.21	1st meeting in 2023	The business report and self-prepared financial statements of FY 2022 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2023.02.21	1st meeting in 2023	Proposal to issue the "Declaration on the Internal Control System" of FY 2022 was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2023.04.18	2nd meeting in 2023	Philip Tang and Shih Wei-Ming, 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
2023.04.18	2nd meeting in 2023	Proposal to issue common stocks through private placement for cash capital increase was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2023.7.27	3rd meeting in 2023	The quarterly consolidated financial statements for the second quarter of FY 2023 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2023.11.06	4th meeting in 2023	The internal audit plan of FY 2024 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
2023.02.21	1st meeting in 2023	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.
2023.02.21	Individual communication meeting	Review of the internal audit report	Continuous attention paid to the operations of subsidiaries, continuous audits, and reporting on improvements of the subsidiaries.
2023.04.18	2nd meeting in 2023	Review of the internal audit report	Acknowledged with no other suggestions.
2023.7.27	3rd meeting in 2023	Review of the internal audit report	Acknowledged with no other suggestions.
2023.11.06	4th meeting in 2023	Review of the internal audit report	Acknowledged with no other suggestions.

		Review of 2024 audit plan	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.

(II) Communication of the independent directors with the CPAs

Date	Communications with the CPAs	Results
2023.02.21	1. Independence 2. Responsibility of auditors for the audit of financial reports 3. Audit scope and method 4. Audit findings 5. Other matters to be noticed 6. Important updates of laws and regulations	Acknowledged with no other suggestions.
2023.12.14	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. 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 and reasons:

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? (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? (III) Does your company have a firewall mechanism in place to	V V 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. (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. (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	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
control the risks between the company and its affiliates?			risk control mechanism and firewall. The auditors supervise the implementation on a regular basis.	
(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.	
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: I. The members of our Board of Directors have diverse professional backgrounds and experience, which help us achieve the objectives of improving our business performance and the overall benefits of shareholder values. II. To ensure diverse formation of the Board of Directors, the members thereof 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 different professional backgrounds, they possess skills in accounting and financial analysis, business management, venture investment, engineering technology, leadership and decision-making that demonstrate 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. III. 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	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			to achieve the management objectives for diverse formation of the Board of Directors. A female independent director (accounting for 11.11% of all the directors) joined the Board of Directors in 2021, thereby achieving the goal of board members with diverse backgrounds/experience. IV. Implementation of diversification policy for the composition of the Board of Directors:	

Core diversification Item / Director Name	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		✓		✓	✓
Teddy Lu	Republic of China	Male	Engineering, management		✓	✓	✓	✓
Chang Chia-Kun	Republic of China	Male	Engineering, management		✓		✓	✓
Haydn Hsieh	Republic of China	Male	Engineering, management		✓		✓	✓
George Huang	Republic of China	Male	Engineering, finance	✓	✓	✓	✓	✓
Phison Electronics Corp. Representative: Weng Wen-Jie	Malaysia	Male	Accounting	✓		✓	✓	✓
Max Wu	Republic of China	Male	Engineering		✓	✓	✓	✓
Philip Peng	Republic of China	Male	Management, finance	✓	✓	✓		✓
Cathy Han	Republic of China	Female	Finance	✓	✓	✓		✓

Item	Yes	No	Summary	Differences
(II) Does your company voluntarily establish other functional committees similar to the Remuneration Committee and Audit		V	(II) 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.	Assessment of the necessity for additional functional committees with reference to the business operation

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
Committee set up pursuant to the relevant laws and regulations?				status and scale in the future.
(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) 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 for the performance of functional committees in the Guidelines. The performances of the Board of Directors and functional committees shall be evaluated for a period from January 1 to December 31 of the current year once a year in accordance with the requirements of the Guidelines, and the report of the evaluation results shall be completed by the end of the first quarter of the following year. In 2023, the achievement rates of the performance evaluations of the Board of Directors, Audit Committee and Remuneration Committee were higher than 90%, and the results thereof were reported at the board meeting held on February 23, 2024 and the meetings of functional committees.	No difference
(IV) Does your company assess the independence and competency of the CPAs on a regular basis?	V		(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. 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 23, 2024 and submitted to the Board of Directors for approval. Important assessment items are listed below: 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	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			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. 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 23, 2024 and submitted to the Board of Directors for approval.	
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 required for	V		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. The implementation of work in FY 2023 includes the following matters: 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.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
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)?			II. Assisting with the meeting procedure of the Board of Directors and the shareholders and compliance matters of the resolutions. III. Assisting in the communication between the independent directors, chief internal auditor and CPAs at Audit Committee meetings. IV. Maintaining investor relations. V. Publishing important information related to the material resolutions of the Board of Directors and shareholders' meetings in accordance with the relevant laws. VI. Arranging for the "Ethical Corporate Management Implementation Unit" to report the implementation status and plans related to the promotion of ethical management in the current year at the board meeting on December 14, 2023 to ensure the fulfillment of the Ethical Corporate Management Best Practice Principles. VII. Arranging for the "Sustainable Development Committee" to report the implementation and results related to the Sustainable Development Best Practice Principles, the status of communication with stakeholders in the current year and the work plan for the following year at the board meeting on December 14, 2023 to ensure the fulfillment of the Sustainable Development Best Practice Principles. VIII. Other matters referred to in the Articles of Incorporation or contracts.	
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		We have set up appropriate channels for communication with upstream and downstream vendors, banks, investors, and other stakeholders. For investors, we set up a special shareholder service and investor relationship mailbox and designated personnel for dealing with related matters. We also disclose related information on our website; management-labor meetings, complaint systems, and internal information networks are set up for the employees; regular production and sales activities are held for vendors on a regular basis. The Company provides a stakeholder section and contact information on our website to properly respond to corporate social responsibilities and other relevant issues for which the stakeholder are concerned.	No difference
VI. Does your company commission a professional registrar to deal with matters	V		We have commissioned KGI Securities Co. Ltd., Stock Administration, to handle these affairs.	No difference

Item	Description: Yes	No	Summary	Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
related to the shareholders' meeting?				
VII. Disclosure of information (I) Does your company have a website to disclose the financial 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)? (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	V V V		(I) Apacer website: (https://www.apacer.com/). We disclose information about our business, financial status, and implementation of corporate governance on our website. (II) We have a website to provide relevant information in Chinese and English as a reference for shareholders and stakeholders, and our CFO, Ms. Lai Zi-Wen, to act as the spokesperson and our CEO, Mr. Chang Chia-Kun, to act as the deputy spokesperson. The President's Office maintains communication with the media. At least one investor conference is held every year and the process is published on our website. All the important information that may affect the shareholders and stakeholders is disclosed appropriately 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 the all the employees, managerial officers and directors. (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 2023 financial report was published and filed on February 29, 2024, and our 2023 Q1, Q2 and Q3 financial reports and monthly operating performance were published and filed before the required time limit.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
file the Q1, Q2 and Q3 financial reports and monthly operating performance before the required time limit?				
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 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. (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. (IV) Rights of stakeholders: Stakeholders can communicate with us and give us advices. (V) Continuing education of directors:	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	

Title	Name	Course date	Organizer	Course	Education hours	Does the course meet requirements?
Chairman	Austin Chen	2023/09/01	Taiwan Corporate Governance Association	Corporate Goodwill Risk Management	3	Yes
		2023/09/01	Taiwan Corporate Governance Association	Impact and Effect of Climate Change Risk on Corporate Financial Disclosures	3	Yes
Director	Chang Chia-Kun	2023/07/07	Taiwan Corporate Governance Association	Explosion of Artificial Intelligence: Technological Development and Application Opportunities of ChatGPT	3	Yes
		2023/10/19	Taiwan Independent Director Association	ESG As Sustainable Development Action Plan and Strategic Planning Required for the Board of Directors	3	Yes
Director	Teddy Lu	2023/10/13	Securities and Futures Market Development Foundation	Carbon Credit Trading System and Corporate Management Applications	3	Yes
		2023/11/03	Taiwan Corporate Governance Association	Litigation and Beyond Litigation - How to Write a Good Dispute Resolution Clause in a Contract	3	Yes
Representative of legal person as director	Weng Wen-Jie	2023/04/14	Taiwan Corporate Governance Association	Legal Risks and Responses to Corporate Investment and Financing---from the Perspective of Corporate Directors' Responsibilities	3	Yes
		2023/10/24	Taiwan Corporate Governance Association	AI Applications, Law and Audit	3	Yes
Director	George Huang	2023/11/21	Taiwan Corporate Governance Association	Awareness of Listed Company's Directors and Senior Executives of Current Supervision by Competent Authorities	3	Yes
		2023/12/19	Taiwan Corporate Governance Association	Practical Analysis on Criminal Liabilities in Illegal Securities Cases	3	Yes
Director	Haydn Hsieh	2023/9/22	Taiwan Corporate Governance Association	The Key to Improving Board Effectiveness	3	Yes
		2023/9/22	Taiwan Corporate Governance Association	Key Global ESG Trends and Practical Cases to Win the Future	3	Yes

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	

Independent Director	Max Wu	2023/7/28	Taiwan Corporate Governance Association	Sustainability Performance and Remuneration to Senior Executives	3	Yes
		2023/7/28	Taiwan Corporate Governance Association	Corporate Risk Management Structure and Sharing of Practices	3	Yes
Independent Director	Philip Peng	2023/06/12	Chinese National Association of Industry and Commerce	Generative AI War Room - Anticipation and Opportunity	3	Yes
		2023/07/04	Taiwan Stock Exchange	2023 Cathay Sustainable Finance and Climate Change Summit	6	Yes
		2023/09/01	Taiwan Corporate Governance Association	Corporate Goodwill Risk Management	3	Yes
		2023/09/22	Taiwan Corporate Governance Association	Key Global ESG Trends and Practical Cases to Win the Future	3	Yes
		2023/09/22	Taiwan Corporate Governance Association	The Key to Improving Board Effectiveness	3	Yes
Independent Director	Cathy Han	2023/08/09	Taiwan Corporate Governance Association	Innovation, Digital Technology and Competitive Advantages	3	Yes
		2023/09/01	Taiwan Corporate Governance Association	Impact and Effect of Climate Change Risk on Corporate Financial Disclosures	3	Yes
		2023/09/01	Taiwan Corporate Governance Association	Corporate Goodwill Risk Management	3	Yes
		2023/09/22	Taiwan Corporate Governance Association	Key Global ESG Trends and Practical Cases to Win the Future	3	Yes
		2023/09/22	Taiwan Corporate Governance Association	The Key to Improving Board Effectiveness	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	2023/09/01	Taiwan Corporate Governance Association	Corporate Goodwill Risk Management	3
		2023/09/01	Taiwan Corporate Governance Association	Impact and Effect of Climate Change Risk on Corporate Financial Disclosures	3
CEO	Chang Chia-Kun	2023/07/07	Taiwan Corporate Governance Association	Explosion of Artificial Intelligence: Technological Development and Application opportunities of ChatGPT	3
		2023/10/19	Taiwan Independent Director Association	ESG As Sustainable Development Action Plan and Strategic Planning Required for the Board of Directors	3

<table>
<tr><th rowspan="2">Item</th><th colspan="3">Description</th><th rowspan="2">Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons</th></tr>
<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
<tr><td></td><td></td><td></td><td>

CFO	Lai Zi-Wen	2023/03/10	Taiwan Corporate Governance Association	Shareholders' Meetings, Management Rights and Equity Strategies	3
		2023/07/13	Securities and Futures Market Development Foundation	Talent Development and Corporate Sustainability	3
		2023/08/22	Taiwan Corporate Governance Association	Sustainability and Digital for Twin Transformation	3
		2023/11/17	Taiwan Corporate Governance Association	Compliance Practices for Corporate Governance Officers	3
Accounting Manager	Huang Yi-cheng	2023/08/24~ 2023/08/25	Accounting Research and Development Foundation	Continuing Education Program for the Accounting Managers of Issuers, Securities Firms and Securities Exchanges	12

(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 2023 was reported to the Board on December 14, 2023. For more information, please visit the website of the Company.
(https://www.apacer.com/zh-tw/html/risk-management)
(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 23, 2024</td><td></td></tr>
<tr><td>IX. On the basis of the result of corporate governance evaluation released by TWSE's Corporate Governance Center in the most recent year, please</td><td>V</td><td></td><td>The improvements in 2023 as follows:
1. Performance evaluation of the Board of Directors: The Company has carried out the 2023 self-evaluation of the Board of Directors. The results were reported in the first board meeting in 2024 and used as a reference for the review and improvements.
2. Separate communication between the independent directors and the chief internal auditor/CPAs has been carried on, with the details disclosed on the Company's official website.</td><td>No difference</td></tr>
</table>

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
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.			3. We will continue to strengthen corporate governance and establish and improve the regulations related thereto. 4. ESG reporting: Regular reports are delivered to the Board of Directors every year.	

(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:

April 2, 2024

Member type	Qualifications / Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves in a remuneration committee	Remarks
Independent Director	Max Wu	Please refer to the information on directors on pages 19-20 the relevant details.	Please refer to the information on directors on pages 19-20 relevant details.	2	Convener
Independent Director	Philip Peng			1	
Independent Director	Cathy Han			3	

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: July 14, 2021 - July 13, 2024

   (3) The Remuneration Committee held four meetings (A) in the most recent FY, and the attendance of its members are described below:

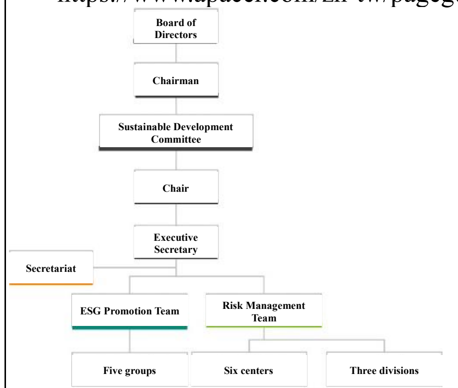
Title	Name	Number of meetings attended (B)	Number of meetings attended by proxy	Attendance rate (%) (B/A)	Remarks
Convener	Max Wu	3	0	100%	
Member	Philip Peng	3	0	100%	
Member	Cathy Han	3	0	100%	
Other matters to be specified: I. If the Board of Directors does not adopt or revise the suggestions of the 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 mosr recent year are as follows:

Date	Meeting	Remuneration Committee Proposal	Remuneration Committee Resolution	The Company's action on the Committee's opinion
2023/02/21	1st meeting in 2023	Proposal for distribution of the remuneration for employees and directors in FY 2022	Approved by all of the Committee members present	Approved by all of the directors present
2023/07/27	2nd meeting in 2023	Proposal for adjustment of the salary for managers in FY 2023	Approved by all of the Committee members present	Approved by all of the directors present
2023/12/14	3rd meeting in 2023	Proposal for distribution of the performance bonus for managers in FY 2023	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 and the President Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests.
2023/12/14	3rd meeting in 2023	Proposal for distribution of the employee remuneration for managers in FY 2023	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 and the President Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests.
2023/12/14	3rd meeting in 2023	Proposal for distribution of the Employee Stock Ownership Trust 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 and the President Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests.
2023/12/14	3rd meeting in 2023	Work plan for the Remuneration Committee in 2024	Approved by all of the Committee members present	(Omitted)

(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	Summary	
I. Does your company have a governance structure that promotes sustainable development, and 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		(I) The Company's "Sustainable Development Committee" has been appointed based on our ESG policy to be the highest internal unit 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 implementation of the policy, system or related management strategies and the specific implementation plans related to sustainability. The organization chart is as follows https://www.apacer.com/zh-tw/pageguide/sustainable-operation  The Committee includes 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 Global Marketing Division is designated as the Committee's secretariat to communicate and coordinate with different departments.	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	Summary	
			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 Company's sustainable development goals, and, for these, 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. The Sustainable Development Committee follows the sustainable development strategy plan, conducts a questionnaire survey or interview on issues of concern to all stakeholders at the end of the year, and formulates new annual development goals and work plans based on the results. For important work plans such as greenhouse gas inventory, the progress is reported to the Board of Directors from time to time. 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). The items of implementation and the results thereof reported to the Board of Directors in 2023 are as follows: (reporting date: December 14, 2023)	

Reports	Results of implementation
Key ESG awards	1. Corporate Governance - We were ranked in the top 5% of companies participating in the 9th Corporate Governance Appraisal-market value between TWD 5 billion and TWD 10 billion. 2. Best Taiwan Global Brands_Certification of the "Emerging Brands" award 3. Corporate Sustainability Report of TCSA_Golden Award 4. Taiwan Excellence Awards (2 awards) 5. EE Award_EE Awards Asia 6. 1111 Happy Enterprise Certification

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<tr><td></td><td></td><td></td><td><table><tr><th>Reports</th><th>Results of implementation</th></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
Report on the implementation of annual ESG goals</td></tr></table></td><td></td></tr>
<tr><td>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?</td><td>V</td><td></td><td>(I) The Company's "Risk Management Policies and Procedures" were established on August 4, 2021 and approved by the Board of Directors. The Company's "Corporate Social Responsibility Committee" was renamed "Sustainable Development Committee" in October 2022. In addition to the existing ESG Promotion Team, the "Sustainable Development Committee" established the "Risk Management Team" for management of operational risk matters such as risk assessment and response. The members of the Risk Management Team identify, measure and respond to risk items foreseen by each internal and external units, and conducts necessary improvements and follow-ups for the identified risks, effectively control the risks, and make them controllable. For relevant risk information, please visit the official website (https://www.apacer.com/zh-tw/html/risk-management).
(II) As the risk management policy states, when engaging in operational activities, the Company shall carefully examine potential internal and external risks from the perspective of corporate sustainability, implement the risk management mechanism, and improve the efficiency of risk management under division of work, so as to reasonably ensure the achievement of the Company's strategic goals.</td><td>We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies.</td></tr>
<tr><td>III. Environmental issues
(I) Does your company establish environmental management systems suitable for your industrial characteristics?</td><td>V</td><td></td><td>(I) The Company has established an environmental management system which received the ISO 14001 certification in 2005. On 4/16/2023, the system passed the ISO 14001:2015 external verification, and the effective period of the updated version of the certification is from 4/30/2023~4/29/2026. We regularly</td><td>We are in compliance with the Sustainable Development Best Practice Principles for</td></tr>
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<tr><th rowspan="2">Item of Implementation</th><th colspan="3">Status of implementation</th><th rowspan="2">Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons</th></tr>
<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
<tr><td>
(II) Does your company put efforts into enhancing the efficiency of resource usage and use recycled materials which have a low impact on the environmental load?
(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?</td><td>
V
V</td><td></td><td>conduct internal audits and management reviews to ensure the operations are in compliance with relevant environmental regulations and international standards. The aim is to achieve environmental sustainability. For the performance of carbon reduction, please visit the website https://www.apacer.com/zh-tw/pageguide/performance-overview
(II) We have enhanced the efficiency of resource usage and cut the use of hazardous substances through regular meetings and internal information dissemination, in order to achieve the objectives of waste reduction and lower the environmental impact.
(III) We listed natural disasters as an important risk assessment aspect, identified the climate risks and opportunities that affect Apacer the most based on the TCFD framework, and established a business operation maintenance plan to fully assess the risk of business interruptions due to natural disasters. We also established backup steps and principles to increase response efficiency and decrease possible losses in the case of emergencies.
Significant risks and opportunities are described below.
<table><tr><th>Risk/ opportunity</th><th>Descriptio n</th><th>Potential financial impact</th><th>Response strategies</th></tr><tr><td>Risk</td><td>Increasingly tightened restriction of environme ntal laws and regulations</td><td>There is a risk of being punished for failing to conform with the environmental policies in a timely manner, or a risk of impact on the profit due to the increase in operating cost and limitations on the supplies of energy or resources resulting from the strict regulations.</td><td>Continually keep track of the changes in laws and regulations, and foresee the trends and possible changes of laws and regulations based on the experience of external consultants and industry peers and the international cases to develop the response strategies.</td></tr></table></td><td>TWSE/TPEx Listed Companies.</td></tr>
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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	Summary	

Risk/ opportunity	Description	Potential financial impact	Response strategies
Risk	Higher cost of carbon emission management	To control the carbon emission, the Company might need to update the equipment and purchase external energy, which would bring us a higher operating cost and a lower revenue.	Consider the equipment with low power consumption first with maintaining the quality as the principle when updating the equipment, and take the balance of costs into account when purchasing energy.
Opportunity	Promotion of the energy-saving and carbon-reducing production	There is an opportunity for us to save the production cost by reducing the use of energy and resources for production.	Enhance the efficiency of the production process through electronization and process optimization, so as to reduce the use of energy and resources and further save the production cost.
Opportunity	Engagement in the market for green products	As the international trend shows a growing demand for green products, designing products that meet the customers' environmental protection and energy saving requirements is helpful for the development of potential markets and increases the revenue.	Develop green products and the market for low-carbon products as well as making use of the technology of our main business to become one of the members in the supply chain of new energy or low-carbon products.
Opportunity	Promotion of the positive corporate image	Satisfying the stakeholders' expectation can promote the positive corporate image, accumulate brand value and further bring potential business opportunities.	Strengthen the corporate image of green production by introducing energy-saving and carbon-reducing production and entering the market for green products, etc.

Item of Implementation	Status of implementation			Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
(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		For more information about the climate change risk management, please refer to pages 49-51 of the 2022 Corporate Sustainability Report. (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. For the data of greenhouse gas emissions, water consumption and total waste weight, please refer to the ESG section on the website (https://www.apacer.com/zh-tw/pageguide/sustainable-operation).	
IV. Social issues (I) Does Apacer have management policies and procedures in accordance with relevant regulations and international human rights conventions? (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 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) In 2017, Apacer integrated all the existing welfare measures, carried out 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 and the 2023 Happy Enterprise Award from 1111 Job Bank.	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	Summary	
			As of the end of 2023, the Company's statistics on the gender of employees around the world show a rather balanced gender ratio, with 54% of female employees and 46% of male employees. The employees of our headquarters in Taiwan have been analyzed based on the employee type, and the result shows that 2.2% are senior management, with a gender ratio of 1:1.5 (female to male). 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 childbearing. Moreover, our operating performance is properly 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.	
(III) Does your company provide a safe and healthy work environment to its employees and provide them with safety and health education?	V		(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.	
(IV) Does your company have effective programs for the development and training of employees' career skills?	V		(IV) In 2014, we began to comprehensively implement HR operations 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 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.	
(V) With respect to the issues such as customer health and safety, customer privacy, marketing and labeling of	V		(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	

Item of Implementation	Status of implementation: Yes	No	Summary	Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
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?			regulations and international standards and strictly prohibit deceit, misguidance, fraud or any other act that damages the trust or rights of customers.	
(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?	V		(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. 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. 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 supplier evaluation and rating results, please refer to the Corporate Sustainability Report.	

Item of Implementation	Status of implementation			Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			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 "Becoming Better Partners".	
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 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。	We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies.
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.				
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				
VIII. If your company's CSR reports have been verified by any relevant verifying agency, please describe in detail: Our 2022 Corporate Sustainability Report has been certified by the British Standards Institution (BSI). 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。 On the publication date of the annual report, the 2023 Corporate Sustainability Report was still under review by the BSI.				

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

1. Implementation of climate-related information

<table>
<tr><th>Item</th><th>Status of implementation</th></tr>
<tr><td>(I) Describe board and management oversight and governance of climate-related risks and opportunities.
(II) Describe how the identified climate risks and opportunities affect the Company's business, strategy and finances (short-term, medium-term, long-term).</td><td>(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)
<table>
<tr><th>Risk/ opportunity</th><th>Description</th><th>Financial impact level</th><th>Impact Statement</th><th>Response strategies</th></tr>
<tr><td>Risk 1</td><td>Regulations and policies</td><td>Direct</td><td>Additional sustainability-related norms and regulations</td><td>The organization may increase the cost for purchase of green power certificates, etc. in response to regulatory requirements</td></tr>
<tr><td>Risk 2</td><td>Greenhouse gas emissions</td><td>Direct</td><td>Additional cost of greenhouse gas emissions</td><td>In response to norms and regulations, the Company must purchase energy-consuming production equipment or energy-saving facilities, and the operating cost is increased as a result.</td></tr>
<tr><td>Opportunity 1</td><td>Promotion of the energy-saving and carbon-reducing production</td><td>Direct</td><td>In the manufacturing process, work stations are combined to reduce electricity consumption and paper waste.</td><td>The production cost is reduced by applying electronic integrated systems and combining test workstations</td></tr>
<tr><td>Opportunity 2</td><td>Design of green products</td><td>Direct</td><td>Environmental awareness is rising to avoid paper waste and design new products</td><td>E-paper products are developed to replace printing of paper and thus reduce felling of trees</td></tr>
</table>
</td></tr>
<tr><td>(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.</td><td>(III) There is no corresponding assessment.
(IV) In order to understand the risks that climate change may bring to the Company, Apacer performs identification and ranking of climate-related risks/opportunities based on Task Force on Climate Related Financial Disclosures (TCFD) to understand what risks/opportunities may have an impact on Apacer. Apacer will refer to climate change research reports of international organizations and combine it with the climate risk and opportunity matrix to incorporate energy conservation, carbon reduction, water conservation and other sustainable management plans in the Company's business policies.
Significant impact of relevant risks can be identified through risk identification based on “impact level” and “likelihood of occurrence”.</td></tr>
</table>

Item	Status of implementation
(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.	(V) There is no corresponding assessment.
(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.	(VI) There is no corresponding plan.
(VII) If internal carbon pricing is used as a planning tool, the basis for setting the price shall be stated.	(VII) There is no corresponding plan.
(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.	(VIII) There is no corresponding plan.
(IX) Greenhouse gas inventory and assurance, reduction goals, strategies and specific action plans (to be provided 1-1 and 1-2 separately).	(IX) Please refer to 1-1 and 1-2 for details.

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 (tCO2e), intensity (tCO2e/NT$1 million) and data coverage in the most recent two years
According to the schedule planned by the Financial Supervisory Commission, the Company does not yet need to disclose greenhouse gas inventory information. However, the company follows GRA standards and discloses relevant information in the Corporate Sustainability Report.

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.
According to the schedule planned by the Financial Supervisory Commission, the Company does not yet need to disclose greenhouse gas assurance information.

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.
According to the schedule planned by the Financial Supervisory Committee, the Company does not yet need to disclose the goals, strategies and specific action plans of greenhouse gas reduction.

(VI) Implementation of corporate ethical management and differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
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	Summary	
(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 HR 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 in 2023 were reported at the board meeting on December 14, 2023 according to Article 5 of the "Procedures for Ethical Management and Guidelines for Conduct": ● 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: Yes	No	Summary	Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
			● 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	
(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?	V		(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 HR unit, or the Board of Directors in the event that they have learned or are facing similar circumstances. So far, we have not found any material violation.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
(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?	V		(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.	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	Summary	
(V) Does your company regularly hold internal and external education and training sessions regarding ethical management?	V		(V) Our regulations governing ethical management have been included as part of the internal education and training for employees. In 2023, the internal employees were provided with ethical management training sessions that covered labor, health and safety, environmental health, ethical standards, management systems and other RBA-related issues. The Chairman and CSO promoted the concept at the beginning of training in person, and the number of employees of the Group participating in the sessions totaled 514. In 2023, a supplier conference for external suppliers was held to disseminate the importance of ethical management. Covering labor, health and safety, environmental health, ethical standards, management systems and other RBA-related issues, and a total of 217 have attended the conference.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
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?	V		(I) We have established the “ Whistleblowing System”, which clearly states whistleblowing and reward systems and stipulates that the managers of the auditing and HR units are designated as the persons responsible for these matters.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
(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?	V		(II) The “Whistleblowing System” includes relevant investigation procedures, subsequent defect improvement measures and mechanisms for confidentiality.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
(III) Does your company take any measures to protect whistleblowers from improper treatment as a result of their whistleblowing?	V		(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.

<table>
<tr><th rowspan="2">Item for evaluation</th><th colspan="3">Description</th><th rowspan="2">Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons</th></tr>
<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
<tr><td>IV. Strengthening disclosure of information
Does your company disclose the contents of its ethical management principles and outcome of implementation on its website and the Market Observation Post System?</td><td>V</td><td></td><td>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 continuous analysis and assessment of the implementation of ethical management policies, in order to enhance the effectiveness of our corporate ethical management.</td><td>In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.</td></tr>
<tr><td colspan="5">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.</td></tr>
<tr><td colspan="5">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 14, 2023, we have not received any report regarding violation of the relevant codes and conduct guidelines.</td></tr>
</table>

(VII) If your company has established corporate governance best practice principles and relevant regulations, the ways through which they can be searched for must be disclosed:

For our Corporate Governance Best Practice Principles and relevant regulations, please visit our website (http://www.apacer.com/)

(VIII) Other important information helpful for increasing understanding of your 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. Apacer's 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

(IX) 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 23, 2024

Based on the result of self-inspection of Apacer's internal control system in 2023, 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 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.

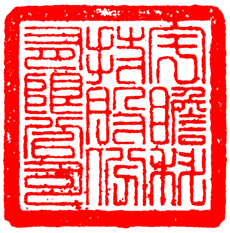
IV. The Company has adopted the aforementioned judgment items to examine the effectiveness of the design and implementation of our internal control system.

V. Based on the result of the examination, we determined that, until December 31, 2023, 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 bylaws, 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 23, 2024. 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

President: Chang Chia-Kun

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

(X) During the most recent FY as of the date on which the annual report was printed, did the company or its internal personnel receive punishment in accordance with the law? Did the company's internal personnel receive punishment for violating the requirements of the internal control system? Please describe any defect found during the same period and its status of improvement: None.

(XI) Important resolutions of the shareholders and board meetings in the most recent year up to the publication date of the annual report:

1. Important resolutions of the Shareholders' Meeting

Date of meeting	Meeting resolutions	Status of implementation
2023.5.29	Proposal to ratify the business report and financial statements of FY 2022 was adopted.	The proposal was adopted without revision.
	Proposal to exempt the independent director, Cathy Han, from non-compete restrictions was adopted.	The proposal was adopted without revision.
	Proposal to issue common stocks through private placement for cash capital increase was adopted.	The proposal was adopted without revision. March 1, 2024 is the base date for capital increase. The change registration was completed on April 1, 2024.

2. Important resolutions of the board meetings

Term of the Board of Directors	Time	Proposal
1st meeting in 2023	2023.02.21	(I) Proposal for distribution of the remuneration for employees and directors in FY 2022 was adopted. (II) The business report and self-prepared financial statements of FY 2022 were adopted. (III) Proposal for distribution of the profit of FY 2022 was adopted. (IV) Proposal to issue the "Internal Control System Declaration" of FY 2022 was adopted. (V) Proposal to exempt the Independent Director, Cathy Han, from non-compete restrictions was adopted. (VI) Proposal for amendment to partial provisions of the "Sustainable Development Best Practice Principles" was adopted. (VII) Proposal for decision on the date and relevant matters of the 2023 shareholders' meeting was adopted.
2nd meeting in 2023	2023.04.18	(I) Philip Tang and Shih Wei-Ming, 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. (II) The quarterly consolidated financial statements for the first quarter of FY 2023 were adopted. (III) Proposal to issue common stocks through private placement for cash capital increase was adopted.

Term of the Board of Directors	Time	Proposal
		(IV) Establishment of the “non-assured service pre-approving policy” of the Company was adopted. (V) Proposal for amendment of partial provisions of the “Corporate Governance Best Practice Principles” was adopted. (VI) Proposal for update of the matters related to the 2023 shareholders’ meeting on May 29, 2023 was adopted.
3rd meeting in 2023	2023.7.27	(I) Proposal for adjustment of salary for managers in 2023 was adopted. (II) The quarterly consolidated financial statements for the second quarter of FY 2023 were adopted.
4th meeting in 2023	2023.11.06	(I) The quarterly consolidated financial statements for the third quarter of FY 2023 were adopted. (II) Adoption of the internal audit plan for FY 2024.
5th meeting in 2023	2023.12.14	(I) The strategic development and operational plans of FY 2024 were adopted. (II) Proposal for distribution of the performance bonus for managers in FY 2023 was adopted. (III) Proposal for distribution of the employee remuneration for managers in FY 2023 was adopted. (IV) Proposal for distribution of the Employee Stock Ownership Trust for managers in FY 2024 was adopted. (V) Proposal for amendment of the “Regulations Governing the Transactions among Related Parties” was adopted. (VI) Proposal to apply for extending contracts with financial institutions concerning the credit line and transaction limit for hedging financial products in FY 2024 was adopted.
1st meeting in 2024	2024.02.23	(I) Proposal for distribution of the remuneration for employees and directors in FY 2023 was adopted. (II) Proposal for transfer of the Company's managers was adopted. (III) Proposal for the regulations on shareholding of the managers was adopted. (IV) Proposal for amendments to the Company’s “Articles of Association of the Employee Stock Ownership Trust Management Committee” was adopted. (V) Yin Yuan-Sheng and Shih Wei-Ming, 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. (VI) The business report and self-prepared financial statements of FY 2023 were adopted. (VII) Proposal to issue the “Declaration on the Internal Control System” of FY 2023 was adopted. (VIII) Proposal for issuance of new shares for cash capital increase by way of private placement was adopted. (IX) Proposal for amendment of the “Articles of Incorporation” was adopted. (X) Proposal to hold a new election of the directors due to expiration of the current term was adopted.

Term of the Board of Directors	Time	Proposal
		(XI) The list of candidates nominated for directors (including Independent Directors) after discussion was adopted. (XII) Proposal to exempt newly elected directors and their representatives from non-compete restrictions was adopted. (XIII) Proposal to convene the annual general meeting of shareholders in FY 2024 was adopted.

(XII) 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.

(XIII) Summary of resignation or dismissal of the company's chairman, president, accounting manager(s), financial manager(s), internal audit manager(s) and R&D manager(s) during the most recent FY as of the date on which the annual report was printed: None.

IV. Information on CPA's 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: TWD 1,000

Accounting firm	Name of CPA	CPA's audit period	Audit professional fees	Non-audit professional fees (Note)	Total	Remarks
KPMG Taiwan	Philip Tang Shih Wei-ming	FY 2023	4,110	805	4,915	-

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.

V. Information on change of CPAs (If the company changed the CPAs during the most recent two FYs and their subsequent periods, the following information must be disclosed)

(I) On the predecessor CPAs: None.

(II) On the successor CPAs: None

(III) Letters of reply from the predecessor CPAs: None.

VI. The company's chairman, president, or financial/accounting manager serving in the CPAs' firm(s) or any of its affiliates during the most recent year: None.

VII. 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	2023		2024, until April 2	
		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 and CSO	Austin Chen	-	-	-	-
Director and CEO	Chang Chia-Kun (Note 1)	219,817	-	39,000	-
Director	Teddy Lu	-	-	-	-
Director	Haydn Hsieh	-	-	-	-
Director	George Huang	-	-	-	-
Director	Phison	-	-	-	-
Independent Director	Max Wu	-	-	-	-
Independent Director	Philip Peng	-	-	-	-
Independent Director	Cathy Han	-	-	-	-
President	Chen Ming-Ta (Note 2)	-	-	-	-
Vice President	Luo Rong-Fa	27,442	-	57,000	-
Vice President	Huang Mei-Hui	31,606	-	-	-
Vice President	Luo Xue-Ru	48,813	-	-	-
CTO	Li Jun-Chang	27,024	-	-	-
CFO	Lai Zi-Wen	27,024	-	-	-
Senior Head	Yin Hua-Jun	34,481	-	(2,437)	-
Senior Head	Yu Yao-tse	10,721	-	-	-
Accounting manager	Huang Yi-cheng (Note 3)	5,791	-	-	-

Note 1: The CEO, Chang Chia-Kun, was inaugurated on April 1, 2024. He continues to have ultimate management responsibilities.

Note 2: The President, Chen Ming-Ta, was inaugurated on April 1, 2024.

Note 3: The Accounting manager, Huang Yi-cheng, was inaugurated on August 1, 2023.

2. Information on share transfer: None.

3. Information on pledge of shares: None.

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

April 2, 2024 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%	-	-	-	-	-	-	-
Advantech Corporate Investment Ltd.	6,041,000	4.69%	-	-	-	-	-	-	-
Teddy Lu	5,699,906	4.43%	-	-	-	-	-	-	-
Shanlin Investment Co., Ltd.	4,000,000	3.11%	-	-	-	-	-	-	-
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	1,240,000	0.96%	-	-	-	-	-	-	-
George Huang	1,207,041	0.94%	-	-	-	-	-	-	-
Chang Cheng-Hsiung	1,200,000	0.93%	-	-	-	-	-	-	-

IX. 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

April 2, 2024 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 Technologics 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%
JoiiUp Technology Inc.	750,000	10.35%	-	-	750,000	10.35%
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.

Four. Financing

I. Capital and share

(I) Capital sources

1. Capital sources

As of April 2, 2024
Unit: Share/1,000s of TWD

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.
2022/9	10	200,000,000	2,000,000	111,688,266	1,116,883	Note 1	Note 1	2022.09.01 Jing-Shou-Shang-Zi No. 11101154500
2022/12	10	200,000,000	2,000,000	122,688,266	1,226,883	Note 2	None	2022.12.02 Jing-Shou-Shang-Zi No. 11101228810
2024/3	10	200,000,000	2,000,000	128,729,266	1,287,293	Note 3	None	2024.04.01 Jing-Shou-Shang-Zi No. 11330039570

Note 1: Share exchange via the issuance of new shares for capital increase in 2022.

Note 2: Issuance of new shares for cash capital increase by way of private placement in 2022.

Note 3: 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 general declaration systems: None

(II) Structure of shareholders

April 2, 2024

Structure / Number	Government agency	Financial institution	Other corporate bodies	Individual	Foreign institutions	Total
Shareholders (persons)	0	0	275	43,645	120	44,040
No. of shares held (share)	0	0	40,847,395	73,816,254	14,065,617	128,729,266
Shareholding ratio (%)	0.00%	0.00%	31.73%	57.34%	10.93%	100%

(III) Ownership distribution

April 2, 2024

Share	Shareholders	No. of shares held (share)	Shareholding ratio (%)
1 to 999	31,226	903,260	0.70%
1,000 to 5,000	10,735	20,130,860	15.64%
5,001 to 10,000	1,146	9,103,959	7.07%
10,001 to 15,000	282	3,620,947	2.81%
15,001 to 20,000	185	3,457,091	2.69%
20,001 to 30,000	151	3,905,132	3.03%
30,001 to 40,000	70	2,484,437	1.93%
40,001 to 50,000	43	1,995,010	1.55%
50,001 to 100,000	97	6,895,717	5.36%
100,001 to 200,000	42	6,081,802	4.72%
200,001 to 400,000	32	9,143,218	7.10%
400,001 to 600,000	11	5,432,819	4.22%
600,001 to 800,000	5	3,468,833	2.69%
800,001 to 1,000,000	4	3,542,981	2.75%
1,000,001 or more	11	48,563,200	37.74%
Total	44,040	128,729,266	100.00%

(IV) Major shareholders

April 2, 2024

Share / Major shareholder	No. of shares held (share)	Shareholding ratio (%)
Phison Electronics Corp.	12,554,580	9.75%
Acer Inc.	11,928,000	9.27%
Advantech Corporate Investment Ltd.	6,041,000	4.69%
Teddy Lu	5,699,906	4.43%
Shanlin Investment Co., Ltd.	4,000,000	3.11%
Chen Ming-Ta	1,990,040	1.55%
Austin Chen	1,525,633	1.19%
Zhuang Zhong-Yu	1,240,000	0.96%
George Huang	1,207,041	0.94%
Chang Cheng-Hsiung	1,200,000	0.93%

(V) Information on the market price, net value, earnings, and dividend per share in the recent two years

Unit: TWD/1,000 shares

<table>
<tr><th colspan="3">Item \ Year</th><th>2022</th><th>2023</th><th>2024 as of March 31</th></tr>
<tr><td rowspan="3">Market price per share (Note 1)</td><td colspan="2">Maximum</td><td>53.30</td><td>64.40</td><td>77.70</td></tr>
<tr><td colspan="2">Minimum</td><td>34.60</td><td>40.95</td><td>55.60</td></tr>
<tr><td colspan="2">Average</td><td>42.12</td><td>54.08</td><td>63.35</td></tr>
<tr><td rowspan="2">Net value per share</td><td colspan="2">Before allocation</td><td>33.94</td><td>35.12</td><td>Note 5</td></tr>
<tr><td colspan="2">After allocation</td><td>28.71</td><td>To be determined</td><td>-</td></tr>
<tr><td rowspan="3">Earnings per share</td><td colspan="2">Weighted average shares</td><td>106,846</td><td>122,682</td><td>-</td></tr>
<tr><td colspan="2">EPS (before adjustment)</td><td>5.23</td><td>4.51</td><td>Note 5</td></tr>
<tr><td colspan="2">EPS (after adjustment)</td><td>5.23</td><td>4.51</td><td>-</td></tr>
<tr><td rowspan="4">DPS</td><td colspan="2">Cash dividend</td><td>3.30</td><td>To be determined</td><td>-</td></tr>
<tr><td rowspan="2">Stock grants</td><td>From retained earnings</td><td>-</td><td>To be determined</td><td>-</td></tr>
<tr><td>From capital reserve</td><td>-</td><td>To be determined</td><td>-</td></tr>
<tr><td colspan="2">Accumulated unpaid dividend</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td rowspan="3">ROI analysis</td><td colspan="2">PE (Note 2)</td><td>8.05</td><td>-</td><td>-</td></tr>
<tr><td colspan="2">PD (Note 3)</td><td>12.76</td><td>-</td><td>-</td></tr>
<tr><td colspan="2">Cash dividend yield % (Note 4)</td><td>7.83</td><td>-</td><td>-</td></tr>
</table>

Note 1: Source: TWSE website

Note 2: PE = Average closing price per share of the current year / EPS

Note 3: PD = Average closing price per share of the current year / cash dividend per share

Note 4: Cash dividend yield = (Cash dividend per share / average closing price per share of the current year) x 100%.

Note 5: The 2024 Q1 financial data have not yet been completely reviewed by CPAs as of the publication date of the annual report.

(VI) 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) Provide or reserve as a special earnings reserve pursuant to laws and regulations.

(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 discusses the distribution of the surplus left in the current year in combination with the unpaid earnings of the previous years, and reports to the shareholders’ meeting for approval.

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 of 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 Board of Directors has not yet resolved on the profit distribution for FY 2023 as of the publication date of the annual report.

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

The Board of Directors has not yet resolved on the profit distribution for FY 2023 as of the publication date of the annual report.

(VIII) Remunerations for 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. 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.

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 distribution of dividends, 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 2023 approved by the Board of Directors

Unit: TWD

Disclosed Information	**Amount**
Remuneration to be distributed to employees - Cash	$70,405,000
Remuneration to be distributed to employees - Shares	-
Remuneration to be distributed to directors	$10,119,000
Number of shares to be distributed to employees as dividends and the percentage it occupies in surplus to capital increase	None
Imputed EPS after proposed distribution of remuneration to employees and directors	4.51 (basic) 4.46(diluted)

Note: Information related to the distribution of profit in 2023 can be accessed through the Market Observation Post System.

4. Actual distribution of the remuneration to employees and directors in 2022:

Distribution of the remuneration to employees and directors in 2022 was adopted at the shareholders' meeting on February 21, 2023 The approved distribution was not different from the estimate. The details are described below:

Unit: TWD

<table>
<tr><th>Profit Distribution for FY 2022</th><th>Actual distribution</th><th>Book estimation</th><th>Difference</th></tr>
<tr><td>Remuneration distributed to employees - Cash</td><td>83,479,000</td><td rowspan="2">83,479,000</td><td rowspan="2">-</td></tr>
<tr><td>Remuneration distributed to employees - Shares</td><td>-</td></tr>
<tr><td>Remuneration distributed to directors</td><td>10,682,859</td><td>10,682,859</td><td>-</td></tr>
</table>

5. Names of the top-10 employees receiving the highest remuneration from the profit of 2022 and the distribution:

Unit: TWD

Title	Name	Share amount	Cash amount	Total	The total amount in net income after tax (%)
Chairman and CSO	Austin Chen	-	20,042,000	20,042,000	4.13%
President	Chang Chia-Kun				
Senior Vice President	Chen Ming-Ta				
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				
Senior Head	Xie Zheng-Zhong				

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

II. Status of corporate bonds

N/A

III. Status of preferred stock

N/A

IV. Status of overseas depositary receipts

N/A

V. Status of employee stock option certificates

(I) Status of the employee stock option certificates that have not fallen due and their effect on shareholders' equity must be disclosed as of the date on which the annual report was printed: None.

(II) Status of employee stock option certificates acquired by management team and top-10 employees, acquisition and subscription as of the date on which the annual report was printed: None.

VI. Status of employee restricted stock

(I) Status of the employee restricted stock that has not met all the conditions and its effect on shareholders' equity must be disclosed as of the date on which the annual report was printed: 1st issuance of employee restricted stock in 2021 were all vested and the restriction on rights were moved on Janauary 6,2023. There is no impact on shareholders' equity.

(II) Status of the employee restricted stock acquired by managers and top-10 employees and the acquisition as of the date on which the annual report was printed:

Unit: Share

	Title	Name	Number of acquired employee restricted shares	Ratio of number of acquired employee restricted shares to the total issued shares	Restriction on rights has been removed				Restriction on rights has not been removed			
					Number of shares from which the restriction has been removed	Issue price	Issue Amount	Ratio of number of shares from which the restriction has been removed to the total issued shares	Number of shares from which the restriction has not been removed	Issue price	Issue Amount	Ratio of number of shares from which the restriction has not been removed to the total issued shares
General manager	President	Chang Chia-Kun	606,112	0.5%	606,112	0	0	0.5%	0	0	0	0%
	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 Assistant Manager	Huang Yi-cheng										
Employee	Senior Head	Xie Zheng-Zhong	212,331	0.2%	212,331	0	0	0.2%	0	0	0	0%
	Business unit head	Quan Sen-yu										
	Business unit head	Chiu Hsien-Hui										
	Deputy Head	Lin Zhi-Liang										
	Deputy Head	Huang Jian-Zhong										
	Deputy Head	Lin Xia-Yun										
	Deputy Head	Li Wen-Chuan										
	Senior manager	Tseng Yuan-Hung										
	Senior manager	Kuo Hui-Chen										
	Managerial	Hsu Mei-Hui										

VII. Status of new share issuance in connection with mergers or acquisitions or with acquisitions of shares of other companies: N/A.

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.

As of 2023 Q1, the funds raised from the private placement of securities in 2022 were all utilized by the Company; the planned benefits have been achieved.

As of March 31, 2024, the funds raised from the private placement of securities in 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.

Five. Overview of Business Operation

I. Business activities

(I) Business scope

1. Major business

(1) Memory module

(2) Flash memory

(3) Others

2. Operating proportion

Unit: TWD 1,000

Product	2023	
	Sales amount	**Sales percentage**
Flash memory	4,814,226	63.08%
Memory module	2,740,538	35.91%
Other	76,682	1.01%
Total	7,631,446	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 (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^{TM} 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. Military 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. USB3.0 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. Luminance meter / Light meter / Stroboscope

HH. 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)

II. Smart healthcare solutions (smart environmental safety management system, smart personal safety protection system, LINE AI smart service cloud management system)

JJ. 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) DDR5 5600 48GB UDIMM/SODIMM/ECC DIMM/ECC SODIMM memory module

(2) DDR5 5600 REG DIMM server memory module
(3) DDR5 5600 wide-temperature memory module
(4) DDR5 Fully Lead Free memory module
(5) DDR5 8000+MHz overclocking memory module
(6) USB3.2 Gen2 USB & USB4
(7) Server storage SSD: PCIe U.2, U.3 SSD / BGA SSD / M.3 module / EDSFF module
(8) Gen5 PCIe SSD RGB
(9) PCIe Gen5x4 SSD, USB3.2 Gen2x2 portable SSD
(10) All-In-One water cooling Dual Pump Solution
(11) Micro LED optical inspection system
(12) Luminance / Light 2-in-1 inspection device
(13) UV optical testing device
(14) IR optical testing device
(15) 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, smart phones, 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

A. Market size

According to the data in areport from Gartner, a research and survey agency, published in January 2024, the market scale of the global semiconductor industry in 2023 was USD 533 billion with an annual decline of 11.1%. The reason for the weakness was the fact that the end demand was spreading from consumers to companies, creating an uncertain investment environment. The oversupply of wafers has led to increased inventories, lower prices, and lower fab capacity utilization than ever, leading to a recession in the global semiconductor market in 2023. The long-sluggish semiconductor boom may have bottomed out and is expected to rebound in 2024. Driven by the demand for AI, HPC, and electrification, Gartner predicts that the global semiconductor market will resume growth in 2024 at a growth rate of 17%, and the market scale will reach USD 624 billion. The overall market size will even exceed that between 2021 and 2022.

As far as the memory industry is concerned, Gartner points out that due to the sluggish demand for storage flash memory (NAND Flash) and dynamic random access memory (DRAM), the market is oversupplied and product prices will fall. The overall memory revenue was expected to fall by 38.8% in 2023. As suppliers reduce production, Gartner predicts that NAND Flash and DRAM prices will bottom out and rebound. The revenue in 2024 will increase by 49.6% and 88%, respectively, and the overall memory revenue will increase by 66.3%.

As for the DRAM revenue in the fourth quarter of 2023, Samsung's revenue reached USD 7.95 billion, a quarterly increase of more than 50%, and its market share returned to more than 40%, with an increase of 6.6% to 45.5%, to maintain its first place. Samsung mainly benefited from the accelerated shipment of 1alpha nm DDR5 in this quarter after mass production in the previous quarter, resulting in a 60% quarterly increase in server DRAM shipments. SK Hynix, ranked second, has seen shipment growth slow down, with only 1-3% quarterly growth. However, it continues to benefit from price advantages in the HBM and DDR5 fields, as well as profits from high-capacity server DRAM modules with an increase of the average price by 17-19% quarterly and an increase of the operating revenue by 20.2% to the amount of USD 5.56 billion. The market share reached 31.8% with a decrease of 2.5% from the previous quarter. Micron, ranked third, grew by 4-6% in both shipments and ASP. The proportion of DDR5 and HBM were relatively low, so the revenue growth was relatively moderate with an increase of 8.9% from the previous quarter to the amount of USD 3.35 billion. The market share reached 19.2% with a decrease of 3.6% from the previous quarter. (See Fig. 1)

Benefiting from the effect of production cuts by original manufacturers and the booming development of various AI applications, the price has rebounded and the revenue and profit margins of all original manufacturers have been better than the performance in the previous quarter. Samsung's operating profit margin increased from -6% to 10% in the fourth quarter of 2023, SK Hynix's operating profit margin increased from 10% to 23%, while the operating profit margin of Micron converged from -27% to -18%. (See Fig. 2)

Unit: Millions of US$

Ranking	Company	Revenue			Market Share	
		4Q23	3Q23	QoQ (%)	4Q23	3Q23
1	Samsung	7,950	5,250	51.4%	45.5%	38.9%
2	SK Hynix	5,560	4,626	20.2%	31.8%	34.3%
3	Micron	3,350	3,075	8.9%	19.2%	22.8%
4	Nanya	274	244	12.1%	1.6%	1.8%
5	Winbond	133	112	19.5%	0.8%	0.8%
6	PSMC	39	19	110.0%	0.2%	0.1%
	Others	158	155	1.7%	0.9%	1.2%
Total		17,464	13,480	29.6%	100.0%	100.0%

Note 1: 3Q23 - USD 1 = KOW 1,313; USD 1 = TWD 31.7

Note 2: 4Q23 - USD 1 = KOW 1,322; USD 1 = TWD 31.8

Source: TrendForce Corp., February 2024

Fig. 1 2023Q4 DRAM operating income ranking by brand

Company	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23
Samsung	48%	50%	38%	14%	-24%	-9%	-6%	10%
SK hynix	39%	43%	33%	6%	-50%	-2%	10%	23%
Micron	40%	42%	31%	6%	-55%	-36%	-27%	-18%
Nanya	31%	30%	8%	-19%	-45%	-45%	-56%	-47%

Source: TrendForce Corp., February 2024

Fig. 2 2023Q4 operating profit margins of DRAM suppliers

B. 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.

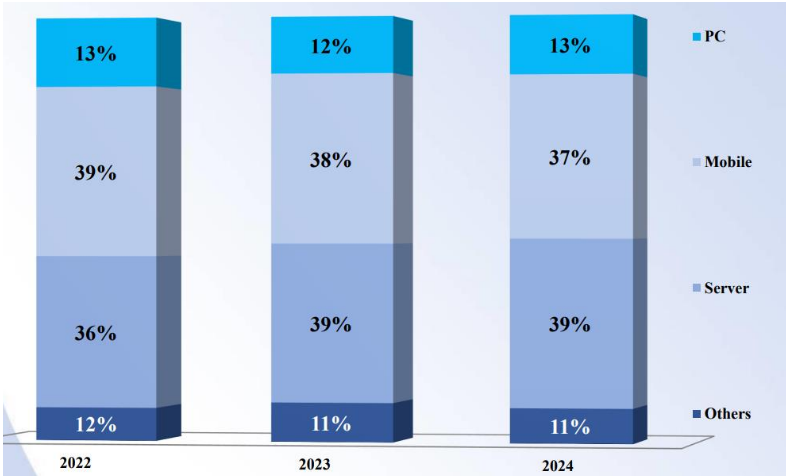
Commodity DRAM is the standard DRAM with PC related products as the major applications, such as DTs and NBs. Some low-end tablet PCs also use Commodity DRAM for price considerations.

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 application 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, server applications occupied the largest proportion in the 2023 global DRAM shipment, surpassing mobile devices.

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, projectors, etc., as well as related adapters, connectors, optical disc drives, hard drives, and solid-state drives (SSD) 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, such as digital TVs, DVD players, set-top boxes, digital cameras, MP3/4 players , game consoles, smart speakers and other products; (3) connection of communication equipment, such as mobile communication devices, routers, modems, optical fiber networks, wireless access hotspots (WiFi), base stations, power line communication networks, monitoring systems, Internet of Things, online audio and video services (OTT) and other products; (4) automotive electronic equipment, such as in-car CDs, DVDs, navigation, instrument panels, audio, car cameras, driving assistance systems and other products; (5) industrial electronic equipment, such as monitoring systems, POS systems, smart meters, human-machine interface (HMI) platforms and other industrial electronic equipment, also use 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 requirements of mobile device products. Smart phones 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. 3)



Source: inSpectrum, February 2024

Fig. 3 Estimated proportion of WW DRAM applications

In recent years, the in-vehicle DRAM has been a popular topic for discussion among people. The capacity of the in-vehicle DRAM is still low; however, according to Tole’s research, the in-vehicle DRAM market will grow at 20% CAGR between 2021 and 2027. In 2021, the revenue of the memory industry reached US$167 billion, accounting for 28% of the whole semiconductor industry. Meanwhile, the size of the automotive memory market was US$4.3 billion, which was 2.6% of the memory market and 10% of the automotive semiconductor market. The automotive memory market is still an extremely small market of applications for memory suppliers, but its growth in the future is worthy of attention and expectation. Micron is optimistic about the strong growth of DRAM and NAND Flash in the next few years. The main driving force will come from the increasing demand in the automotive, data center, and industrial end markets. It is estimated that the annual growth rate of DRAM bits in the automotive market will reach 40% by 2025, and that of NAND will be 49 %. Micron believes, as the self-driving functions of cars become increasingly powerful, memory requirements will also increase significantly. Fully self-driving cars require 30 times and 100 times more DRAM and NAND than vehicles only driven manually.

Related applications of automotive memories are currently divided into four major areas, including vehicle infotainment systems (Infotainment), advanced driver assistance systems (ADAS), vehicle information systems (Telematics), and digital instrument panels (D-cluster). In addition to the car-borne Infotainment system remaining the major application of DRAM by 2024, TrendForce expects that the DRAM bit consumption in the vehicle applications will occupy 3% of its overall bit consumption as the level of the autonomous vehicles is upgraded. The subsequent potential of DRAM should not be ignored. (See Fig. 4)

Usage in car	DRAM	NAND Flash
infotainment & Digital Cluster	4 - 64GB	64 - 512 GB
ADAS / Autonomous Driving	4 - 64GB	8 - 32 GB
Connectivity	0.5 - 2GB	4 - 32 GB
Rear-Seat Entertainment	4 - 16GB	64 - 256 GB
HD-Maps	0.5 - 1GB	8 - 512 GB
Accident recording	1 - 4GB	64 - 512 GB

Source: Compiled by SK Hynix / Capital Investment Management Corp, February 2023

Fig. 4 Capacity of automotive memory

As for the ADAS, Level 1 to Level 2 still dominate on the vehicle market and the consumption of DRAM remains low. As autonomous vehicle capabilities reach Autonomous Driving Level 3, or with more integrated AI functions, they must be able to integrate information, make decisions immediately, and process the data captured by the sensors instantaneously. For these, more bandwidth will be needed and the specifications of DRAM will develop from DDR3 to LPDDR4/4X or even to LPDDR5 and GDDR6/HBM (High Bandwidth Memory).

As for in-vehicle Telematics and D-cluster, the former is the communication system in the vehicle and mostly equipped with the MCP memory solution. The system is related to the level of the baseband and thus carries LPDRAM. As the V2V and V2X functions become more required than ever, the bandwidth of the memory will be a more important consideration and the DRAM will be upgraded from LPDDR2 to LPDDR4 or LPDDR5 gradually. However, the growth of the DRAM is dependent on how fast the 5G infrastructure is constructed because it needs the 5G network to execute point-to-point communication. Depending of the level of digitization, the DRAM of 2/4Gb is mainly used in D-cluster. The DRAM consumption will not increase substantially in this category. It may be integrated with the in-vehicle Infotainment to form a control unit in the future.

C. Overview of major DRAM suppliers

(A) DRAM manufacturers apply strategies of reduction in capital expenditure and production capacity

As memory manufacturers began suffering from great losses, the capital expenditure of the industry will have a significant decrease at around 30% in 2023. The DRAM supply bits dropped by -10% in 2023 due to the DRAM production slowdown.

Micron was the first supplier to announce the reduction in capital expenditure and production capacity. They sharply slowed down the production in 4Q22 and gave out an obvious message of their reluctance to continue reducing price for sale. Afterwards, SK Hynix also announced that their capital expenditure in 2023 will reduce by 50% in comparison with 2022. Samsung, leading memory manufacturer, was the latest to announce a capacity reduction policy, cutting DRAM and NAND Flash production from the second quarter to cope with weak demand and falling price.

Affected by the sluggish demand for DRAM's three major applications, the inventories of the three major suppliers (Samsung, SK Hynix and Micron) reached their peak in the first quarter of 2023. After the first phase of capacity reduction, the inventory level fell only slightly in the second quarter. As a result, these three leading suppliers continue to expand production cuts.

The DRAM supply and demand structure and the inventory status of the industries further improved in the second half of 2023. The main reason was not that terminal demand improved significantly, but that Samsung began to reduce production in April, and the benefits of the capacity reduction began to demonstrate its benefit in the third quarter. In order to solve the issue of high inventory, Samsung further cut more DRAM capacity from 20% in the second quarter and 25% in the third quarter to 30% in the fourth quarter. The reduction focused on DDR4. This move will help the supply and demand of the memory industry to restore balance faster. In addition, the three major suppliers will increase their profit and the proportion of high-demand High Bandwidth Memory (HBM) and DDR5 in the production. This will help reduce the inventory of mainstream DDR4 and niche DDR3.

(B) DRAM manufacturing process and production planning

As for the process planning of Samsung, with the mass production of 1alpha nm DDR5 in 2022, the proportion of 1alpha nm output rose rapidly to 21% in the fourth quarter of 2023, and further increase to 28% in the first quarter of 2024. At the same time, the small-scale trial production of 1beta nm has begun, which will be subsequently used to produce 16/32Gb DDR5 with an output proportion increasing to more than 10% by the end of the year. As for production planning, after a significant capacity reduction in the fourth quarter of 2023, the inventory level dropped significantly. Therefore, the capacity utilization rate will be adjusted upward from the first quarter of 2024 and the production volume will reach 535K. The second half of the year is the traditional peak season, and shipments are expected to increase. Therefore, the production volume will be adjusted upward to reach 700K in the fourth quarter of 2024.

As for process planning, SK Hynix has seen strong demand for 1alpha nm, with a production volume increased quarter by quarter. It will become a mainstream process in the third quarter of 2024 with an output share of 39%. The company is currently focusing on HBM products. The mass production of HBM3e (the fifth generation high-bandwidth memory) will drive the output proportion of the 1alpha nm process to 11% by the end of the year. The proportion of the above-mentioned advanced processes will exceed 50% by the end of 2024. As for production planning, thanks to the excellent performance of DDR5 and LPDDR5(X) products and the rapid increase in shipments, the production volume increased from the fourth quarter of 2023 to a production of 368K at present. In addition to the continuous increase in the production of the above-mentioned new products, after HBM3e enters the mass production stage in the second half of the year, the M16 production volume will increase accordingly and the total production volume will reach 460K by the end of the year.

As for process planning, Micron's mainstream process is 1alpha nm, and its output ratio has exceeded 50%. After the subsequent mass production of 1beta nm under OMT (One Mega Taiwan), the demand for DDR5, LPDDR5(X) and HBM produced using this process is relatively stable and the proportion will rise rapidly, accounting for nearly 40% of the output by the end of the year. As for production planning, due to the earlier capacity reduction, the inventory level has dropped significantly and 1beta DDR5 has entered the mass production stage. So, the production will begin to increase quarter by quarter from the fourth quarter of 2023, reaching 320K in the first quarter of 2024. Looking forward to the second half of 2024, the company will help customers introduce high-end processes, improve cost structures, and start mass production of HBM3e products. Therefore, focus of the company will be on process conversion and the production volume will be adjusted downward to 305K in the fourth quarter of 2024.

As for the manufacturing process, PSMC will maintained a share of 25nm, including DRAM Foundry production. at more than 70% throughout the year. This will remain the main product. Customers have invested in the next-generation 25Enm process, but the proportion of production is still low. The proportion at the end of the year will only rise to 5.7%. As for the production, in addition to IC design companies replenishing inventories, the price rebounds have also driven customers' demand for inventory reserves. Therefore, the production volume has begun to increase from 30K in the previous quarter to 32K in the first quarter of 2024. This will gradually increase to 42K by the end of the year.

As for the processes, The annual 20nm output remains above 80% and is still the company's mainstream manufacturing process; 1Anm continues to maintain small-volume production and is a transitional product. As for 1Bnm, it will become the main product in the expansion of production and its proportion will increase to 6% and surpass 1Anm by the end of 2024. As for production planning, the recovery momentum of the consumer DRAM market is relatively slow, so the company is still in the inventory reduction stage. The production volume in the first half of 2023 remained at a level of 53-55K. As the 1Bnm mass production began in the second half of the year, the first product put into production was D4 16Gb and the production volume is expected to rebound to 61K in 4Q24.

As for Winbond's process, the proportion of 25nm declined quarter by quarter and accounted for only 20.7% by the end of the year. The mainstream is 25Snm at the current stage with an output proportion of 47.1%. However, as the 20nm mass production begin, the proportion will decline to 19.7% by the end of the year. At the same time, the proportion of 20nm will rise rapidly in the second half of 2024, reaching 56.1% by the end of the year, and become the mainstream process. In terms of production planning, the Fab6 DRAM production continues to decline to 12K in 1Q24. The remaining space is used for Flash production capacity expansion and DRAM will be mainly produced at KH factory, which has reached the Phase-I mass production target of 10K. The production level will be increased to14K by the middle of the year. When combining the production of both factories, the total DRAM production volume will remain at 24K.

China has vigorously supported the semiconductor industry in recent years and one of the focuses is DRAM products made by ChangXin Memory Technologies Inc. (CXMT) and Fujian Jinhua Integrated Circuit (JHICC), which were established almost simultaneously in 2016. One is specialized in mainstream products on the market such as DDR4 8Gb and LPDDR4 8Gb, while the other is focusing on consumer DDR4 4Gb as its initial product. Under the leadership of national policies, the positioning of both companies is quite clear. However, the relationship between China and the United States continues to be tense, and in addition to the U.S. Department of Commerce, Japan has also added export controls on advanced chip manufacturing equipment. Although China's DRAM manufacturing process is still not under the ban and production has not been affected, the future improvement of production and process will encounter challenges.

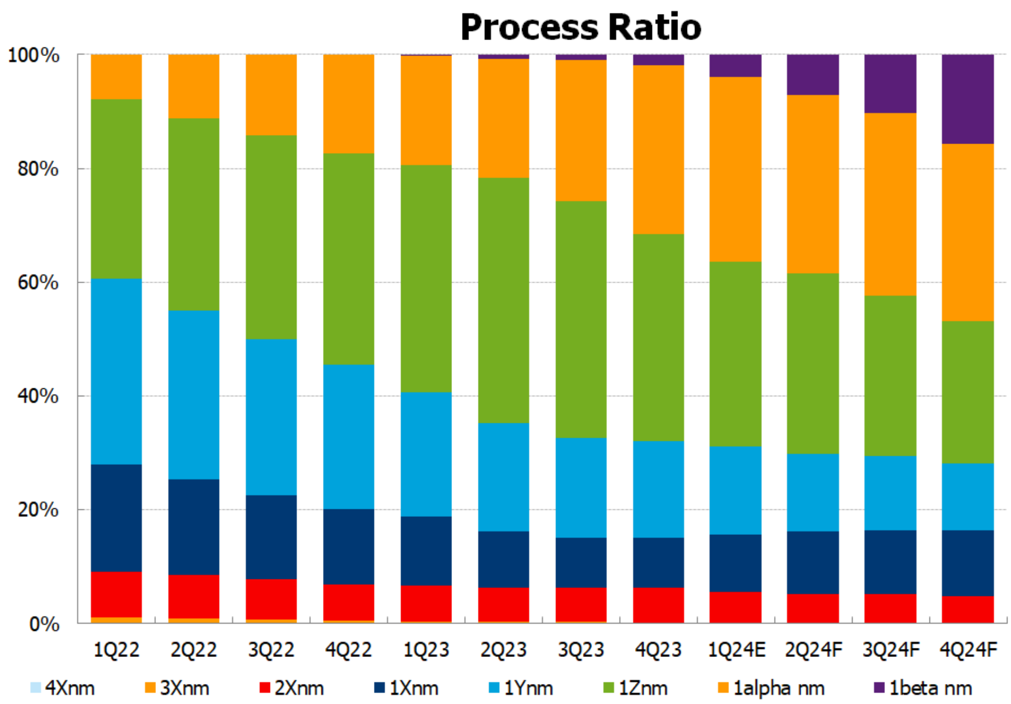
This is the most mature DRAM company in China so far. The factory is located in the Airport Economic Demonstration Zone of Hefei Economic and Technological Development Zone in Anhui Province. According to the plan, there will be three 12-inch factories in Hefei, each with a production capacity of 100K. At present, the Phase1 and Phase2 factories have been completed, and the production at Beijing fab2 has begun. Due to the concerns that the US ban will affect subsequent production, the company purchase machines quite actively to realize the production capacity expansion plan. As for the process, the current mainstream is still 19nm, but the proportion of 17nm has increased rapidly and will rise to more than 50% in 2Q24 as the mainstream product of the Company. The proportion of

LPDDR5 will increase in the production. (See Fig. 5 and Fig. 6)

Company	Current Generation	Under Transition	Next Generation
Samsung	1Ynm/1Znm	1Anm	1Bnm
SK Hynix	1Ynm/1Znm	1Anm	1Bnm
Micron	1αnm	1βnm	1γnm
PSC	25nm		
Nanya	20nm	1Xnm	
Winbond	25Snm	20nm	
Changxin	1Xnm	1Ynm	

Source: Compiled by Apacer in 2024

Fig. 5 Evolution of the DRAM process



Source: TrendForce Corp., February 2024

Fig. 6 DRAM process ratio

(C) 4Q23 changes in revenue share by products of DRAM manufacturers

Looking at the proportion of Samsung product revenue, server DRAM revenue increased by as much as 94% quarterly, so the proportion increased significantly this quarter, from 25.0% in the third quarter of 2023 to 32.0%. In addition to the mass production of the new generation of DDR5, the price is also more competitive and the market share is expanded significantly. The proportion of mobile DRAM also benefited from the increase in the proportion of LPDDR5(X) shipments and increased slightly, rising from 31.5% in the third quarter of 2024 to 33.0%. The proportion of other PC, consumer and graphics DRAMs was squeezed by the above mainstream products, and the proportion fell to 35%. Looking forward to the first quarter of 2024, the contract price will continue to rise, especially for mobile DRAM products. Therefore, although shipments may decline due to the off-season, profitability will continue to improve.

As for the proportion of SK Hynix's product revenue, the proportion of server DRAM revenue continues to rise, mainly due to the increase in the proportion of DDR5 product shipments from 40.0% in the third quarter of 2023 to 42.8%. Both shipments and prices of mobile DRAM turn upward, and the revenue growth rate is roughly the same as the company's DRAM revenue, so the proportion has not changed much, only rising from 21.1% in the third quarter of 2023 to 21.4%. The proportion of other PC, consumer and graphics DRAM dropped from 39% to 36%. Looking forward to the first quarter of 2024, SK hynix stated that its goal is to improve profitability, so it will continue to increase contract prices and give priority to shipping high-profit products, so shipments will be adjusted downwards.

As for the proportion of Micron's product revenue, the growth of server DRAM revenue mainly comes from the increase in bit shipments, so the proportion has increased from 18.2% in the third quarter of 2023 to 23.3%. As for mobile DRAM, its share increased from 34.0% to 36.7% in the third quarter of 2023. Although shipments have declined, driven by rising contract prices, the share has still increased. The revenue share of PC, consumer and graphics DRAM dropped from 48% in the third quarter of 2023 to 40%. Looking forward to the first quarter of 2024, the contract price will continue to rise this quarter, so the operating profit rate is expected to return to the break-even point.

As for the proportion of the product revenue, PSC's logic product revenue share fell slightly from 62.0% to 61.6% in the fourth quarter of 2023, while the DRAM business (including foundry) revenue share increased significantly, from 32.0% to 33.4%, mainly due to the better-than-expected sales performance of its own products, and the proportion of NAND Flash dropped from 6% to 5%. Looking forward to 1Q24, it will be difficult to increase shipments during the off-season. In addition, the increase in consumer DRAM contract prices will be relatively small, and revenue performance will be roughly flat.

In terms of Nanya's product revenue ratio, consumer DRAM is still Nanya Tech's main product, accounting for roughly 60-65%. PC DRAM is about 15-20%, while mobile DRAM is around 10%. Server DRAM Due to the injection of orders from American CSPs, the proportion increased slightly to 5-10%. Looking forward to the first quarter of 2024, the company has begun to increase contract prices and hopes to turn losses into profits after the middle of the year. However, the losses are still large at this stage, and with the recovery in demand relatively moderate, it may be difficult to make significant increases of the contract price quarter by quarter.

As for the proportion of Winbond's product revenue, DRAM has increased from 35% to 41%. Because all the new production capacity of the KH plant is DRAM products and the momentum of customer demand for goods has rebounded, the proportion continues to rise. The price of Flash products continues to decline, and revenue growth is smaller than that of DRAM products, so the proportion dropped to 59% from 65% in the previous quarter. Looking forward to the first quarter of 2024, as the company continues to make profits on prices, all low-price orders must be shipped before the end of the quarter. As customers are worried about rising prices, it increases its purchasing share and the shipments are expected to continue to grow.

(2) Current status of the flash memory market

A. Market size

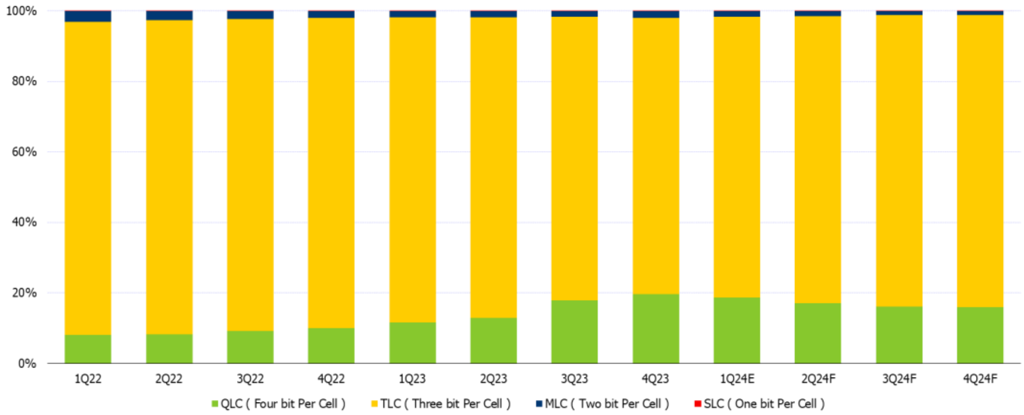
Affected by factors such as lower-than-expected demand for smartphones, personal computers, and servers and excess inventory, memory chip revenue had the largest decline in 2023 and reached to 37%, of which NAND Flash (flash memory) fell by 37.5% to $36.2 billion. As the NAND price has bottomed out, the global NAND market is expected to have a strong recovery in 2024 with an annual growth rate of 49.6%, reaching a scale of USD 53 billion. Among them, the server market has been intensified by the downward adjustment of capital expenditures. The AI server demand has also affected the resource allocation of computing service providers, compressing the budget allocation of traditional servers and suppressing the purchase momentum of enterprise SSD. By the fourth quarter of 2023, traditional servers Production demand has recovered slightly, and a price increase cycle of the contract price has begun. The CSPs and server OEMs in North American and Chinese have also increased their order demands and driven the purchasing momentum. As for consumer electronics, NB shipments will be relatively stable in e-sports demand from the fourth quarter of 2023. Inventory replenishment of low-end models will continue and related promotions will start ahead of schedule. PC OEMs will be more willing to strategically purchase PC Client SSDs. However, notebook (NB) shipments will Goods began to decline after the peak season. Only high-end e-sports models saw strong orders, and NB experienced a quarter-to-quarter decrease of 9.7%, driving demand for bits to decrease by 8.7% quarter-to-quarter. In the smartphone market, the iPhone will enter the peak season for new product stocking in the second half of 2023, and Android brands will begin to increase demand as they prepare to launch new products in the second half of the year. Chinese brands are replenishing their inventories, and some high-end flagship sales in China are booming. Chinese brands have begun to increase their sales. The demand for stocking capacity has driven the demand for NAND Flash bits in this application to increase by 18.5% quarterly.

From the supply side, more original manufacturers will follow up on production cuts in 2023. Micron will expand production cuts, SK Hynix and Kioxia will also reduce production line utilization rates. In the second half of 2023, Samsung will announce an expansion of production cuts; other companies will activate production lines. The rate has also been slightly lowered. As of the fourth quarter of 2023, NAND Flash wafer production volume (12-inch equivalent) has continued to decline, with a quarter-to-quarter decrease of 8.7%.

From the perspective of bit output, the full-year growth rate for 2023 was adjusted downward to a negative 2.8%. In this wave of production cuts, TLC is the focus of production reduction, with TLC's proportion reduced to 79%, causing MLC's proportion to rise slightly to 2%, and QLC's corresponding increase to 19%. As for the number of layers, the output share of 1YY layers increased to 43% in the fourth quarter of 2023, and that of 2XX layers increased to 9.7%.

Looking forward to the first quarter of 2024, although original manufacturers have slightly increased production capacity, the overall capacity is still limited, and buyers continue to increase inventory levels; overall, consumer electronics such as NB and smartphone brands are still more positive in stocking up, especially performance client SSD and UFS 4.0 Products with advanced manufacturing processes have become even more scarce. In order to get rid of losses and pursue profits, original manufacturers have pushed up the price of high-end products by nearly 30%. As the order momentum continues to grow, the inventory level of the original manufacturers gradually returns to normal, and the price increase of all products are greater than those in the previous quarter.

As for the product structure, the SLC applications focus on servers and industrial embedded SSDs that emphasize stable quality, as well as MCP high-performance applications for smart mobile devices, Netcom products, TV boxes, smart speakers, and car-borne applications. The market demand is relatively stable, and Kioxia, Micron, and Taiwanese manufacturer Macronix continue to maintain SLC supply. The proportion of global SLC in NAND Flash bit output has increased significantly due to 3D output, up to about 0.05%, and MLC accounts for about 1.4%. After the proportion of TLC increases together with the proportion of 3D NAND Flash output, it is expected to account for about 82% in 2024. In addition, QLC is applied to the high-capacity data centers and some high-capacity, low-cost consumer SSD products. It is expected that the proportion may be close to 16.8% by the end of 2024. (See Fig. 7)



Source: TrendForce Corp., February 2024

Fig. 7 Global NAND Flash production analysis by product structure

According to the operating revenue of NAND Flash manufacturers in 4Q 2023: (See Fig. 8)

The demand for Samsung's three major terminal applications (server, NB and smartphone) has grown significantly. Even if the company has not fully met the needs of customer orders, the number of bits shipped in the fourth quarter of 2023 increased by 35% compared with the previous quarter, the average selling price rose by nearly 12%, and the revenue grew by more than 40%. Its NAND Flash revenue in the fourth quarter was USD 4.2 billion, and its market share remained in the leading position with an increase up to 36.6%. As inventories still need to be cleared, capacity utilization has not rebounded significantly in the first half of 2024. The annual growth rate of output in 2024 is about 0-5%. As for process technology, Samsung's South Korea factory and China's Xi'an factory are both planning to upgrade to 236 layers. The South Korean factory will begin to increase output in the first half of 2024, while the output of the Xi'an factory in China will start gradually only from the second half of 2024. As for the scale of production, it is expected that in the fourth quarter of 2024, the total production capacities of the P1L, P2L, and P3L factories in South Korea will be 270K/month. The total production capacity of the Xi'an plant in China is expected to return to 200K/month by then, and Samsung's total monthly production capacity will grow from 330K in the fourth quarter of 2023 to 580K in the fourth quarter of 2024. Looking forward to the first quarter of 2024, Samsung estimates that the NAND Flash bit shipments in the total market ill increase by 5% quarter-on-quarter. As for the product end, Samsung will give priority to selling UFS 4.0 and promoting PCIe 5.0 enterprise SSD, hoping to improve profits by increasing the shipment of high-end products. In recent years, upgrades of competitors' technology process have slowed down, but the company still prefers to maintain capital expenditure and R&D investment, hoping to maintain its advantage in technology.

Kioxia has been boosted by PC and smartphone customers' orders for replenishment of inventories. With the slight growth in bit shipments, Kioxia's revenue in the fourth quarter of 2023 was USD 1.44 billion, ranking fourth in market share. As for product progress, the company has positioned BiCS6 (162-layer) as a transitional process, which will not be introduced for all products and will only be used in client SSD products. On February 6, 2024, Japan's Ministry of Economy, Trade and Industry (METI) stated that it would fund JYP 243 billion to assist Kioxia Holdings Japan (Kioxia) and the US company Witten Electronics (WD) in mass production of cutting-edge memory chips, which will be used for production of data center chips, mainly due to the gradual increase in downloads of generative articial intelligence (AI) applications (APPs). The demand for data centers will continue to grow. After receiving subsidies from the Japanese government, Kioxia will focus its resources on mass production of BICS8 (236 layers) in the second half of 2024, and hopes to make a substantial transition to this process in 2025. The main supply focus in 2024 will still be BiCS5 (112 layers). In terms of product progress, as the penetration rate of mobile phone separation solutions increases, Kioxia is more focused on providing a comprehensive series of UFS products. In addition to UFS 4.0 specifications, QLC UFS 3.1 will also begin to promote. As for enterprise SSD product design, two enterprise SSD 5.0 products will be mass-produced in 2024. Kioxia will hope to increase market share through the above product strategy.

While gradually improving its financial performance in the second half of 2023, WDC announced a spin-off plan to be completed in the second half of 2024. Although the fate of the NAND Flash business unit is currently undecided, it would be likely be relisted on the stock market, and the possibility of merging with Kioxia cannot even be ruled out. In order to increase the profitability of the NAND Flash business unit, WDC will launch 162-layer PC client SSD products next year to strive to grow through channels and PC OEM SSD market shipments. In the fourth quarter of 2023, WDC average selling prices increased by 10% quarter-on-quarter, but bit shipments decreased by 2% quarter-on-quarter. NAND Flash department revenue was USD 1.665 billion, an increase of 7.0% from the previous quarter. The main reason is that in the fourth quarter of 2023, SSD in the retail market had a substantial increase in shipments due to the price rebound. The inventory level fell to a record low in the past four years. In order to meet the needs of customer, capacity utilization began to increase in the first quarter of 2024. Looking forward to the first quarter of 2024, WDC's bit shipments and average unit price will continue to grow; WDC will dynamically adjust production capacity based on recovery of demands. It is estimated that the capacity utilization rate in the first quarter of 2024 will increase compared with the previous quarter, and the cost structure of NAND Flash can still be optimized to achieve the goal of 15%.

Micron faced the most severe market situation of oversupply in 2023. Although prices have risen by nearly 10% in the fourth quarter of 2023, Micron has significantly reduced production and supply in order to improve profitability. As a result, the number of bits shipped has dropped by more than 10% and the revenue fell slightly by 1.1% to USD 1.14 billion. Looking forward to 2024, Micron believes that the demand for NAND Flash bits will increase by about 15-20% annually. Only by controlling the supply of bits to match with the annual increase in demand can the industry have a chance to make profit. Although capital expenditures are still down compared with last year, the 232-layer production capacity starts upgrade.

The product will begin to ramp up this year; since the company's QLC client SSD performance meets PC customer standards, the proportion of QLC in product shipments it will be increased gradually. Micron expects a steady increase of the bit shipments in 2024, leading to continuous improvement in profit. In terms of process technology, the supply focus will be gradually upgraded to 232-layer in 2024. The 232-layer TLC client SSD has been provided to customers for verification in the fourth quarter of 2023. At the same time, the process QLC client SSD is also planned to be mass-produced in the second quarter of 2024. The 232-layer The data center SSD has also been released and passed customer verification and will be used to support AI applications.

SK Group (SK Hynix & Solidigm) benefited from a sharp rebound in prices and its revenue in the fourth quarter of 2023 reached USD 2.48 billion, a quarterly increase of 33.1%; its market share only increased slightly by 1.4 percentage points to keep the second position. In terms of bit shipments, SK Hynix focused on improving profits and tended to ship products with higher growth rates. Therefore, bit shipments fell by single digits in the quarter. Looking forward to the first quarter of 2024, SK Group estimates that as prices continue to rise, bit shipments will increase by 6-8% quarter-on-quarter. The group continues to maintain its production reduction strategy. As order momentum recovers, inventory levels are expected to drop to normal in the second quarter of 2024. As for the production strategy in the second half of 2024, the group said it will adjust it based on actual demand. As for process technology, due to the significant reduction in capital expenditure, SK Hynix keeps the mainstream process at 176 layers and Solidigm is not able to increase its 192-layer production capacity; it will optimize costs and reduce capital to grasp the opportunity of achieving profitability in 2024.

Unit: Millions of US$

Company	**Revenue**		**Market Share (%)**	
	4Q23	**QoQ (%)**	**4Q23**	**3Q23**
Samsung	4,200.0	44.8%	36.6%	31.4%
SK Group (SK hynix + Solidigm)	2,480.4	33.1%	21.6%	20.2%
WDC	1,665.0	7.0%	14.5%	16.9%
Kioxia	1,443.0	8.0%	12.6%	14.5%
Micron	1,137.5	-1.1%	9.9%	12.5%
Others	559.8	32.3%	4.9%	4.6%
Total	11,485.8	24.5%	100.0%	100.0%

Note 1: 3Q23 average exchange rate: USD/JPY exchange rate: 1:144.5; USD/KRW exchange rate: 1:1,313.2

Note 2: 4Q23 average exchange rate: USD/JPY exchange rate: 1:147.8; USD/KRW exchange rate: 1:1,321.8

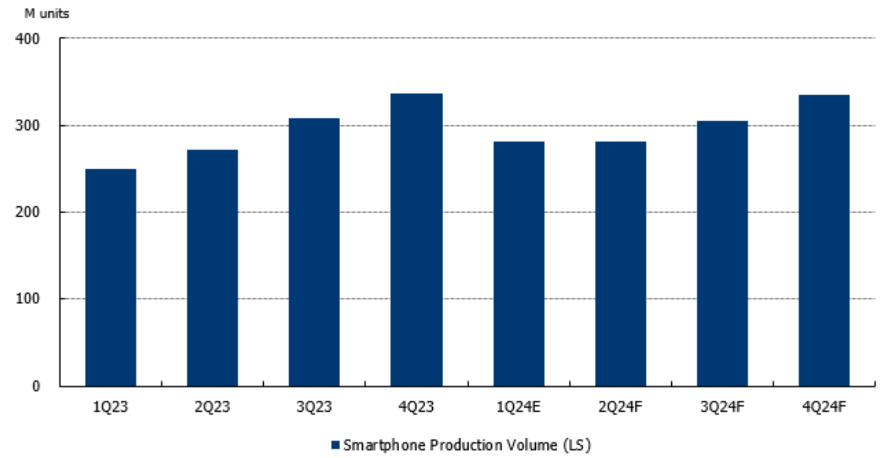
Source: TrendForce Corp., March 2024

Fig. 8 Q4 2023 global AND Flash brand manufacturers ranking by operating revenue

B. 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.

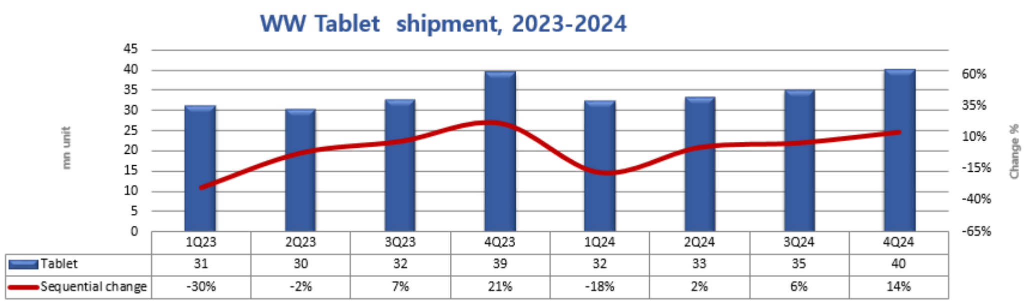
Smart phones: Smartphone production performance in 2023 fell into global economic weakness after being hit hard by the epidemic. This, in turn, affected the sales performance of consumer products. In the first half of the year, smartphone brands gave priority to digesting channel inventory, and most of them planned production targets conservatively. Therefore, the total production in the first and second quarters were the lowest in the quarter in the past ten years. In the second half of the year, the brand has resumed its production rhythm as channel inventory fell. Driven by the rollout of new machines, the annual growth rate of total production in the third quarter has begun to turn positive to terminate eight consecutive quarters of recession. Entering the fourth quarter, the brand carried out a year-end sprint to consolidate its market performance, driving the total production in the quarter to increase by 12.1% from the same period in 2022 to 337 million units. However, the total annual production fell to 1.166 billion units, a further 2.1% decline from 2022. Global mobile phone shipments are estimated to be 1.202 billion units in 2024, with a growth rate of 0.5%. (See Fig. 9)



Source: TrendForce Corp., February 2024

Fig. 9 2023–2024F global smartphone shipment volume

Tablet computers: According to IDC statistics, global tablet shipments were 128.5 million units in 2023, a year-on-year decrease of 20.5% to the lowest record since 2011. As for brands, IDC data shows that Apple remained the dominant player in the tablet market. Although its shipments fell by 19.8%, it captured 37.8% of the market share. Followed by Samsung (20.4%), Lenovo (7.2%), Huawei (6.8%) and Amazon (4.2%). The shipments of these four brands also shrank, with Amazon falling the most by 65.9%. Therefore, In the fourth quarter, Xiaomi was squeezed out of the top five, and the market share of the top five brands reached 80%. It is worth noting that Huawei performed best among all brands, with shipments only falling slightly by 4%. According to inSpectrum, a research and survey agency, the global tablet shipments in 2024 will increase slightly by about 3% compared with 2023 shipments, reaching 140 million units. (See Fig. 10)



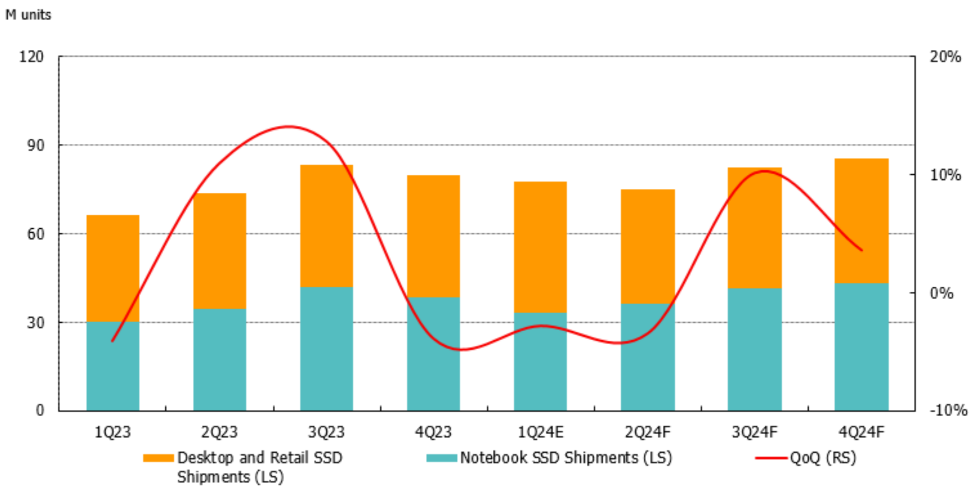
Source: inSpectrum, February 2024

Fig. 10 Global shipment volume and market share of tablets

Solid State Drives (SSD): In 2023, NB's ODMs production volume (excluding Chromebooks) will be 166 million units, a year-on-year decrease of 11.6%. In 2024, NB production volume (excluding Chromebooks) has the opportunity to grow slightly by 3.7% to 173 million units. Starting from 2024, as Microsoft stops supporting Windows 10, and the commercial NB replacement wave is likely to start, the above situations will help the growth of NB shipments.

As for product interfaces, the PCIe 4.0 interface has begun to increase in 2022 and has jumped into the mainstream in 2023. With the increasing demands for high-speed transmission among consumers, PC manufacturers continue to introduce PCIe 4.0 in new product development projects. This and the improvement of the PCIe 4.0 SSD product performance, accelerated this interface to become a mainstream configuration. The penetration rate of PCIe 4.0 is estimated to be close to 90% in 2024. As for the PCIe 5.0 interface, many original manufacturers will begin mass production of high-end PCIe 5.0 SSDs in 2024 and launch affordable PCIe 5.0 products by 2025. However, due to cost considerations, PC customers have not actively verified the interface. Therefore, currently only high-end models use PCIe 5.0, and the penetration rate of PCIe 5.0 interface products is estimated to be only 10% in 2026.

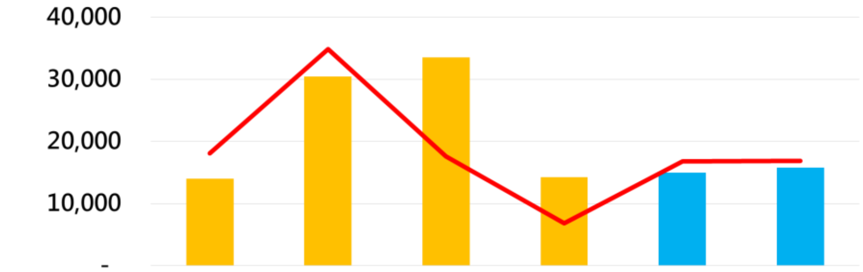
As the observation of the product progress shows, most of the manufacturers slowed down capital expenditure in 2023 and the transition to 2XX-layer SSD products slowed down as well. Micron estimates that it will not launch 232-layer QLC PC client SSD products and 232-layer TLC until the second half of 2024. PC client SSD will be available for customer verification in the first half of 2024; Samsung will launch 236-layer SSD products before the end of 2024. It currently has begun to provide 176-layer QLC client SSD for customer's verification. Solidigm will integrate with the SK hynix client SSD product line and will not launch subsequent 144-layer QLC PC client SSD products in the future. The performance of Solidigm's QLC PC client SSD will not meet the NB customer performance specifications, and Solidigm QLC SSD shipments will begin to decline. SK hynix will still supply 176-layer TLC PC client SSD as its main product in 2024. As for Kioxia and WDC, the two companies have slightly different plans for 162-layer client SSD. WDC will launch 162-layer QLC products in the first half of 2024, while Kioxia may only launch 162-layer TLC products. YMTC will also launch the second generation 128-layer (X4) TLC client SSD in 2024, and QLC products will not be launched until 2025. As the mass production of QLC products from various suppliers slows down, the long-term penetration rate of QLC has been slightly revised down. It is estimated that by 2026, QLC SSD shipments will account for approximately 45%. (See Fig. 11)



Source: TrendForce Corp., February 2024

Fig. 11 2023–2024F global Client SSD shipment volume

Chromebook and tablet-like NB Chromebook: In the first quarter of 2023, HP received large-scale North American education bids. In addition, the education bids in Eastern Europe and Southeast Asia in the second quarter were significantly better than the same period in 2022, allowing Chromebook shipments to resume growth in the first half of 2023. However, in the second half of 2023, Chromebook shipments declined rapidly due to North American education subsidies being exhausted and Google starting to collect licensing fees. However, they were still expected to maintain an annual growth of 4%. The research agency IDC predicts that it slightly decreased to below 19.5 million units, but was still higher than the annual levels before the epidemic. The education market will enter a replacement cycle in 2024. In addition, the Japanese education project is expected to bring benefits to Chromebook. It is expected to rebound with double-digit annual growth and become a product with relatively strong momentum when the overall PC returns to the right track of growth. (See Fig. 12)

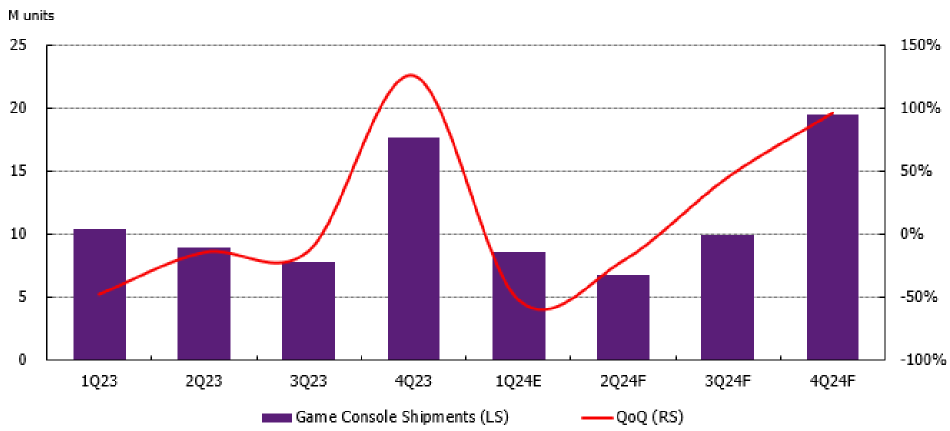


	2019	2020	2021	2022	2023(f)	2024(f)
Shipments	13,974	30,433	33,525	14,241	14,968	15,790
YoY	13.2%	117.8%	10.2%	-57.5%	5.1%	5.5%

Source:DIGITIMES research, September 2023

Fig. 12 2019–2024F Chromebook shipment volume

Game console: Global game console, Sony has replaced Nintendo (Nintendo) with a market share of 54% and an annual growth rate of 42%, becoming the leader of the global game console market. As for 2024, Sony PS5 will enter the second half of its product life cycle. The sales are expected to increase gradually. Nintendo's (excluding Switch Lite) 3Q23 shipments decreased by 15% year-on-year, falling to a second place with a market share of 27%. In addition, Microsoft Xbox Series X/S shipments fell 6% in the third quarter to approximately 1.8 million units, while the Xbox Series S had its 1TB version. 2024 is expected to be a year of fierce competition for game consoles. Market research agencies such as Omdia and Niko Partners predict that Nintendo will release a new Switch game console with a larger size and more advanced hardware specifications this year. At the same time, PS5 is expected to have its more powerful PS5 Pro version. Last year, a slim PS5 version was launched with unchanged performance but a more compact size. (See Fig. 13)



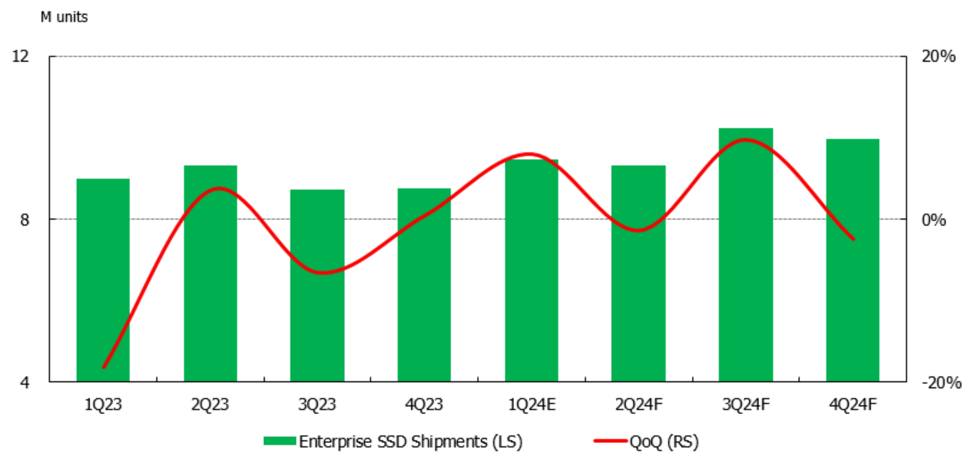
Source: TrendForce Corp., February 2024

Fig. 13 2023-2024F global game console shipment volume

Enterprise SSD (i.e. the SSD for servers): As for the demand, as Chinese telecom operators have confirmed to open the tender in the first quarter of 2024, the inventories of some Chinese CSPs have gradually returning to a normal level, low-price inventories have has been established, and the supply of enterprise SSD has been expected to be tight in the future, buyers have increased their stocking momentum. As for server manufacturers, the outlook for purchase orders in 2024 is better than that in 2023, and the demand in the fourth quarter of 2023 will increase compared with the previous quarter. It is estimated that enterprise SSD purchasing capacity in the fourth quarter of 2023 will increase by 10% compared with the third quarter of 2023. As for the supply, as suppliers strive to reduce inventories, the finished product inventories are not adequate to meet the this sharply increasing demand. Enterprise SSD shipments are so tight to push up the price. Suppliers dominate the price trend and the final contract price is pushed up by more than 10% as a result.

As for the product interface, although Genoa and Sapphire Rapids have begun to support PCIe 5.0 transmission in 2023, the deployment rate in 2023 was only 0.3% because the number of suppliers of this interface is limited and the price of products with the same capacity was still higher than PCIe 4.0. It is expected that the penetration rate of PCIe 5.0 in 2024 will have the opportunity to grow by nearly 15% with the help of more suppliers launching higher-level PCIe 5.0 SSD products and AI servers giving priority to PCIe 5.0 SSD. On the other hand, due to the dwindling number of PCIe 3.0 suppliers, PCIe 4.0 will gradually replace 3.0 in the shipment. Genoa and Sapphire Rapids are delayed in ramping up production, so PCIe 4.0 will still be the mainstream interface in the market in 2024. In addition, suppliers will continue to supply SATA products until 2025, and the shipment proportion of this type of products will gradually decline in the next few years. As for the SAS interface, as the price/performance ratio of PCIe SSD is better than that of SAS interface, the growth of shipments of this interface will be limited in the future. It is expected that the decline rate of SAS interface will be higher than that of SATA SSD.

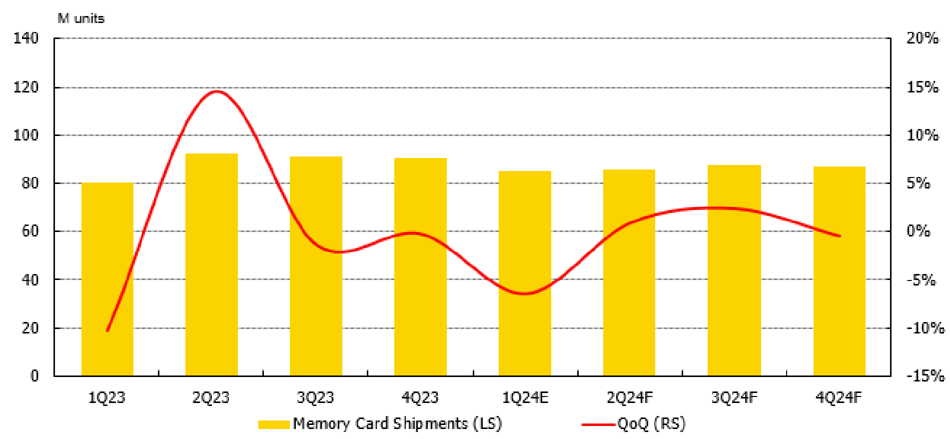
Due to the sharp decline in SSD price in 2023, the price difference between TLC and QLC in enterprise SSD was not obvious. The penetration rate of QLC products in 2023 was slower than in previous years. However, various server brands take QLC SSD as an option. It is to be observed how high the ordering momentum of the QLC SSD customers is in this category in 2024. Solidigm released the 192-layer QLC enterprise SSD product in 2Q23. Since there is no 192-layer follow-up product development plan, and the verification and promotion of 192 QLC SSD is not as expected, Solidigm’s future QLC SSD growth momentum is obviously suppressed. Because the company is a major QLC SSD supplier. the penetration rate of QLC in the future will surely be impacted by the discontinuation of process conversion. Therefore, the QLC penetration rate is estimated to be adjusted downward to 15% by 2026. As for PLC, the supplier currently has no clear development planing schedule, so the penetration rate of PLC products is temporarily reduced to 0%. (See Fig. 14)



Source: TrendForce Corp., February 2024

Fig. 14 2023-2024F global Enterprise SSD shipment volume

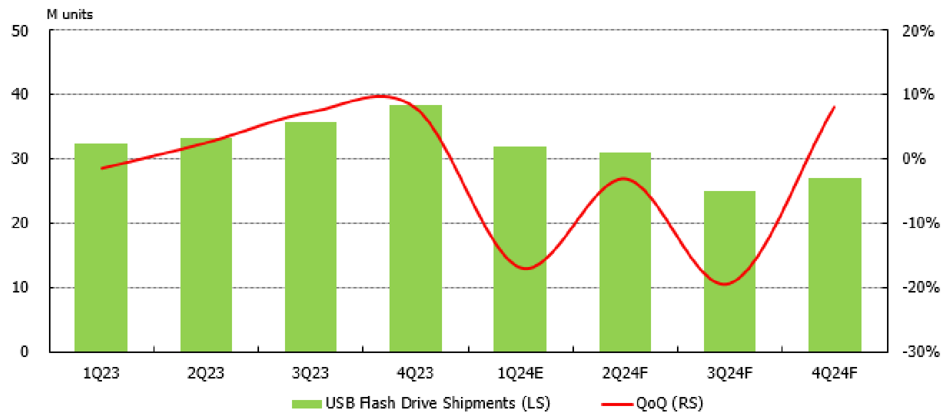
Memory cards: With the advancement of smartphone design language and rapid expansion of capacity, the related memory card market is more inclined to niche user groups such as photography equipment, and shipments cannot escape the trend of steady decline. However, in terms of specifications, as the demand for large-capacity and high-speed memory cards with ultra-high image quality is still increasing, the trend of capacity upgrades will be valued in the future. In the third quarter of 2023, memory card shipments were increase by 11.1% quarter-on-quarter. As smartphone shipments increase, the mainstream capacity will remain 128GB; however, it is expected that the proportion of high-capacity shipments above 256GB will increase significantly in the future, and the average capacity of memory cards will increase in 2024. will grow by 24.0%. (See Fig. 15)



Source: TrendForce Corp., February 2024

Fig. 15 2023–2024F global memory cards shipment volume

Flash drives: USB flash drive shipments in the third quarter of 2023 were increased due to the low-base period effect and peak-season stocking. At the same time, wafers have taken the lead to push up prices, which has given rise to expectations of mid-stream and downstream industry players. Module factories are actively stocking up for production, which has driven an increase in shipments. Looking forward to the future, as cloud operators improve their construction and services, the USB market size will not be easy to expand. However, like the development path of various terminal products, the focus will be on increasing capacity growth. In terms of transmission interface specifications, USB 2.0 maintained about 50% proportion in the third quarter of 2023. This will gradually upgrade to USB 3.2. The demand for USB 4.0 flash drives has yet to be developed. It is currently limited by heat dissipation requirements, which poses challenges to manufacturers' design capabilities, and there is no visibility of short-term penetration rates. It is estimated that the shipment of flash drive products will have a slight annual increase in 2024, with USB 3.2 and above specifications accounting for approximately 57.2% and small-capacity products accounting for approximately 32.7%. (See Fig. 16)

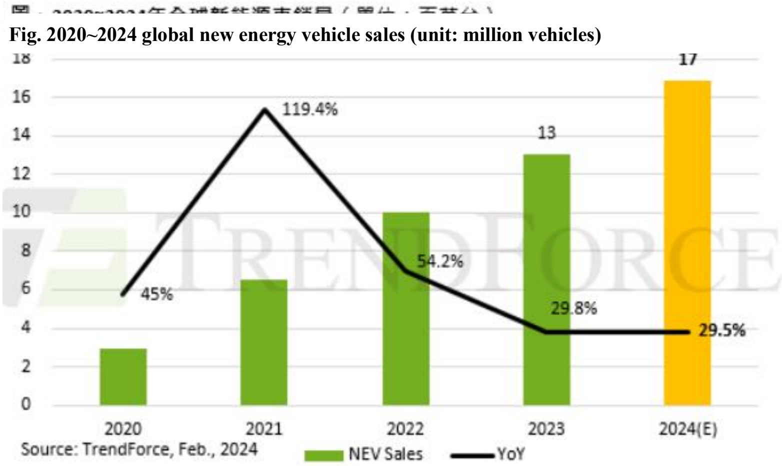


Source: TrendForce Corp., February 2024

Fig. 16 2023–2024F global flash drive shipment volume

Automotive market: The global economy was in a downturn in 2023. However, the automotive market is thriving, especially the booming development of electric vehicles, which has become one of the main drivers of the continued growth of the semiconductor industry in recent years, and the boom in the automotive market is expected to continue into 2024. Both market research units and automotive semiconductor-related suppliers believe that the automotive industry will still be the main source of revenue for the semiconductor market in 2024. According to IDC's trend forecast for the global semiconductor market in 2024, with the explosion of global AI and HPC demand, coupled with the stabilization of market demand for smartphones (Smartphones), personal computers (Notebooks & PCs), servers, automobiles, etc. , the semiconductor industry is expected to usher in a new wave of growth, and the annual growth rate of the semiconductor sales market is expected to reach 20% in 2024. Among them, in terms of automobiles, IDC believes that advanced driver assistance systems (ADAS) and vehicle infotainment systems (Infotainment) will continue to drive the development of the automotive semiconductor market. Although the growth of the vehicle market is limited, the trend of vehicle intelligence and electrification is clear and will become an important driving force for the future semiconductor market. ADAS accounts for the highest proportion of automotive semiconductors. It is expected that the ADAS compound annual growth rate (CAGR) until 2027 will reach 19.8% , accounting for 30% of the automotive semiconductor market in 2027; Infotainment ranks second among automotive semiconductors. This is because Infotainment is expected to have a compound annual growth rate of 14.6% in 2027, accounting for 20%, under the driving force of the automobile intelligence and networking. Overall, more and more automotive electronics will rely on chips, and the demand for semiconductors will be long-term and stable.

According to TrendForce statistics, a total of 13.03 million new energy vehicles (NEVs; including pure electric vehicles, plug-in hybrid electric vehicles, and hydrogen fuel cell vehicles) were sold globally in 2023 with an annual growth rate of 29.8%, a significant decline from 54.2% in 2022, among which 9.11 million units of pure electric vehicles (BEV) were sold with an annual growth rate of 24%; 3.91 million units of plug-in hybrid electric vehicles (PHEV) were sold with an annual growth rate of 45%. TrendForce further stated that China is the largest sales place for new energy vehicles, accounting for about 60% of the global new energy vehicle market. However, the growth has slowed down due to the high-base period, and sales growth in other regions has been so limited to making up the gap in the Chinese market. This will lead to a slowdown in the annual sales growth rate of new energy vehicles. It is estimated that the sales volume of new energy vehicles in 2024 will be 16.87 million units, with an annual growth rate of 29.5%. (See Fig. 17 and Fig. 18)



Source: TrendForce February 2024

Fig. 17 2020-2024 Global new energy vehicle sales

Rank	BEV	Market Share	PHEV	Market Share
1	Tesla	19.9%	BYD	33.8%
2	BYD	17.1%	Li Auto	9.6%
3	GAC Aion	5.2%	BMW	4.3%
4	SGMW	4.9%	Mercedes-Benz	3.9%
5	Volkswagen	4.6%	Volvo Cars	3.9%
6	BMW	3.6%	Jeep	3.1%
7	Hyundai	2.9%	Changan	2.9%
8	Mercedes-Benz	2.6%	Denza	2.8%
9	MG	2.3%	Deepal	2.6%
10	KIA	2.0%	Toyota	2.6%

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

Source: TrendForce February 2024

Fig. 18 BEV & PHEV sales ranking and market share in 2023

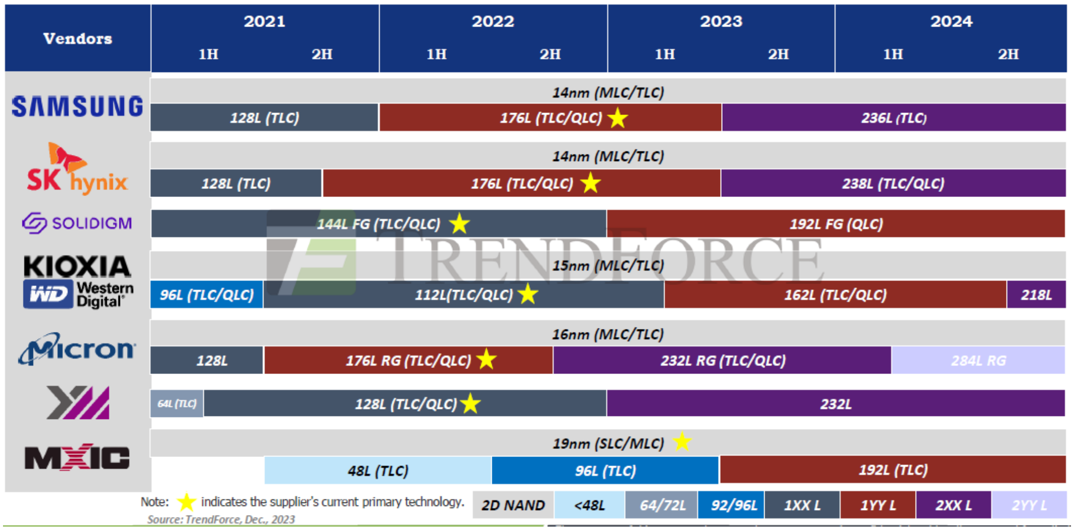
C. Main flash memory suppliers' status

(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 2023, the proportion of 1XX layer products was 40-45%, the proportion of 1YY layer products was also 40-45%, and proportion of the 2XX layer was less than 10%. Looking forward to 2024, Samsung and Micron will actively shift to the 2XX layer production capacity, while other suppliers will remain focusing on the 1XX and 1YY layers, and the proportion of 2XX will increase significantly. It is estimated that the supplier's 2XX layer output will account for 30-35% in 4Q24, and the 1YY layer and 1XX layer will both account for 30-35%.

(1) The process of Samsung's Xi'an factory was restricted by the U.S. semiconductor ban and was limited to the 128-layer range (V6P). In addition, the production using the 92-layer process was significantly reduced. In the fourth quarter of 2023, the 128-layer output accounted for 45-50%. %; the proportion of 176-layer products remained at 35-40% in the fourth quarter of 2023. After the mass production of 236-layer products in the second half of 2023, the production capacity continued to expand and the proportion of 236-layer output in the fourth quarter of 2023 was 10-15%.
(2) The production reduction and capital reduction plan of Kioxia/WD means that BiCS5 (112 layers) was still be the main output focus in 2023, with a proportion of 55-60% in the fourth quarter of 2023. BiCS6 output grew rapidly due to production cuts, with the output accounting for 35-40% in the fourth quarter of 2023.
(3) SK Hynix actively increased the proportion of high-layer products in order to achieve cost optimization and increase output. The capacity reduction in 2023 mainly focused on the output of 128-layer and lower-layer products. Under the influence of the above strategies, the proportion of the 128-layer output fell from 35-40% in 1Q23 to 20-25%, while the proportion of 176-layer output increased from 40-45% in the first quarter of 2023 to 65-70% in fourth quarter of the same year; products of 238 layers or above accounted for 5-10% in the fourth quarter of 2023.
(4) Micron started the mass production of 232-layer products in the second quarter of 2022, and the output ratio of this process was 25-30% in the fourth quarter of 2023, while the output ratio of 176-layers products was 65-70% in the same period. As for 96 layers, as Micron made more production cuts, the output proportion of this process remained less than 5% in the fourth quarter of 2023.
(5) Solidigm phased out its 96- and 64-layer products in 2023. Therefore, the output ratio of 144-layer products had the opportunity to increase to 90% in 2023. As the focus of output gradually shifted to QLC, the proportion of QLC output grew to 60-65% in 2023.
(6) At YMTC, the 128-layer products have become the main output focus. Although YMTC produced 232-layer products in the second quarter of 2022, affected by the U.S. ban, the services from American equipment manufacturers for products with 128 layers and above was not available, and product yield improvement was not achieved. However, 128-layer was still be their main process in 2023. This process accounted for 60-65% of products in the fourth quarter of 2023, while 232-layer output accounted for 15-20%.

(Refer to Fig. 19 for manufacturer's 2D/3D product techniques).



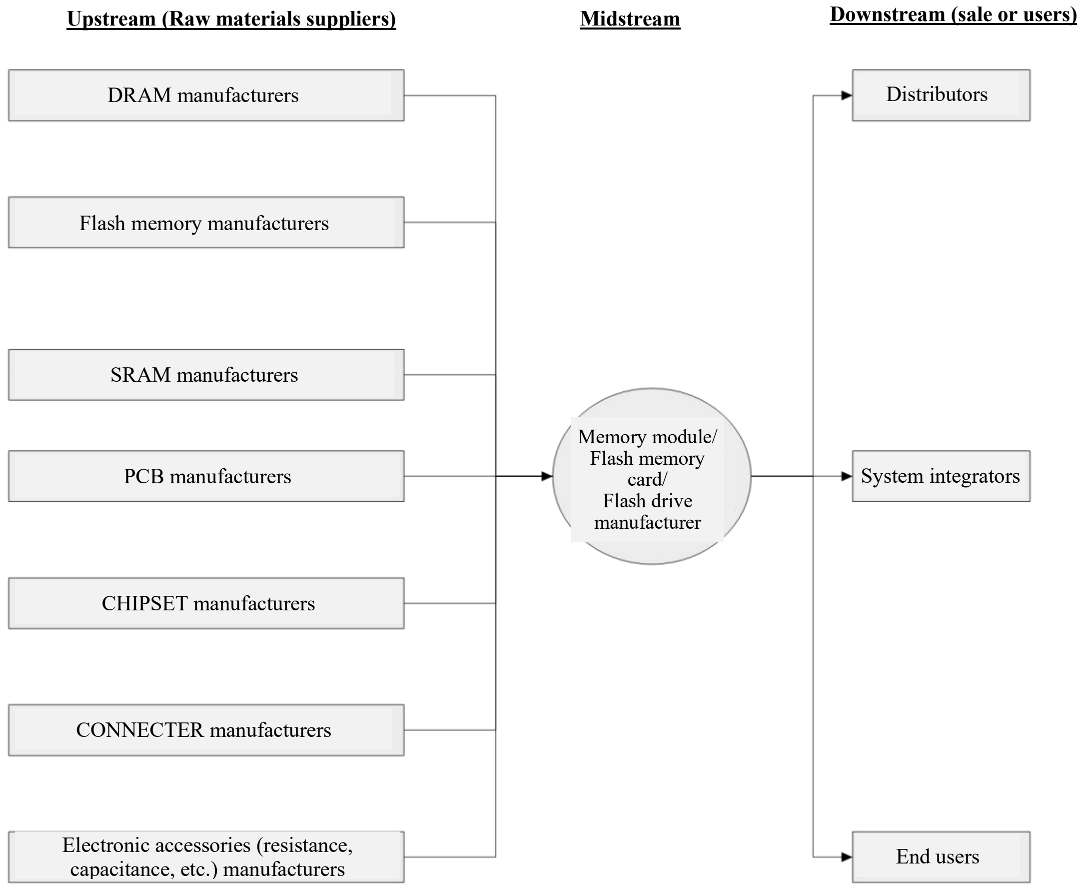
Source: TrendForce Corp., February 2023

Fig. 19 NAND Flash manufacturers' 2D/3D products techniques

(B) Industry supply and demand development

After Samsung announced expanded production cuts in the third quarter of 2023, other manufacturers' production line utilization rates decreased slightly, causing global NAND Flash wafer volume (12-inch) to show a quarter-to-quarter decrease of -17.3% in the third quarter of 2023. From the perspective of bit output, the full-year growth rate in 2023 was adjusted down to -2.8%. The proportion of MLC dropped slightly in the third quarter of 2023. TLC was the focus of production reduction with its proportion reduced to about 80%, while QLC increased correspondingly. As for the number of layers, the output of the 1YY-layer products rose to 40% in the third quarter of 2023, and the 2XX-layer rose to 7.5%; in the fourth quarter of 2023. The original manufacturer's capacity reduction strategy will continue, coinciding with the traditional peak season, and the strategy of increasing inventory levels is a common buyer behavior of various terminal products; overall, the buyers of consumer electronics such as PC and smartphone brands have become more positive in their stocking attitudes, especially performance client SSD, UFS 4.0 and other products that are applied to more advanced products. As original manufacturers reduce Flash wafer supply, the contract price of wafer has increased significantly due to the substantial growth in stocking orders, resulting in a growth rate of more than 20% in the fourth quarter of 2023. The price of other products such as eMMC and UFS increased by 10%-15%. PC client SSD increased by 13-18% and enterprise SSD Up 10-15%.

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



3. The development trend of each product

(1) the development trend of memory modules

Memory modules are mainly used in PCs, servers and mobile devices. Due to the new techniques and process, the function of DRAM upgrades rapidly. Its development mainly follows the following trends:

A. High capacity:

With the enhancement of CPU functions, memory specifications were mainly DDR4. The DDR5 generation took off officially in 2022. However, due to the high price and the delay in the launch of related CPUs and platforms, the penetration rate was lower than expected. In 2023, due to the slowdown in terminal demand and the reduction of inventories in the supply chain, the DDR5 penetration rate was about 15-20% and not as high as expected. However, it is currently believed that the DDR5 penetration rate is expected to exceed 50% in 2024 under the driving force of new platforms and the AI PC replacement wave, and may successfully surpass DDR4 and become the mainstream specification. At the same time, the capacity of the mainstream DDR4 will gradually shift from 8Gbit to 16Gbit. The capacity of DDR4 RAM modules gradually transits from 8GB to 16GB because of the product specification upgrade and market demand for 32GB emerges. DDR5 UDIMM may even be upgraded to 128GB. The main specification of the memory used in servers has also gone from DDR4 32GB and 64GB to 128GB. More memory is used as a result of the increased penetration of 5G and AI smartphones. The DRAM capacity of many models has increased from 6GB to 8GB or even to 12GB and 24GB.

B. Low power consumption and low voltage:

Following the trend of light, thin, short and small system products, product development will be geared toward low power consumption and voltage; and with voltage and power consumption for operating system products decreasing, RAM module products are shifting from DDR3 1.5/1.35V to DDR4 1.2V, while DDR5 only need 1.1V.

C. Hight speed:

In coordination with the speed growth of CPU, the processing speed advance of DRAM has become very important. In response to the high performance requirements of AI servers, the demand for DDR5, the more powerful memory, has increased. Compared with DDR4, DDR5 has higher speed, larger capacity and lower energy consumption. The maximum transmission rate of DDR5 memory reaches 6.4Gbps, which is twice as high as DDR4. (See Fig. 20)

	DDR5	LPDDR5	DDR4	DDR3
Maximum density of a single chip	64 Gbit	32 Gbit	16 Gbit	4 Gbit
Maximum UDIMM capacity	128 GB	N/A	32 GB	8 GB
Maximum transmission rate (speed)	6.4 Gbps	6.4Gbps	3.2 Gbps	1.6 Gbps
Number of memory channels	2	1	1	1
Bit width (non-ECC)	64-bits (2x32)	16-bits	64-bits	64-bits
Number of Banks per group	4	16	4	8
Number of bank groups	8/4	4	4/2	1
Burst length	BL16	BL16	BL8	BL8
Voltage (Vdd)	1.1V	1.05V	1.2V	1.5V
Voltage (Vddq)	1.1V	0.5V	1.2V	1.5V

Source: JEDEC

Fig. 20 Comparison of DDR specifications

(2) the development trend of flash memory

A. The SSD capacity used by PC OEMs was constrained by Windows licensing fees. The deployment rate of PC client SSD 1TB capacity was difficult to grow significantly. This and the fact that the short-term SSD price rebounded too high resulted in that the 1TB deployment rate will not be easy to grow in the second half of 2024. Looking forward to the long-term capacity growth rate of PC SSD, if the penetration rate of AI PC increases, with the rise of demand for AI-related video and text storage, it will still help the deployment rate of large-capacity SSDs above 1TB to increase in the future, and we will continue to pay attention to the effect of the AI services on the storage capacity. As HDD will begin to withdraw from the NB market in 2025, the SSD deployment rate will be nearly 100% by the end of 2024.

B. The epidemic has caused a significant increase in demand for cloud services. The total bit demand for Enterprise SSD has also increased significantly as server shipments and average capacity have increased. Therefore, the proportion of Enterprise SSD in NAND Flash has continued to increase. Looking forward to the average storage capacity in 2024, the current mainstream capacity in China has already been upgraded to 8TB. Coupled with the gradual recovery of orders from American CSPs, the proportion of large-capacity SSDs has begun to pick up. In addition, orders from server brand customers have increased compared with the previous year. The average capacity growth rate for the whole year of 2024 is expected to be 13%. Looking forward to the long-term trend, due to the rise of generative AI and the emergence of video generation services such as OPEN AI SORA, a large amount of data will be generated in the future, driving up the demand for storage space in data centers. For example, TrendForce stated that the demand for large-capacity storage will increase significantly in the future, and the deployment rate of 16TB (or more) products may have the opportunity to reach 10% by 2026. Due to the improvement of PCIe 5.0 performance and the support of PCIe 5.0 transmission by Genoa and Sapphire Rapids, as the product verification of this interface is completed gradually, shipments will not be significantly increased until the second half of 2024. It is estimated that the shipment share of this interface in 2024 can be close to 10%. On the other hand, due to the price advantage of PCIe 4.0 and the diversification of suppliers, PCIe 4.0 will remain the mainstream interface in the market, accounting for more than 70% of the annual shipments in 2024. As for the SAS interface, server brands are gradually replacing SAS products with PCIe SSDs due to cost considerations. It is expected that the SAS interface will be limited to old models and server upgrades, and the decline rate of this model is expected to be higher than that of the SATA interface.

C. Edge AI will become the next driving force for a new wave of smartphone replacements. The launch of edge AI will bring new application scenarios to smartphones and personal computers, such as smarter voice assistants, sensor cameras, and professional-grade Photography, AI-based Stable Diffusion software, and desktop-level games on smartphones; in the past, smartphones were characterized by automation and feedback, but in the future smartphones will be capable of cognition and creation, which also shows that AI phones will be a LLM (Large Language Model) computing power competition and major mobile phone brand manufacturers will independently develop LLMs with integrated customized OS systems, trying to introduce AI large model capabilities into mobile phones, making terminal processing operations a new normal. In order to achieve computing requirements for various applications of AI mobile phones, the specifications of mobile phone chips will be improved significantly. The importance of GPU, NPU/APU will increase and the main chip specifications and memory bandwidth and capacity will be upgraded simultaneously. Whether the memory capacity of AI mobile phones in the future will be upgraded from the current mainstream average 8~16GB is worth observing. Looking forward to 2024, although there will no longer be pressure on channel inventories compared with 2023, people’s conservative consumption habits of spending will affect the production performance in the year concerned as the world is shrouded in many uncertainties such as politics, economy, war, and weak demand in China, On the other hand, affected by the downgrade of consumption, market competition is expected to become more intense, especially reflected in the game of terminal pricing, brand profits and component costs.

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.

(III) 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: TWD 1,000

Year	2022	2023	As of March 31, 2013
R&D expenses	165,679	188,773	Note

Note: The 2024 Q1 financial data have not yet been completely reviewed by CPAs as of the publication date of the annual report.

2. R&D status of Apacer

Devoted to applications of memory and storage technologies, Apacer's memory module and SSD technologies and products cover applications in the consumer, commercial and industrial markets. We are accumulating storage technologies and capabilities and developing a deep understanding of the demand for memory storage applications, and we continue 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 knowledge of the firmware and structure of SSD storage, we can swiftly provide customized storage solutions to meet the application requirements of the customers and speed up the progress of their projects. Based on the development of core storage technologies, we improve product stability and reliability and help customers solve difficult storage issues, such as the firmware technology that the Company continues to develop this year for quick backup and 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 memory and SSD application integration and innovation. With these, we actively satisfy our costumers' applications and provide them with thorough solutions. We have developed and released automated optical inspection devices and services for industrial IoT (IIoT) systems, proactively established the IIoT and intelligent IoT platforms, and promoted these to relevant industrial application fields. R&D of new technologies is implemented toward the development of green products, including the application products related to electronic paper, to provide 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 191 approved patents for our products in Taiwan and other countries. 44 patent applications are currently pending.

3. R&D outcomes

Year	R&D outcomes
2023	1. We won the 2024 Taiwan Excellence Awards with our "Recyclable Design Module - Transformed SSD SV25T Series". This is a patented product developed by Apacer based on M.2 2242 SSD + rugged connector and the extended application of key technologies. This application has been developed in three major aspects: power failure protection mechanism technology (Core power), power plan management technology (SPM), and snapshot backup technology (CoreSnapshot). We continue to develop the **PCIe interface (PV25T) series** from the perspective of carbon reduction to meet the highly customized needs of the industrial market. 2. We won the 2024 Taiwan Excellence Awards with our "Special Solid State Drive - NVMe M2 Audiophile SSD for High-end Digital Audio Players". This is an innovative product specially designed for professional digital audio players. Users can flexibly power their existing equipment and all the possible issues in digital music such as noise, phase shift, high and low frequency noise, etc. can be eliminated. This enables the quality of digital music to be as close as possible to traditional analog or vinyl records, bringing the cleanest and purest sound enjoyment to all listeners. 3. The CoreSnapshot 2 firmware technology is used in combination with Apacer CoreRescue software (SV250-25, SV250-M242, SV250-M280). It is a unique design with global patents and provides automatic testing and autonomously implements two triggered recovery solutions of ASR (Auto Self Recovery) and USR (USB Self Recovery) to protect users' systems and data from any unexpected loss and realize the vision of intelligent unattended management. This technology is compatible with operating systems and devices that support SATA interface, and is an ultimate solution that can protect data and ensure reliability. 4. DataDefender Plus Series SSD (SV25V-25, PV25V-M242, PV25V-M280) meets the needs of the industrial control market and is designed with a miniature voltage detection IC to detect whether the power supply provided by the system is abnormal. Users can record and understand the current value through the Apacer SSDWidget , the frequency of power supply abnormality during the monitoring process, and can be proactively notified to analyze the cause of the abnormality. 5. The Enterprise PCIe SSD (PV19E-25M/ DWPD>1, PV19E-25W/ DWPD>3) has boot and data storage functions, and can arrange hard drive space according to the needs of the company to improve application performance. 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. 6. The SV250 series products add an Internal LOG function to the FW architecture to assist end customers in reporting issues immediately and troubleshooting quickly. Real-time online firmware update (Online Update) technology directly updates to the designated SRAM location for processing. If there is an urgent need to modify the SSD or add related applications with customized value-added functions, it can reduce the need for power interruption upon update and eliminate the issue in power cycle. 7. Sx250 series development: CoreSnapshot 2, CoreRescue ASR/USR, extension module S.P.M. / OOB, partition protection (customized), BiCS5 CorePower firmware development. 8. Sx240 series development: Enterprise Series, CorePower Series, CoreSnapshot 3 firmware development. 9. Px250 series development: Supporting KIOXIA/WD BiCS5, CorePower Series, Enterprise Series, high-capacity 4TB, OPAL, SLC-liteX, CoreSnapshot 2, Multi Namespace firmware development.

Year	R&D outcomes
	10. The first fully lead-free memory module in the world uses brand new fully lead-free resistive components. It has the original performance of the memory module and completely meets the RoHS environmental standards. 11. The AS2280F4 SSD is equipped with a new era PCIe Gen5 x4 interface, breaks the speed boundary, and has a continuous reading speed of 12,000 MB/s and an astonishing continuous write speed of 11,800 MB/s. It is also equipped with an aluminum alloy heat sink with a cooling fan and can effectively reduce the temperature by 25%. The ultimate reading and writing performance provides the best experience for game and video editing players. 12. The SV240 TCG SSD has passed FIPS 140-2 certification, pushing the security of SSD to a higher level. For applications in industries that plan to work with U.S. federal agencies or require higher security, such as healthcare, financial services, 5G infrastructure, and defense, the Apacer TCG SSD—SV240 FIPS 140-2 series provides the best solution to ensure the security of confidential information. 13. Apacer lead the industry in launching the first DDR5 VLP UDIMM industrial-grade memory module which combines the characteristics of small size, large capacity, low power consumption and high performance, and is suitable for space-constrained high-density servers and the application designs of network communication, telecommunications and embedded systems. 14. The professional PC32CF-R CFexpress Type B memory card uses high-endurance NAND Flash and high-speed PCIe Gen3x2 interface. It complies with the strict specifications of the CF Association and can withstand plugging and unplugging more than 12,000 times. The product has a continuous reading speed of up to 1,700 MB/s and a continuous write speed of 1,700 MB/s. The input speed can reach 1,600 MB/s, and the sustained writing speed remains at 1,500 MB/s. It can cope with the extremely high traffic conditions of 4K120P and 8.3K 60P RAW lossless compression recording, bringing better performance to image creation. 15. The industry-grade DDR5 positive wide-temperature memory module selects high-quality wide-temperature DDR5 DRAM IC specification and uses advanced 1a nm process technology to achieve excellent high performance, low power consumption and wide-temperature operating characteristics . The DDR5 positive wide temperature memory modules include UDIMM, SODIMM, ECC UDIMM and ECC SODIMM and other specifications. The products support transmission rates up to 4800MT/s and 5600MT/s. In addition, the industry's first fully lead-free version of the DDR5 wide-temperature memory module ensures compliance with future EU RoHS standards and fulfills corporate ESG commitments. 16. Intelligent iKeeP QuizSlide: iKeeP cooperates with LiveABC under authorization to launch the brand new content of TOEIC 900 keywords and phrases and the new GEPT list of words that must be recited. The product fully incorporate the words from textbooks and creates a digital and systematic learning model. It has five built-in functions: topic learning, marked review, card review, comprehensive test, and smart memory algorithm, and can help users improve learning efficiency and achieve better learning results. 17. As an optical inspection solution for automated inspection systems, AL120 is a set of interchangeable optical module with the high-stable, low-energy Cortex-M4 MCU as the core. The patented depolarizing light splitting architecture can provide more stable measurement results to meet the optical algorithm calculation requirements on the market. The AL120 module can work alone with a single lithium battery, measure targets at a distance of 0~10mm with depolarized optical fiber, and perform measurement in a bright room in combination with a shade tube.

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

A. Short-term business development plan

Since 2022, Apacer has focused on key areas, laid out future technologies, and operated digital transformation as its three major business capabilities. In 2023, Apacer established its fourth extended major business capability, strategic partner alliances to build Apacer’s competitiveness by, internally and externally, strengthening our soft and hard powers and integrating the value and supply chains. The short-term development plan is described as follows:

(1) Development of key areas to meet product needs

The global industry is moving towards M-shaped development. The business such as network communication, ruggedization, factory automation and healthcare will be the focus in the industrial control field to develop customers of high value and high margin. However, in response to the epidemic, it is also the main target to promote the business such as POS machines, kiosks, digital signages, and education that have a large demand and require a high cost performance ratio. As for the consumer market, such as audio and video, EDR and GoPro, the major demands for high performance, durability and stability are in conformity with the characteristics of Apacer's products, and we will target the Chinese market and meet their specific characteristics. In addition to consumer products, we will continue to take care of the customers in the fields of industrial control, cyber security equipment, mini PCs and 5G base station. In the United States, the product has passed the FIPS (Federal Information Processing Standard) 140-2 certification and the government agencies and defense-related customers will be the focus of development. In addition, voting machines, gaming machines and game markets will be the key areas.

In recent years most companies have considered industrial relocation due to geopolitical risks. In 2023, Apacer announced that it will promote manufacturing in India and work with local professional EMS (Electronic Manufacturing Services) partners to carry out technical transfer and production of memory modules. At present, we are focusing on meeting the needs of local customers. Moving forward, we will focus on growing areas such as servers, industrial computers, transportation, etc. to increase local operational performance in the hope to make a contribution to overall revenue in the future.

(2) Development of product technologies to meet customized needs

The Company's main product lines are DRAM and NAND Flash:

A. There is a new generation of DDR5 products entering the market mainly for consumers. Since customers in the industrial control field need a longer time for verification and testing, the product is expected to be introduced gradually in 2024. In addition, in response to the trend of sustainability, the Company has launched the world's first fully lead-free DDR5, which exceeds the EU RoHS regulations and hopes to guide the industry to shift to the environment-friendly material field steadily.

B. In addition to Gen5 NAND Flash products, the specifications of the Transform SSD can be adjusted according to customer needs. There are additional value-added technologies, such as CoreSnapshot backup technology, CoreRescue instant rescue technology, etc.

(3) Cultivativation of outstanding talents and accumulation of growth capital

In recent years, how to cultivate and retain talents has become an important issue for enterprises in consideration of the factors such as the epidemic and inflation. Apacer has continued to promote A+EAPs employee assistance programs, talent supply chains, succession classes and other activities including welfare and training. At the same time, we provide a complete and sound work environment, promote sports clubs and cultivate the concept of healthy body and mind for all employees. Apacer builds a good brand image to retain outstanding employees and recruit talents, and accumulate growth capital for the Company.

(4) Working with strategic partners to develop overseas markets

In 2022, the Company completed the stock exchange with UD info and the private replacement with Acer; as for UD info, because the company is good in the special niche markets in Europe and the United States, it adopts a dual-brand strategy for overseas sales. Apacer provides R&D, customer service, procurement and other resource assistance, and the benefits of the cooperation are still being extending. In addition to product procurement, Acer hopes to use its global marketing channels and procurement advantages to drive the Apacer brand to extend the reach and promote more diverse cooperation plans.

2. Long-term business development plan

As for the four major driving forces of operations, Apacer not only continues to add resources, but also responds to the wave of sustainable development. The Sustainability Development Committee formulates ESG (Environment, Social, and Governance) policies and annual implementation goals, and the combination of the two serves as a long-term indicators to follow for business development. The key points of the plan are as follows:

(1) Continuous investment in sustainable actions

Apacer has set up a sustainable development committee, which consists of the ESG Promotion Team and Risk Management Team. 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

The international market has developed towards two M-shaped ends in recent years. The two ends are the high-value and high-margin and the large-volume high-C/P ratio market. There is a big difference in demand and market size between them. Therefore, the key areas with high value and high margin include national defense applications, factory automation, gambling games, medical care, Internet of Things, information communications, transportation, etc. Considering that AI applications will go mainstream in the next few years, the Company will focus on matching suitable partners with product and technology research and development. As for consumer products, we are optimistic about the e-sports gaming industry such as game consoles and e-sports PCs. In addition, the education market in overseas countries with demographic dividends such as India and China provides a large-scale business with a high C/P ratio. This is the goal of the Company to actively achieve in the future.

(3) Deployment of future technologies

The Company attaches great importance to research and development technology. In addition to continuously cultivating and recruiting talents, we have established a reward mechanism to encourage application for patents. In the field of SSD storage, in addition to updating firmware and software in response to iteration, we focus on the research and development of value-added application technologies and have obtained patents over the years. In the field of DRAM memory modules, we develop overclocking technologies and corresponding memory modules based on the CXL (Compute Express Link) standard. Taking into account the development trend of the industry, Apacer has invested resources in the development of automated optical inspection technology and equipment, professional technologies such as intelligence that combine the Internet of Things and smart applications, and full-color electronic paper display applications, in the hope to lay a solid R&D competitiveness for Apacer through advanced technology.

(4) Digital transformation of operations

Apacer invests in software and hardware resources every year to digitize operations. The purpose is to accumulate digital databases and effectively analyze information to shorten decision-making time, and give more time to maximize the application of human resources. Digitization has been currently finished for many systems. In recent years, with the rise of AI applications and the emergence of AI tools, it has become a test for enterprises to introduce the most suitable work and assist employees to finish their tasks. The Company plans to introduce an AI server to build an internal AI knowledge management system. At the same time, the strong computing power of the AI server will be used to improve the computing speed of the system model, helping management grasp operating conditions and make strategic adjustments more quickly.

(5) Strategic partner alliance

Through strategic partnership alliances, we can provide enterprises with different operational perspectives and competitiveness. In the 2022, the Company completed the stock exchange with UD info and the private replacement with Acer, and these were one of Apacer's business dynamics; in the 2023, through the local professional EMS (Electronic Manufacturing Services) partner in India, the Company adopted the technology transfer model for memory module production. Moving forward, we will continue to look for other strategic partners to build an ecosystem with an alliance strategy and extend the cooperation benefits of the industrial value chain.

II. Market and production and sales status

(I) Market analysis

1. Sales region for major products

Unit: TWD 1,000

Region \ Year		2022		2023	
		Sales amount	**%**	**Sales amount**	**%**
Domestic sales		1,825,755	20.75%	1,239,570	16.24%
International	America	1,237,247	14.07%	1,155,916	15.15%
	Europe	1,718,196	19.53%	1,926,820	25.25%
	Asia	3,924,433	44.61%	3,231,584	42.35%
	Other	91,404	1.04%	77,556	1.01%
	Subtotal	6,971,280	79.25%	6,391,876	83.76%
Total		8,797,035	100.00%	7,631,446	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 2023 was 9.40%.

Unit: TWD 1,000

Name of Company	Net Operating Revenues	Market Share
Apacer	7,631,446	9.40%
ADATA	33,684,782	41.49%
Transcend	10,496,172	12.93%
Team Group	16,566,276	20.41%
Silicon Power	4,490,485	5.53%
Innodisk	8,313,778	10.24%
Total	81,182,939	100.00%

Source: All companies' 2023 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:

The effect of production cuts produces a benefit on the supply side. Although the capacity utilization rate of DDR5 has increased slightly, it was unable to increase bit output in the current quarter due to its long production cycle, resulting in reduced inventory pressure.

As the price of DRAM suppliers began to rise in the fourth quarter of 2023, a few customers began to replenish their inventory, but their willingness to replenish their stocks was slightly less than that of NAND Flash. The overall supplier inventory has slightly decreased. Micron's inventory has not decreased but increased slightly because its capacity utilization has improved slightly. Compared with the inventory level of the healthcare products (about 6 weeks), there is an excess to a level of about one month.

The demand outlook for PC OEMs is poor. Although PC OEMs have accepted price increases for DRAM, the number of bits purchased has not increased significantly. The inventory level is roughly the same as that at the beginning of the quarter. In the first quarter of 2024, the market generally believes that the willingness to purchase DRAM is still slightly weak despite suppliers' intentions to continue raising prices.

Large module factories still have the highest inventory in the entire DRAM market. This is one of the main reasons why the DRAM spot price was difficult to rise. However, as consumer demand is not increased significantly and it is difficult to reduce inventories, they are still at a high level ranging from about 10 to 18 weeks.

The overall market situation of hyperscalers (hyperscale cloud service providers) is roughly the same as that in the fourth quarter of 2023. The purchasing behavior of CSPs (Cloud Service Providers) from China is the most active, but in addition, North American CSPs are more willing to purchase goods. Still sluggish, inventory levels have not changed significantly. It is worth noting that the current inventory of CSPs is not far from the safe level, which means that if server demand suddenly strengthens, server DRAM may show greater inventory replenishment power, but signs of an increase in demand in this field is yet to be observed.

The demand for mobile phones, especially from Chinese brand manufacturers, continues to sprint towards shipment targets, and the willingness to stock up is the strongest among all terminal products. However, due to the reluctance of DRAM suppliers to sell, the overall delivery rate of mobile DRAM is low, and the inventory in this field has dropped from 6-8 weeks at the beginning of the quarter to 5-7 weeks. Driven by this phenomenon, mobile DRAM has the highest price increase among the three major DRAM products in the first quarter of 2024, and the momentum for stocking up will continue.

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 server industry will have two forces rushing forward in 2024. One is the general purpose server that has been dormant for more than half a year, and the other is the AI server that will take off in the second half of the year.

The server industry was affected by general server inventory adjustments in 2023, with shipments sluggish. The sudden rise of AI has adjusted the proportion of data center (Data Center) resource allocation to AI servers, which has also made general server shipments more suppressed. However, This situation is changing. Many server manufacturers have said that the replenishment force after inventory digestion has made general servers show signs of recovery.

AI servers will be the main driver of server demand growth in 2024. Micron stated at the press conference that the DRAM usage of an AI server is 6-8 times that of an ordinary server. By 2026, the server DRAM (excluding HBM) market size is expected to reach USD 32.1 billion.

The shipment of AI servers began in 2023. However, the quantity of the shipment was limited due to tight production capacity of CoWoS (Chip on Wafer on Substrate) packaging technology. Looking forward to the future, as the material shortage eases, AI servers will increase significantly in 2024. The shipment of the training of GPU is expected to grow from 1.53 million units in 2023 to 4.57 million units in 2024 and 5.96 million units in 2025.

Assuming that a training server needs 8 GPUs, shipments will increase from 191,000 units in 2023 to 572,000 units in 2024 and 993,000 units in 2025. Based on the fact that training servers account for about 30% of the overall AI servers, it is estimated that overall AI server shipments from 2023 to 2025 will account for 5%, 14%, and 22% of the overall server shipments, respectively.

CoWoS production capacity increased from the fourth quarter of 2023. Since the supply chain delivery time is as long as two to three quarters, it is estimated that the overall AI server demand will grow rapidly from the second quarter of 2024.

The recovery of the above-mentioned general servers is better than expected, and the momentum of AI servers is strong. After experiencing in 2023, the server industry chain will heat up slightly in 2024 and will grow significantly in 2025. It is estimated that server industry shipments will turn from recession in the previous year to growth in 2024, with a growth rate of about 5%. (See Fig. 21)

As DDR memory technology evolved to DDR5, the usage of memory interface chips has also increased. After Intel and AMD launched new platforms that support DDR5, server DDR5 encountered PMIC matching issues, which prevented the market size of DDR5 from rapidly increasing and hindered the launch of new platforms. At present, DRAM original manufacturers and PMIC manufacturers have begun to solve this issue. Although the supply of original DDR5 is hindered in the short term, due to the large number of PMIC suppliers, switching and adaptation will not become a bottleneck in increasing DDR5 penetration. The penetration rate of server DDR5 is expected to reach about 30% this year. With the accelerated development of AI servers and the gradual resolution of PMIC yield issues, DDR5 penetration is expected to further increase, reaching 85% in 2026.

Server DRAM Content Growth	2022		2023		2024F	
	YoY	GB	YoY	GB	YoY	GB
Ave Content	21%	520	15%	598	21%	725
Server Shipment	2022		2023		2024F	
	YoY	Mn units	YoY	Mn units	YoY	Mn units
Inventec	0.4%	3.5	-15.3%	3.0	5.4%	3.1
Wistron	-7.6%	3.2	-42.5%	1.8	3.1%	1.9
Foxconn	5.2%	2.2	-2.9%	2.1	5.4%	2.2
Quanta	-0.7%	2.9	-25.2%	2.1	2.9%	2.2
Mitac	2.9%	1.3	-3.4%	1.3	5.6%	1.3
Others	14.0%	2.7	52.5%	4.1	6.0%	4.4
Total	1.3%	15.7	-8.2%	14.4	5.0%	15.1

Source: inSpectrum, February 2024

Fig. 21 WW Server Shipment & Content

The DIGITIMES Research Center comprehensively analyzes supply chain information, regional market conditions, and observes global political and economic trends. It is estimated that global smartphone shipments will decline in 2023. However, looking forward to the next five years, consumers in most countries around the world are gradually adapting to high inflation. and the appreciation of the US dollar. It is expected that these two negative effects will gradually subside from 2025. In addition, the trend of feature phone users in emerging markets to replace smartphones and 5G phones remains unchanged. It is estimated that global smartphone sales will increase every year. The cargo growth rate will fall between 4% and 8%, and the compound annual growth rate (CAGR) is estimated to be 6%.

According to the report of the research firm, inSpectrum, in February 2024, global smartphone market shipments decreased by 4.1% year-on-year in 2023 to 1.15 billion units. Among them, Apple's (AAPL-US) market share hit a record high and topped the list for the first time. Overall, the global smartphone market still faces challenges, but recovery momentum is developing rapidly. Shipments in 2023 were the lowest annual sales in a decade, driven by general economic challenges and rising inventories at the start of the year. However, the growth in the second half of the year underpinned an expected recovery in 2024. (See Fig. 22)

2024 has become the first year of AI mobile phones. First, South Korean mobile phone brand Samsung launched the S24 series at the end of January to show off its AI capabilities. Then, in the Mobile World Congress (MWC) in Spain from February 26 to 29, the major Chinese mobile phone manufacturers Xiaomi, Honor and OPPO were rushing to launch new mobile phone products. All of the products support AI.

Mobile phone manufacturers stated that the chip design of AI mobile phones will be the same as that of PCs. The processors adopt the "CPU+GPU+NPU" architecture, allowing the mobile phones to directly run AI technologies for various purposes, such as assisting in shooting better photos, translating different languages, identifying music, and more. Canalys predicts that about 5% of mobile phones shipped in 2024 will support AI. Based on the global mobile phone shipments of 1.2 billion units in 2023, it is estimated that about 60 million AI mobile phones will be shipped. The penetration rate of AI mobile phones in 2027 will increase to 45% of global mobile phone sales. Counterpoint's forecast is more optimistic, with generative AI mobile phone shipments estimated to exceed 100 million units in 2024.

Mobile DRAM Content Growth	2022		2023		2024F	
	YoY	GB	YoY	GB	YoY	GB
PoP	10%	6.9	12%	7.7	9%	8.5
xMCPs	16%	5.6	15%	6.5	11%	7.1
Ave	14%	6.0	13%	6.8	11%	7.5
Smartphone Shipment	**2022**		**2023**		**2024F**	
	YoY	**Mn units**	**YoY**	**Mn units**	**YoY**	**Mn units**
Samsung	-3.4%	260.1	-13.4%	225.1	2.3%	230.3
Apple	-5.7%	226.4	-1.8%	222.3	0.2%	222.9
OPPO	-15.9%	166.5	-11.4%	147.5	-3.4%	142.5
Vivo	-23.0%	99.5	-10.3%	89.2	3.5%	92.3
Huawei	-40.9%	21.7	83.6%	39.8	55.9%	62.0
Honor	28.3%	51.4	11.9%	57.6	13.9%	65.6
Xiaomi	-20.1%	153.3	-4.2%	146.8	4.0%	152.7
Lenovo	-9.8%	45.6	10.3%	50.3	19.4%	60.1
Transsion	-8.8%	75.5	24.1%	93.7	6.0%	99.3
Other	-6.6%	101.8	-21.3%	80.2	-23.8%	61.1
Total	-10.8%	1,201.7	-4.1%	1,152.6	3.1%	1,188.7

Source: inSpectrum, February 2024

Fig. 22 WW Smartphone Shipment & Content

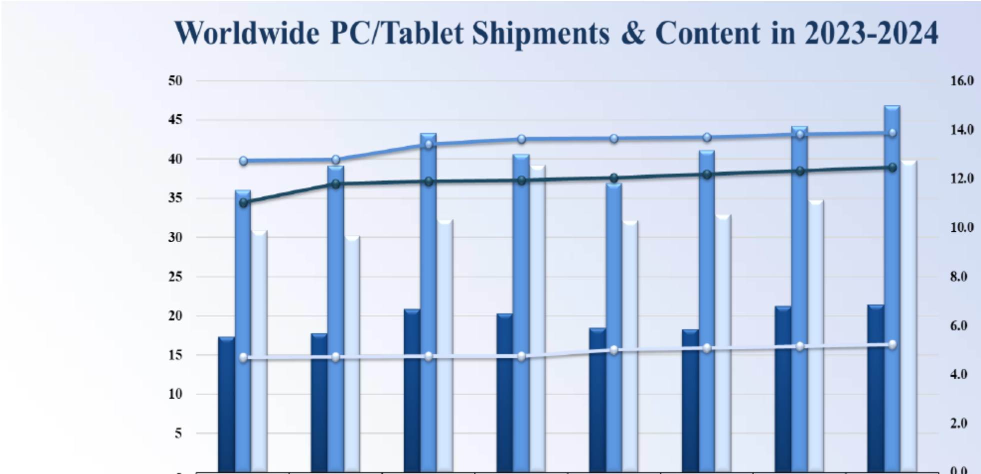
As generative AI applications gradually expand from cloud data centers to terminal edge devices, PCs with built-in AI functions will be launched successively in 2024. The LPCAMM2 memory exhibited by Micron at CES is regarded as the last mile of AI PCs. It uses LPDDR5X DRAM and more emphasis is placed on reducing power consumption and saving space.

Micron emphasized that provision of LPCAMM2 samples has begun. The mass production is expected to start in the first half of 2024. It will be introduced into new notebook products of many major PC manufacturers.

AI PC development focuses on edge AI to improve the built-in reasoning ability of PCs rather than the current AI architecture based on cloud data centers, which requires more sensors to increase intuitive operations. It is expected that more AI PC models will be launched in the second half of 2024 and 2025 to stimulate demand growth.

Inventory correction will end in the first quarter of 2024, and replacement demand will reappear with the economic recovery. In addition, the launch of Windows 12 with AI functions in 2024 will drive upgrade demand, and W10 technical support will stop in October 2025. PC shipments are expected to recover to an annual growth rate of 5.5% in 2024.

Among them, the business market will be the first to see the demand for replacement and upgrade to AI PCs, which will drive a significant rebound in revenue from the notebook supply chain in the second half of 2024 and 2025. (See Fig. 23)



	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24	3Q24	4Q24
Desktop (mu Shipment)	17.3	17.8	20.8	20.3	18.5	18.3	21.2	21.5
Notebook (mu Shipment)	36.1	39.2	43.4	40.6	36.9	41.2	44.3	46.9
Tablet (mu Shipment)	30.9	30.2	32.3	39.3	32.3	33.0	34.9	39.8
Desktop (GB Content)	11.0	11.8	11.9	11.9	12.0	12.2	12.3	12.5
Notebook (GB Content)	12.7	12.8	13.4	13.6	13.7	13.7	13.8	13.9
Tablet (GB Content)	4.7	4.7	4.7	4.8	5.0	5.1	5.2	5.2

Source: inSpectrum, February 2024

Fig. 23 WW PC/NB/Tablet Shipment & Content

The price of the memory products will rebound from the bottom in 2024. Although the long Lunar New Year holiday affected the willingness of placing orders to the suppliers and the global economic recovery was slow, the memory supply chain still observes the actual demand in the second quarter.

The industry expects that even if the market end demand in the first half of the year is not as expected, the original manufacturers will support the moderate price increase of DRAM and NAND Flash. In order to cope with the intensification of supply in the traditional peak season, it is not ruled out that there will be another wave of replenishment in the second quarter. It is expected that the price increase in the second quarter will become the indicator for the development of the industry in the second half of the year.

Although stocking demand remains in the overseas distribution market, China's economy has fallen into a downturn. Although people are optimistic about the recovery and growth of the memory demand, there are conservative people who believe that the adjustment of the memory market price will slow down in the short term. Factories and terminal industry players will enter into a tug-of-war on pricing and the price of the memory will be driven up through reduction of supply.

From the perspective of memory module manufacturers, market demand has not been enthusiastic recently, but prices have neither rise not fallen. Although the market sentiment signals are chaotic and unclear, the attitude of the original manufacturers toward the price of the memory is very determined.

After all, it is not easy to raise market price. The he target of turning loss into profit in a single quarter should not be undone and, moreover, price cuts cannot stimulate the increase in demand. Therefore, although the extent of future price increases may not be consistent with the expectations of all parties, the original manufacturers are like-minded as to the perspective of "not cutting the price".

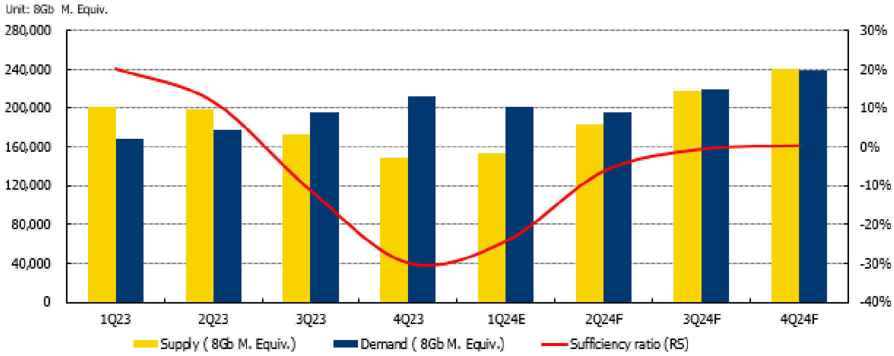
The industry believes that future price trends still depend on the attitude of upstream original manufacturers. Due to the shortage of the resources released to memory module manufacturers in the first quarter, the price was not affected by the market's wait-and-see atmosphere. Original manufacturers give priority to cloud servers and AI-related application customers are expected to benefit from the spread of the AI topic in 2024. The demand in the regions, including the United States, other than China will begin to bottom out.

Original NAND manufacturers expect that the restoration of production capacity will wait until the end of the second quarter of 2024. However, if the demand recovery is weak, it is not ruled out that the schedule will be adjusted in response to demand. SK Hynix and others plan to increase DRAM production capacity, mainly targeting HBM Or high-end products such as DDR5. After CoWoS capacity expansion commences in the future, HBM's bit consumption is expected to grow all the way. In the circumstance where DRAM accounted for about a high single digit proportion in 2023, it will rise to about 20% in 2024.

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

A. Supply and demand status:

Major international suppliers of NAND Flash adhered to the capacity reduction policy in the first quarter of 2024 to keep pushing up the quotation. The memory industry pointed out that from the fourth quarter of 2023, there is a clear upward trend in distribution prices, but downstream customers still view demand conservatively. On the other hand, upstream original manufacturers continue to emphasize that the price will go up significantly until the first quarter of 2024. OEM and IPC customers have finally accepted the fact that low-priced memory will no longer be seen. However, market demand support is still challenging, and customers prefer short-term purchasing models, indicating that they still have a wait-and-see attitude toward recovery momentum. Compared with DRAM, which is driven by the high computing power demand of AI, there is still more noise in the growth momentum of NAND. SK Hynix previously pointed out that the worst is over, but the recovery speed of the NAND industry is relatively slow, and it will not consider increasing production until after the middle of the year. Kioxia announced that it will readjust its production reduction strategy, which means that it will continue to resume production increases. The industry believes that although it will take at least 1 to 2 quarters for the increase in the production volume to actually reflect the supply, the fact that the increase of the NAND production comes earlier will bring more variables. In particular, NAND lacks strong application outlets overseas, and the industrial order is still in the recovery stage. If Kioxia starts to increase production, it may have a subsequent chain reaction in the industry, triggering other original manufacturers to follow up and increase the utilization rate of NAND production lines. Module industry players said that although the overall market situation is slowly recovering, the driving force for price increases from 2023 to 2024 will come from upstream production cuts. Now various original manufacturers have successively increased their utilization rates, which means that the production cuts that have lasted for more than a year will enter the end. The next step will be to test whether the needs of terminal applications can keep up in a timely manner. (See Fig. 24)



Source: TrendForce Corp., February 2024

Fig. 24 2023~2024F NAND Flash Sufficiency

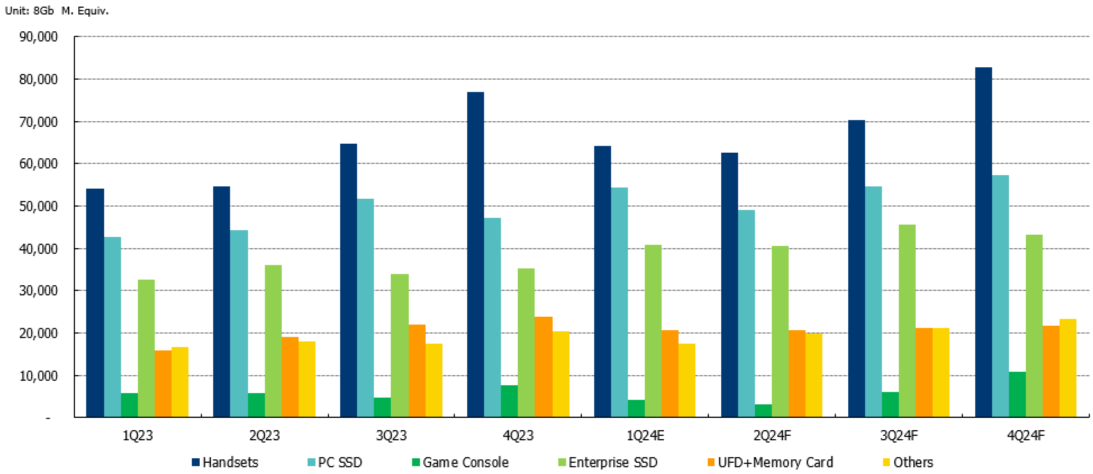
B. The growth potential for NAND FLASH application in the future

In 2024, the average capacity of DRAM and NAND Flash in various AI extended applications, such as smartphones, servers, and NBs, will increase. The growth rate will be the highest in the server field. The average capacity of server DRAM is expected to increase by 17.3% annually; Enterprise SSD is expected to grow by 13.2% annually. The market penetration rate of AI smartphones and AI PCs is expected to increase slightly in 2025, which will then drive the average single-machine capacity to increase simultaneously. From the perspective of smartphones, TrendForce pointed out that since mobile phone chip manufacturers mainly focus on improving computing performance and have not yet launched actual AI applications, the fermentation of the topic is limited. At the same time, memory prices collapsed rapidly due to oversupply in the market in 2023. When prices reached a relatively low-end attractiveness, the average installed capacity of DRAM in smartphones increased by 17.5% annually in 2023, while the average installed capacity of NAND Flash in a single machine increased by 17.5%. The annual growth reached 19.2%, and the capacity could meet the needs of users. Therefore, in 2024, when no new applications are expected to be launched, the annual growth rate of the average stand-alone capacity of smartphones for both DRAM and NAND Flash will slow down. It is estimated to be 14.1% and 9.3%, respectively.

In terms of servers, TrendForce expects that as demand for AI servers continues to increase, high-end AI chips such as NVIDIA H200/B100, AMD MI350 and cloud service provider (CSP) self-developed ASICs will be launched or mass production will begin. However, since Training AI Servers are currently a mainstream product in the market, its expanded memory is mainly DRAM products that facilitate high-speed computing. Therefore, compared with NAND Flash, the average capacity of a single machine of DRAM has grown at a higher rate. Server DRAM is expected to have an annual growth rate of 17.3%, and that of the Enterprise SSD is about 13.2%. In terms of NB, the CPU computing power of AI PCs specified by Microsoft must reach more than 40TOPS. Currently, those that meet the specifications include Qualcomm Snapdragon, AMD Ryzen 8000 series (Strix Point), and Intel's Lunar Lake. It is expected that the NBs with this CPU computing power will not be launched until the second half of 2024, so it will be of limited help in increasing the memory capacity. The main standard requirement of AI PC hardware specifications is to increase the DRAM capacity to 16GB, while it is not required for SSD to upgrade to 1TB.

Therefore, it is estimated that the growth rate of the average installed DRAM capacity in a single NB is about 12.4%. The growth rate will only become more significant in 2025 after the mass production of AI PCs. As for Client SSD, although the average installed capacity in a single machine is rising, the annual growth rate is only 9.7% as estimated due to the sharp rebound of the NAND Flash price.

With the development of related technologies, various AI applications are increasing rapidly. First of all, in the edge computing applications, there are high requirements for immediacy and low latency, and chip performance must be sufficient. This has caused a significant increase in related semiconductor demand. With the AI edge computing, calculations and analyses are executed on the edge devices close to the data source, reducing data transmission between clouds and enabling faster analysis and response. For example, self-driving vehicles require real-time analysis of images and sensor data locally on the carbon-borne device to make decisions. In addition, various sensors in the IIoT also require real-time analysis on the edge. These applications require high-performance edge chips to implement AI computing. In addition to terminal applications, generative AI can automatically generate various contents, which will lead to a surge in demand for related chips. According to KPMG's survey, generative AI has become one of the emerging technologies that semiconductor companies value. With the increasing applications of generative AI models such as DALL-E and Stable Diffusion, the demand for graphics processors (GPUs) that can accelerate AI operations has increased significantly to meet the computing needs of these model training and inferences. In addition, the specialization and heterogeneous integration of AI chips are also important trends. In addition to increasing the training and reasoning efficiency of related models, it can effectively reduce costs. For example, Google's TPU is a representative of AIe-specific chips, effectively reducing the demand for mainstream GPUs. AI model training and inference processes require processing a large amount of data, which place higher demands on memory and storage devices. To speed up training and inference, high-bandwidth, low-latency memory is required. Large-capacity storage devices are also required to store large training data and the model itself. As the scale of artificial intelligence models continues to expand, the amount of training data reaches TB and PB levels, and the demand for memory and storage becomes stronger. New memory technologies such as HBM, HMC and other stacked memories can provide memory bandwidth far exceeding that of DDR memory for artificial intelligence applications. New storage interfaces and technologies such as NVMe and SCM can provide data access speeds that are much higher than traditional interfaces such as SATA and SAS. In terms of storage systems, SSDs based on flash memory are rapidly replacing traditional mechanical hard drives, providing read and write speeds that far exceed those of hard drives. In addition, the identification of storage types and data location awareness are important, which can match different types of data with different access frequencies to the most suitable storage media, further improving the overall storage system performance. As the artificial intelligence industry develops, the demand for high-speed, large-capacity memory and storage will continue to increase rapidly. This will drive innovation in related technologies and bring new market opportunities to memory and storage manufacturers. (See Fig. 25)



Source: TrendForce Corp., February 2024

Fig. 25 2023–2024F NAND Flash demand analysis by application

4. Competitive niches

(1) More than 20 years of industry experience and accumulated operational foundation

The Company has been around for more than 20 years and accumulated hundreds of patents and a list of more than 1,000 customers. The memory industry has experienced several shocks and tests in the past. Therefore, Apacer's operations focus on two major product lines: industrial control and consumer products. Industrial control products are used to stabilize gross profits and consumer products are used to adjust the price. Apacer ensures stable business operations through a combination of these two product lines.

(2) Development of new businesses and diversification of business models

Optimistic about the demand for smart environmental control solutions and factory automation equipment upgrades, the company develops new ventures and establishes a smart application department. The main service areas are smart automation and smart networking. Intelligent automation focuses on the planning and construction of automated optical inspection equipment and automated process/packaging equipment. The Internet of Intelligence focuses on the planning and construction of active smart disaster prevention systems and smart environment safety management systems. Apacer's memory business includes industrial control and consumption, combined with the innovation of smart applications. We will develop the three major product lines in parallel, adjust profit stability in a timely manner, and maintain the company's long-term competitiveness.

(3) Promotion of patent R&D and enhancement of 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. As of the end of 2023, the number of active patents was 235, mainly in Taiwan, the United States and China. The total number of patents continues to accumulate.

(4) Global marketing strategy to help business promotion

The Company has the own brand of "Apacer" and establishes subsidiaries in the United States, China, Europe, Japan, and India to meet the 24-hour sales and customer service needs of local customers. For the development of overseas customers, we use local exhibitions or seminars as a platform to participate in major international exhibitions such as Embedded World (Europe), Australian AGE (Australasian Gaming Expo), IT Week (Japan), International Internet of Things Exhibition (China), etc., and use online video or social media to plan communication content according to the differences in target attributes to connect with customers in various places, or conduct local road shows or marketing activities in conjunction with business planning to promote business development.

(5) Optimization of process equipment and combination of systems to meet highly customized needs

The Company's customer types are mainly industrial control, and most of them provide small-scale customized services. In order to meet the needs of this type of customers, Apacer carries out system integration and optimization starting from procurement and stocking, inventory management, production ordering, warehouse shipping, etc., to improve material preparation, scheduling, production efficiency and other aspects, and also gradually improves factory processes. Equipment is replaced and updated to improve production efficiency. In view of the implementation of AI technology, in the future, we will evaluate the use of AI defect detection technology with AOI optical inspection equipment. By reducing the overkill rate and improving the through rate, excellent products and services will be the means to increase customer's stickiness to Apacer.

(6) Planning of sustainable supply chains to ensure legal compliance

The epidemic unexpectedly caused panic in the global supply chain, and coupled with the impact of geopolitical risks, how to become a sustainable supply chain for customers and how to establish a sustainable supply chain for the company itself has become a prominent lesson in recent years. In addition, international trends are paying more and more attention to issues such as green materials, green packaging, humanitarian care, and local friendliness. These will become key factors that affect the long-term operation of enterprises. Apacer has established a long-term supply chain management mechanism and built good relationships with important domestic and foreign suppliers. We have obtained silver certification under the Responsible Business Alliance (RBA) Code of Conduct, which is rare in the industry and is one of the criteria that first-tier customers take into account in selection of suppliers.

(7) Complete international verification and recognized quality and goodwill

Memory modules are key to the core storage of equipment, and customers have strict quality requirements. Therefore, the Company continues to obtain international ISO certifications: ISO 9001, ISO 45001, ISO 14001 and IECQ QC 080000, etc. We have obtained ISO 14064-1 organizational greenhouse gas inventory verification statement, and planned to obtain ISO 27001 information security management certificate in 2024 to have all the international management certificates ranging from information security management, greenhouse gas management to product management. In addition to meeting customer standards, these create competitiveness for sustainable corporate operations.

(8) Deepening core values and accumulating sustainable momentum

Apacer believes that only companies with corporate culture can operate sustainably, and the establishment of corporate culture must not only start from the management level, but also start from the brand spirit and core values. We always stick to our core brand value of “becoming better partners”, 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. Furthermore, to implement sound management policies and pursue long-term sustainable development, we set up the Sustainable Development Committee to focus on sustainability issues. Especially in the corporate governance and employee care areas, we have received many certificates from external institution over the past years and these have demonstrated the operating performance of the Company. 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. R&D and patent development capabilities

The company attaches great importance to R&D and patent development, and has accumulated more than 200 patents over the years, covering Taichung, China, and the United States. At the same time, it regularly actively evaluates the possibility of commercialization of internally applied patents, and ensures external patent applications. Whether there are any concerns about infringement, a two-pronged approach is needed to build a patented technology moat. In addition, the R&D department also holds internal technology or patent ideas every year. Currently, Apacer technology is divided into six major aspects: data integrity, sustainable use, power supply stability, data security protection, robustness and value-added applications. We can provide customers with Provide customized applications.

B. Complete service process and outstanding product quality

The Company adheres to the brand spirit of "Access the best" and the core brand value of " becoming better partners ", and continues to invest in process equipment and service process optimization. There are 6 subsidiaries around the world located in different regions, which can meet customers' nearest procurement and customer service needs. In addition to possessing ISO international certification, we are also one of the few memory module manufacturers in the industry to obtain RBA (Responsible Business Alliance Code of Conduct) silver-level certification. Its scope includes labor, occupational health and safety, integrity management, etc. The certification process is strict and complies with international requirements for ESG (environment, society, corporate governance) and other aspects, which is conducive to gaining recognition from more potential customers.

C. Technology and trends drive products to accelerate the transition between generations

With the development of technology, memory capacity is gradually moving toward larger capacities. From Gen4 to Gen5, and from DDR4 to DDR5, product specifications continue to be upgraded, driving customers to slowly switch product specifications and promoting the transition from generation to generation. The global concerns about greenhouse gases, climate change risks, environmental pollution and other issues require thinking of sustainability in product research and development. In the past, we only pursued efficiency and benefits, but now we need to launch products that can solve sustainability issues for customers. This is a good entry point for business opportunities.

D. Cooperation with strategic partners

Apacer has established for more than 26 years and accumulated extensive experience in database in the supply chain. 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.

The 's current main strategic partners include: Phison Electronics, which mainly purchases components and exchanges on product technology; UD info, which mainly strengthens the development of overseas markets and large-scale procurement of components; Acer, which helps increase the export outlets of Apacer products and increase the market share of commercial channels through its global market deployment. Considering the growth needs of our Company, we will continue to look for more high-quality strategic partners in the future, hoping to drive operational performance while promoting shareholder benefits.

(2) Unfavorable factors and countermeasures

A. International political risk and geopolitical risk impact

In recent years, the Russia-Ukraine war, the China-US trade war, the Israeli-Palestinian conflict and Taiwan Strait relations have affected the stability of the supply chain in 2023, and customers' confidence in Taiwan's operations. In addition to actively developing the second supplier database and stabilizing the existing supply chain, the Company cooperates with local Indian manufacturer partners to manufacture and produce memory modules. Currently, it mainly meets local demand, and may also be used as a production base in Asia Pacific or Europe in the future.

B. Big price fluctuations of main raw materials affect the stability of profits

The Company's main raw materials are DRAM particles and NAND Flash particles, and prices fluctuate frequently with market fluctuations, which in turn affects corporate operations. Our response measures are as follows:

a. The Company continues to deploy industrial control product lines and consumer product lines. In addition to accumulating brand reputation through consumer products, the simultaneous advancement of both has the benefit of price adjustment.

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.

C. Consumer market falling into low-price competition

Consumer products have shown an M-shaped trend in recent years, and low-price competition can be seen everywhere. The Company's response measures are:

a. Find large-scale market development for low-priced products, such as laptops for the education industry, cash registers, etc., and respond with large-volume but cost-effective products.

b. E-sports or game consoles, photography groups, etc. are customer groups that can accept high prices but have relatively high quality. They are also the target groups that we have actively expanded in recent years.

c. Adjust prices through real-time information reporting and reduce inventory through sales techniques.

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.

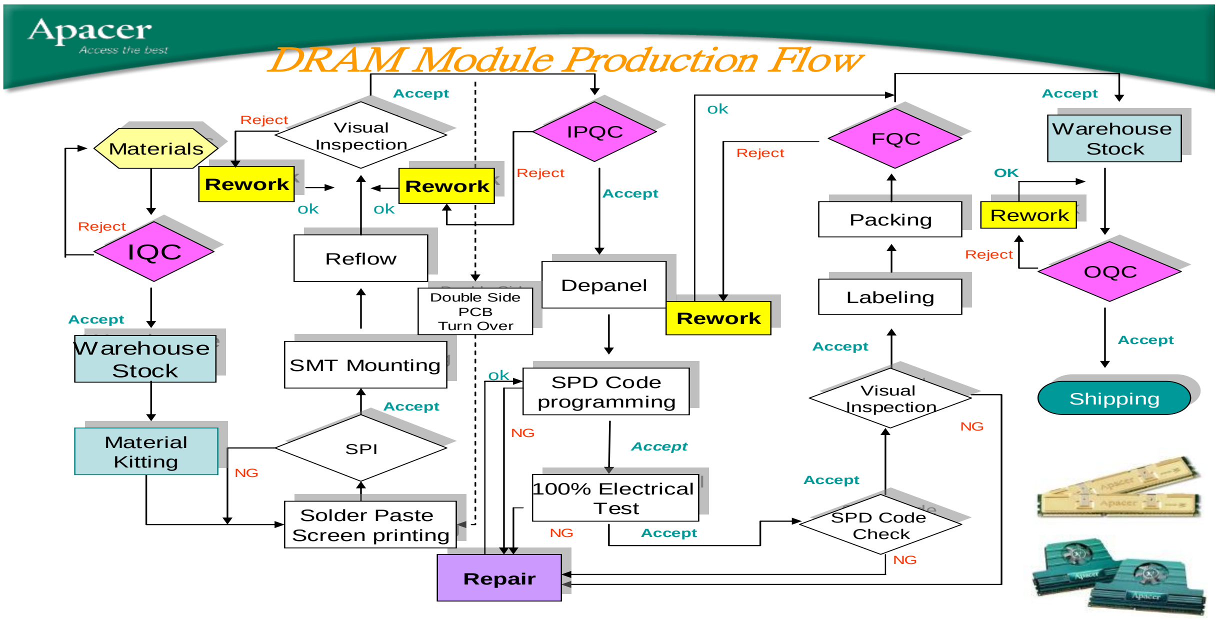
(II) Important uses and production processes of our main products

1. Important uses of the main products

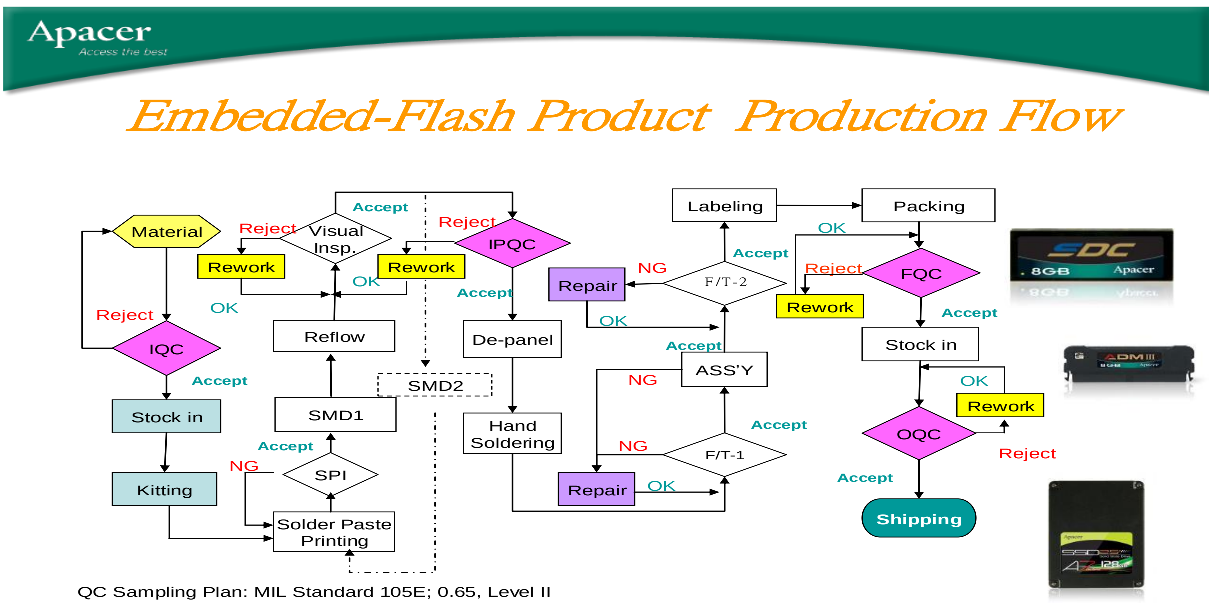
Main products	Main uses
Memory module	Memory modules are various types of DRAMs printed on a circuit board via a circuit design, which are embedded in computer main boards and which are compatible with the computer functions, to expand the data processing capacity of the computer and accelerate data 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	(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.

Main products	Main uses
	(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.

2. Production processes



QC Sampling Plan: MIL Standard 105E; 0.65, Level II



QC Sampling Plan: MIL Standard 105E; 0.65, Level II

(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

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

Unit: TWD 1,000

2022				2023			
Title	**Amount**	**Annual net procurement ratio (%)**	**Relationship with the issuer**	**Title**	**Amount**	**Annual net procurement ratio (%)**	**Relationship with the issuer**
A	1,204,195	19.49	Note	A	1,333,729	21.52	Note
B	1,102,092	17.84	-	B	747,267	12.06	-
C	874,555	14.16	-	C	677,159	10.93	-
Other	2,996,583	48.51		Other	3,439,645	55.49	
Net procurement amount	**6,177,425**	**100.00**		**Net procurement amount**	**6,197,800**	**100.00**	

Note: They are related parties of the Company.

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

(V) Production value over the last two years

Unit: 1,000 pieces; TWD 1,000

Year / Production value / Major products	2022			2023		
	Production capacity	**Production volume**	**Production value**	**Production capacity**	**Production volume**	**Production value**
Memory module	(Note 1)	21,732	4,673,374	(Note 3)	37,826	4,605,782
Flash memory	(Note 2)	7,679	2,402,990	(Note 4)	7,573	2,117,349
Total	**3,397**	**29,411**	**7,076,364**	**3,386**	**45,399**	**6,723,131**

Note 1: Nearly 77% of the production was outsourced.
Note 2: Nearly 69% of the production was outsourced.
Note 3: Nearly 93% of the production was outsourced.
Note 4: Nearly 79% of the production was outsourced.

(VI) Sales value over the last two years

Unit: 1,000 pieces; TWD 1,000

Year / Sales value / Major products	2022				2023			
	Domestic sales		International sales		Domestic sales		International sales	
	Amount	**Value**	**Amount**	**Value**	**Amount**	**Value**	**Amount**	**Value**
Flash memory	2,384	791,430	15,467	4,298,858	3,140	564,086	40,717	4,250,140
Memory module	1,930	986,774	16,409	2,618,058	1,719	598,962	62,929	2,141,576
Other	34	47,551	0	54,364	98	76,522	0	160
Total	**4,348**	**1,825,755**	**31,876**	**6,971,280**	**4,957**	**1,239,570**	**103,646**	**6,391,876**

Note : The increase in international sales amount in 2023 compared with 2022 was due to the sales of CKD.

III. Employee information for the past 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 2023, the total number of training hours for personnel was 9,734 hours.

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

Year		2022	2023	2024, as of March 31
Number of employees	Direct personnel	150	165	163
	Indirect personnel	319	332	333
	Total	469	497	496
Average age		40	40	40
Average years with our company		8	8	8
Distribution of degrees	Doctoral degree	2	2	2
	Master's degree	91	96	98
	(Associate's) Bachelor’s degree	300	318	314
	Senior high (vocational) school	72	77	78
	Below senior high (vocational) school	4	4	4

Note: The numbers indicated in the table above are those of Taiwan.

(III) Training structure and efficacy

1. Training structure

In 2020, our Apacer Academy was established with the President 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 Department of Human Resources and Administrative Service 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 CRS 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 2023 training results are as follows:

Course type	Number of participants	Total man-hours	Total cost (TWD)
New staff training (including Induction occupational safety and health for new staff)	401	768	$1,843,644
General training (including law-related training)	3,491	6,672	
Talent Training (including management training)	477	912	
External professional training	87	760	
RBA & ethical management training & insider trading prevention training (Note 1) (including in-service occupational safety and health)	514	514	
ESG training	79	108	
Total	5,049	9,734	

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

   A. 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 2023, 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 514 persons.

   B. 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.

   C. 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:

      (1) Where the employee misrepresents any fact at the time of signing of a labor contract and thus caused the Company to suffer damage or fear thereof.

      (2) 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.

(3) 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.

(4) 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.

(5) Where the employee is, without good cause, absent from work for three consecutive days, or for a total six days in any month.

(6) Where the employee engages in corruption or misappropriation of public funds, or accepts bribes or commissions.

(7) Where the employee runs other business outside the Company which affects the Company's interests and business conflicts in a serious way.

(8) Where the employee refuses to follow reasonable instructions and neglect their duties, resulting in damage to the Company; this must be specific and serious.

(9) Where the employee slanders the Company, instigates an illegal slow-down or illegal strikes, with specific evidence.

(10) Where the employee forges the signature of their supervisor or abuses their supervisor’s stamp.

(11) Where the employee threatens the supervisor or destroys or alters a company file.

(12) Where the employee steals or gambles anywhere within the premises of the Company that affects the order of work; with specific evidence after investigation.

(13) 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.

(14) 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

In 2022, we included the greenhouse gas emissions from transportation in the calculation for the first time. The scope covered the greenhouse gas emissions caused by the commute and business travel of employees (Scope 3), and the emissions totaled 366.6729 t CO_2-e/year.

In general, the greenhouse gas emissions in 2023 reduced by 17.6 t CO_2-e/year compared to 2022.

In 2023, Apacer implemented the shutdown of water-cooled air conditioning equipment one hour in advance, replaced all lighting equipment with LED lamps, purchased new equipment to reduce energy consumption, and reduced the power consumption. Compared with 2022, Apacer saved 96K KWh of electricity in total. In the future, the Company will continuously manage and promote greenhouse gas reduction.

Year	2022	2023 (Note 1)
Direct greenhouse gas emissions	125.2123 tCO_2-e/year	132.5509 tCO_2-e/year
Indirect greenhouse gas emissions	1,816.0016 tCO_2-e/year	1,768.5793 tCO_2-e/year
Greenhouse gas emissions from transportation	366.6729 tCO_2-e/year	389.1529 tCO_2-e/year
Total greenhouse gas emissions	2,307.8868 tCO_2-e/year	2,290.2831 tCO_2-e/year

Note 1: As the 2023 “electricity carbon emission factor” has not yet been available, the one in 2022 is used as the basis for the calculation of the emissions.

(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.

(IV) Green product management

The Company has obtained the “environmental management system” (ISO 14001:2015) and the “occupational safety and health management system” (ISO 45001:2018) which have both been verified by third-party verifying agencies and have currently valid certifications. In response to the growing awareness of environmental protection and the requirements of numerous customers, we have implemented the “hazardous substance process management (HSPM) system” (IECQ QC 080000) in 2010, thereby developing a comprehensive hazardous substance process management mechanism. Also, we request the suppliers to keep in line with our policies to meet the environmental requirements of international regulations and domestic and foreign customers, including RoHS, REACH, WEEE, PFOA, PFOS, POPs, China RoHS and Taiwan RoHS.

We have made all processes lead-free as of 2007, and gradually made them halogen-free as well since 2011.

We also promise that products delivered to our customers will never use metals from conflict-affected and high-risk mining areas, in accordance with the DRC Conflict-Free norms. In 2023, our suppliers have to provide the RMI_CMRT_6:31 for Ta, Sn, Au and W and RMI_EMRT_1:2 for Co and Mica on our green supplier platform to keep in line with the policy of responsible minerals sourcing. Meanwhile, the 30th REACH Candidate List of SVHC has been included in 2024, with the number of controlled substances updated to 240.

Our products comply with international standards, and our response measures have not significantly impacted our financial performance.

We not only pay attention to the safety in our environment, but also enhance the environmental safety level with the suppliers through audits and assistance. So far, we have assisted several suppliers in carrying out the greenhouse gas inventory, and encouraged them to adopt measures for energy saving and carbon reduction.

(V) Industrial waste

To effectively clean out waste and pretect 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.

Year	2022	2023
Industrial waste	16.5090 tons	24.4840 tons
Recyclable waste	16.9376 tons	19.8626 tons
Total	33.4466 tons	44.3466 tons

(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.

Year	2022	2023
Water consumption	9,875 kiloliters	9,126 kiloliters

V. Cyber security management

(I) Cyber security policy

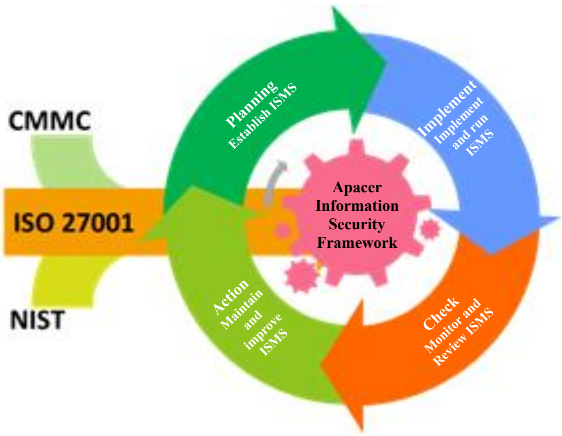
The Company released an information security policy applicable to the employees and suppliers of the Company in 2019 to protect the information assets by ensuring their confidentiality, availability and integrity and to boost the confidence of customers in the Company's information security. The information 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.

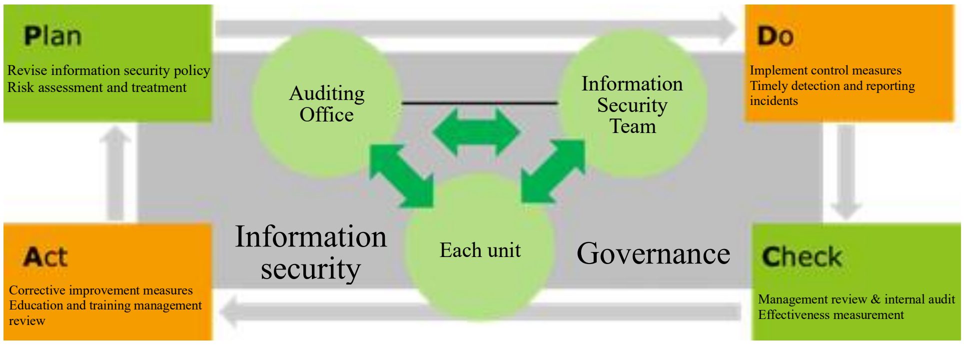


2. Operation of the information security organization and relevant control operations

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) Policy: 6 ISMS documents were developed and amended and then released.
   (2) Training and announcement: four information security-related announcements were made. All new employees underwent information security training.
   (3) 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.
   (4) Latest reporting date: Reporting of the implementation to the Board of Directors on December 14, 2023.
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
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

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, carried out 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.

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. Three meals a day

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 three meals a day.

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 any child at Apacer is entitled to

a maternity allowance of TWD 36,000 for each child.

C. A^+Health

a. Annual health examination

To strictly look after the health of employees, we provide 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 two 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 Better Results, Develop Together with Partners". Our education and training develops 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.

If any employee performs any work of a special nature that is dangerous or requires heavy physical labor, the Company 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 Sub-paragraph 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 2023.

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 During 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):

Our 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.	07/01/2023~07/01/2024	Commercial fire insurance	None
Insurance contract	South China Insurance Co., Ltd.	01/01/2024~12/31/2024	Cargo insurance	None
Insurance contract	Hotai Insurance Co., Ltd.	01/01/2024~12/31/2024	Product liability insurance and public accident liability insurance	None
Insurance contract	Fubon Property and Casualty Insurance Co., Ltd.	01/01/2024~12/31/2024	Directors and Managers Liability Insurance	None

Six. Financial overview

I. Condensed balance sheet and comprehensive income statement over the past five years

(I) Condensed balance sheet and consolidated income statement information - IFRS

(1) Condensed balance sheet (consolidated financial statement)

Unit: TWD 1,000

Item \ Year		Financial information of the last five years (Note 1) 2019	2020	2021	2022	2023	Financial information of 2024, as of March 31 (Note 2)
Current assets		3,158,606	2,959,170	3,765,156	4,598,725	4,994,176	-
Long-term investments		41,944	37,761	27,420	30,213	36,522	-
Property, plant and equipment		876,060	871,958	861,356	917,402	915,689	-
Right-of-use assets.		35,110	28,684	32,455	46,445	41,516	-
Intangible assets		62,278	53,225	43,147	245,556	225,324	-
Other assets		103,146	100,301	148,534	183,695	158,285	-
Total assets		4,277,194	4,051,099	4,878,068	6,022,036	6,371,512	-
Current liabilities	Before allocation	1,421,922	1,191,101	1,713,603	1,609,246	1,819,180	-
	After allocation	1,679,211	1,396,786	2,007,875	2,014,117	1,819,180	-
Non-current liabilities		48,876	50,316	72,595	108,881	90,261	-
Total liabilities	Before allocation	1,470,798	1,241,417	1,786,198	1,718,127	1,909,441	-
	After allocation	1,728,087	1,447,102	2,080,470	2,122,998	1,909,441	-
Equity attributed to stockholders of the company							
Share capital		1,008,978	1,008,978	1,018,243	1,226,882	1,226,882	-
Capital reserve		359,910	361,519	389,146	924,322	925,825	-
Retained earnings	Before allocation	1,515,937	1,548,000	1,819,067	2,100,373	2,245,138	-
	After allocation	1,258,648	1,342,315	1,524,795	1,695,502	2,245,138	-
Other equities		(78,579)	(108,958)	(134,722)	(87,389)	(89,484)	-
Treasury shares		-	-	-	-	-	-
Total equity of stockholders of the parent company	Before allocation	2,806,246	2,809,539	3,091,734	4,164,188	4,308,361	-
	After allocation	2,548,957	2,603,854	2,797,462	3,759,317	4,308,361	-
Non-controlling interests		150	143	136	139,721	153,710	-
Total equity	Before allocation	2,806,396	2,809,682	3,091,870	4,303,909	4,462,071	-
	After allocation	2,549,107	2,603,997	2,797,598	3,899,038	4,462,071	-

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

Note 2: The 2024 Q1 financial data have not yet been completely reviewed by CPAs as of the publication date of the annual report.

(2) **Condensed Comprehensive Income Statement (Consolidated Financial Statements)**

Unit: TWD 1,000

Item \ Year	2019	2020	2021	2022	2023	2024 as of March 31 financial information (Note 2)
	Financial information of the last five years (Note 1)					
Operating revenue	7,485,821	7,152,222	8,682,393	8,797,035	7,631,446	-
Gross operating profit	1,400,243	1,125,902	1,452,884	1,688,414	1,778,642	-
Operating income	483,595	345,419	573,060	694,122	710,534	-
Non-operating income and expenses	(4,695)	25,250	4,213	19,353	37,855	-
Net profit before tax	478,900	370,669	577,273	713,475	748,389	-
Net profit of continuing operations for the period	376,629	290,460	485,781	576,991	604,712	-
Losses from suspended operations	-	-	-	-	-	-
Net profit for the current period	376,629	290,460	485,781	576,991	604,712	-
Other comprehensive income for the period (net income after taxes)	(12,883)	(31,494)	(25,859)	54,844	(5,505)	-
Total consolidated income for the current period	363,746	258,966	459,922	631,835	599,207	-
Net profit for the period attributed to owners of the parent	376,642	290,469	485,788	559,126	553,046	-
Net profit for the period attributed to non-controlling interests	(13)	(9)	(7)	17,865	51,666	-
Total comprehensive income attributed to owners of the parent	363,769	258,973	459,929	613,970	547,541	-
Total comprehensive income attributed to non-controlling interests	(23)	(7)	(7)	17,865	51,666	-
Earnings per share (TWD)	3.73	2.88	4.81	5.23	4.51	-

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

Note 2: The 2024 Q1 financial data have not yet been completely reviewed by CPAs as of the publication date of the annual report.

(II) Condensed balance sheet and consolidated income statement information - IFRS

(1) Condensed balance sheet (individual financial statement)

Unit: TWD 1,000

Item \ Year		Financial information of the last five years (Note 1)				
		2019	**2020**	**2021**	**2022**	**2023**
Current assets		2,821,478	2,590,942	3,361,666	3,511,772	4,001,554
Long-term investments		356,840	385,715	398,202	892,068	967,639
Property, plant and equipment		872,214	868,620	858,517	854,215	853,020
Right-of-use assets.		14,012	14,889	26,490	18,700	13,043
Intangible assets		62,130	53,099	43,043	39,156	33,705
Other assets		89,473	91,362	140,922	169,241	136,700
Total assets		4,216,147	4,004,627	4,828,840	5,485,152	6,005,661
Current liabilities	Before allocation	1,369,607	1,156,402	1,678,356	1,290,917	1,668,583
	After allocation	1,626,896	1,362,087	1,972,628	1,695,788	1,668,583
Non-current liabilities		40,294	38,686	58,750	30,047	28,717
Total liabilities	Before allocation	1,409,901	1,195,088	1,737,106	1,320,964	1,697,300
	After allocation	1,667,190	1,400,773	2,031,378	1,725,835	1,697,300
Share capital		1,008,978	1,008,978	1,018,243	1,226,882	1,226,882
Capital reserve		359,910	361,519	389,146	924,322	925,825
Retained earnings	Before allocation	1,515,937	1,548,000	1,819,067	2,100,373	2,245,138
	After allocation	1,258,648	1,342,315	1,524,795	1,695,502	2,245,138
Other equities		(78,579)	(108,958)	(134,722)	(87,389)	(89,484)
Treasury shares		-	-	-	-	-
Total equity of stockholders of the parent company	Before allocation	2,806,246	2,809,539	3,091,734	4,164,188	4,308,361
	After allocation	2,548,957	2,603,854	2,797,462	3,759,317	4,308,361
Non-controlling interests		-	-	-	-	-
Total equity	Before allocation	2,806,246	2,809,539	3,091,734	4,164,188	4,308,361
	After allocation	2,548,957	2,603,854	2,797,462	3,759,317	4,308,361

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

(2) Condensed consolidated income statement (individual financial statement)

Unit: TWD 1,000

Item \ Year	Financial information of the last five years (Note 1)				
	2019	**2020**	**2021**	**2022**	**2023**
Operating revenue	7,151,398	6,890,658	8,422,696	8,224,555	6,627,663
Gross operating profit	1,105,823	897,595	1,215,209	1,343,273	1,220,246
Operating income	440,924	306,112	531,032	583,819	464,272
Non-operating income and expenses	25,733	54,212	35,543	85,080	178,007
Net profit before tax	466,657	360,324	566,575	668,899	642,279
Net profit of continuing operations for the period	376,642	290,469	485,788	559,126	553,046
Losses from suspended operations	-	-	-	-	-
Net profit for the current period	376,642	290,469	485,788	559,126	553,046
Other comprehensive income for the period (net income after taxes)	(12,873)	(31,496)	(25,859)	54,844	(5,505)
Total consolidated income for the current period	363,769	258,973	459,929	613,970	547,541
Earnings per share (TWD)	3.73	2.88	4.81	5.23	4.51

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

(IV) Accountants' names and review opinions over the last five years

Accountants' names that have reviewed and given their opinions over the last five years:

Year	Signing accountant name	Audit Opinions
2019	Philip Tang, Grace Chen	Unqualified opinion
2020	Philip Tang, Grace Chen	Unqualified opinion
2021	Philip Tang, Shih Wei-ming	Unqualified opinion
2022	Philip Tang, Shih Wei-ming	Unqualified opinion
2023	Philip Tang, Shih Wei-ming	Unqualified opinion

II. Financial analysis of the last five years

(I) Financial Analysis - Adoption of International Financial Reporting Standards (merged)

Item	Year	Financial information of the last five years (Note 1)					Until 2024 March 31 financial information (Note 2)
		2019	2020	2021	2022	2023	
Financial structure	Debt to assets ratio (%)	34.39	30.64	36.61	28.53	29.97	-
	Long-term capital to real estate, plant and equipment ratio Plant, and equipment ratio (%)	325.92	328.00	367.38	481.01	497.15	-
Repayment ability	Current ratio (%)	222.14	248.44	219.72	285.77	274.53	-
	Quick ratio (%)	154.75	180.22	131.47	222.39	190.42	-
	Interest protection ratio	95.16	124.39	169.89	105.13	56.10	-
Operational capacity	Receivables turnover ratio (times)	7.20	8.25	8.01	8.48	10.09	-
	Average collection turnover	51	44	46	43	36	-
	Inventory turnover rate (times)	5.72	6.95	6.32	5.82	4.79	-
	Payable turnover rate (times)	6.48	7.36	9.14	8.95	6.29	-
	Average days in sales	64	53	58	63	76	-
	Property, plant and equipment Turnover rate (times)	8.49	8.18	10.01	9.89	8.33	-
	Total asset turnover rate (times)	1.75	1.72	1.94	1.61	1.23	-
Profitability	Return on assets (%)	8.9	7.03	10.94	10.69	9.93	-
	Return on equity (%)	13.69	10.34	16.46	15.60	13.80	-
	Ratio of net profit before tax to paid-in capital Ratio (%)	47.46	36.74	56.69	58.15	61.00	-
	Net profit margin (%)	5.03	4.06	5.59	6.56	7.92	-
	Earnings per share (TWD)	3.73	2.88	4.81	5.23	4.51	-
Cash flow	Cash flow ratio (%)	63.33	28.31	(18.75)	111.68	20.99	-
	Cash flow adequacy ratio (%)	99.20	94.42	72.91	164.26	110.53	-
	Cash reinvestment ratio (%)	21.42	2.60	(15.57)	33.91	(0.5)	-
Leverage	Operational leverage	2.36	2.84	2.09	1.92	2.05	-
	Financial leverage	1.01	1.01	1.01	1.01	1.02	-

Increases or decreases of more than 20% in the financial ratio over the past two years are explained below:

1. Repayment ability:
   The decrease in "interest protection ratio" was due to increase in interest expenses as a result of the higher interest rate caused by the rate rise policy in the US.
2. Operational capacity:
   The decrease in "payables turnover rate (times)" was due to the substantial increase in accounts payable at the end of the period due to inventory preparation in advance.
   The decrease in "total asset turnover rate (times)" was due to the significant delay in demand for various products and the decline in prices this year, resulting in a decrease in sales revenue.
3. Profitability:
   The increase in "net profit margin" was due to the increase in gross operating profit and non-operating revenue which resulted in the net profit after tax being approximately the same as last year, and the decrease in sales revenue this year compared to last year.
4. Cash flow:
   The decrease in "cash flow ratio", "cash flow adequacy ratio" and "cash reinvestment ratio" was due to the increase in inventory purchases as a result of the adjustment to inventory level according to the market conditions, which led to a significant decrease in cash flow from operating activities.

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

Note 2: The 2024 Q1 financial data have not yet been completely reviewed by CPAs as of the publication date of the annual report.

1. Financial structure:
   (1) Debt to assets ratio = Total liabilities / Total assets
   (2) Long-term capital to property, plants and equipment = (total equity + non-current liabilities) / net property, plant and equipment
2. Debt paying ability:
   (1) Current ratio = Current assets / Current liabilities
   (2) Quick ratio = (Current assets - Inventory - Prepaid expenses) / Current liabilities
   (3) Interest protection ratio = Net income before tax and interest expense/interest expense of the current period
3. Operational capacity:
   (1) Receivables (including accounts receivable and bills arising from operations) turnover = Net sales / Average balance of average receivables for each period (including accounts receivable and bills arising from operations)
   (2) Average collection turnover = 365/ Receivables turnover ratio
   (3) Inventory turnover rate = Cost of goods sold / Average inventory value
   (4) Payables (including accounts payable and bills arising from operations) turnover = Net sales / Average balance of payables for each period (including accounts payable and bills arising from operations)
   (5) Average days in sales = 365 / Inventory turnover rate
   (6) Turnover of real estate, plant and equipment = Net sales / Average net value of real estate, plant and equipment
   (7) Total asset turnover rate = Net sales / Gross average assets
4. Profitability:
   (1) Return on assets = (Profits or losses after tax + interest expenses × (1-tax rate)) / Average total assets
   (2) Return on equity = Profits or losses after tax / Average total equity
   (3) Net profit margin = Profits or losses after tax / Net sales
   (4) Earnings per share = (attributable the shareholder's profit and loss of the parent company - Preferred dividends) / Weighted average number of shares issued
5. Cash flow:
   (1) Cash flow ratio = Net cash flow from operating activities / Current liabilities
   (2) Net cash flow adequacy ratio = Net cash flow from operating activities over the last five years / (Capital expenditure + Inventory increase + Cash dividend) over the last five years
   (3) Cash reinvestment ratio = (Net cash flow from operating activities - Cash dividends) / (Gross value of real estate, plant and equipment + Long-term investments + Other non-current assets + Working capital)
6. Leverage:
   (1) Operating leverage = (Net operating income - Variable operating costs and expenses) / Operating profits
   (2) Financial Leverage = Operating income / (Operating income - Interest expenses)

(I) Financial Analysis – Based on International Financial Reporting Standards (IFRS; Individual)

Item		Financial information of the last five years (Note 1)				
	Year	2019	2020	2021	2022	2023
Financial structure	Debt to assets ratio (%)	33.44	29.84	35.97	24.08	28.26
	Long-term capital to Property, plant and equipment ratio (%)	326.36	327.90	366.97	491.00	508.44
Repayment ability	Current ratio (%)	206.01	224.05	200.30	272.04	239.82
	Quick ratio (%)	138.63	156.31	112.81	212.91	156.22
	Interest protection ratio	102.45	135.50	178.72	108.59	53.04
Operational capacity	Receivables turnover ratio (times)	7.40	8.23	8.03	8.15	9.28
	Average collection turnover	49	44	45	45	39
	Inventory turnover rate (times)	5.91	7.11	6.48	6.36	5.20
	Payable turnover rate (times)	6.44	7.36	9.15	9.20	6.28
	Average days in sales	62	51	56	57	70
	Property, plant and equipment turnover (times)	8.15	7.92	9.75	9.60	7.76
	Total asset turnover rate (times)	1.69	1.68	1.91	1.59	1.15
Profitability	Return on assets (%)	9.01	7.12	11.06	10.94	9.80
	Return on equity (%)	13.69	10.34	16.46	15.41	13.06
	Net profit before tax to paid-in capital ratio (%)	46.25	35.71	55.64	54.52	52.35
	Net profit margin (%)	5.27	4.22	5.77	6.80	8.34
	Earnings per share (TWD)	3.73	2.88	4.81	5.23	4.51
Cash flow	Cash flow ratio (%)	53.18	24.52	(20.74)	123.52	19.84
	Cash flow adequacy ratio (%)	100.63	91.17	67.97	147.17	115.17
	Cash reinvestment ratio (%)	15.72	0.86	(16.46)	29.32	(1.61)
Leverage	Operational leverage	2.19	2.68	1.97	1.91	2.22
	Financial leverage	1.01	1.01	1.01	1.01	1.03

Increases or decreases of more than 20% in the financial ratio over the past two years are explained below:

1. Repayment ability:
   The increase in "quick ratio" was due to a decrease in cash and cash equivalents as a result of inventory preparation in advance this year.
   The decrease in “interest protection ratio” was due to increase in interest expenses as a result of the higher interest rate caused by the rate rise policy in the US.
2. Operational capacity:
   The decrease in "payables turnover rate (times)" was due to the substantial increase in accounts payable at the end of the period due to inventory preparation in advance.
   The increase in "average days in sales" was due to the substantial increase in inventory at the end of the period due to inventory preparation in advance.
   The decrease in "total asset turnover rate (times)" was due to the significant delay in demand for various products and the decline in prices this year, resulting in a decrease in sales revenue.
3. Profitability:
   The increase in "net profit margin" was due to the increase in gross operating profit and non-operating revenue which resulted in the net profit after tax being approximately the same as last year, and the decrease in sales revenue this year compared to last year.
4. Cash flow:
   The decrease in “cash flow ratio”, “cash flow adequacy ratio” and “cash reinvestment ratio” was due to the increase in inventory purchases as a result of the adjustment to inventory level according to the market conditions, which led to a significant decrease in cash flow from operating activities.

Note 1: The financial information in the above table has been examined/reviewed by our accountants. The information can be referenced from public resources.

1. Financial structure:
    (1) Debt to assets ratio = Total liabilities / Total assets
    (2) Long-term capital to property, plants and equipment = (total equity + non-current liabilities) / net property, plant and equipment
2. Debt paying ability:
    (1) Current ratio = Current assets / Current liabilities
    (2) Quick ratio = (Current assets - Inventory - Prepaid expenses) / Current liabilities
    (3) Interest protection ratio = Net income before tax and interest expense/interest expense of the current period
3. Operational capacity:
    (1) Receivables (including accounts receivable and bills arising from operations) turnover = Net sales / Average balance of average receivables for each period (including accounts receivable and bills arising from operations)
    (2) Average collection turnover = 365/ Receivables turnover ratio
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    (6) Turnover of real estate, plant and equipment = Net sales / Average net value of real estate, plant and equipment
    (7) Total asset turnover rate = Net sales / Gross average assets
4. Profitability:
    (1) Return on assets = (Profits or losses after tax + interest expenses × (1-tax rate)) / Average total assets
    (2) Return on equity = profits or losses after tax / average total equity
    (3) Net profit margin = Profits or losses after tax / Net sales
    (4) Earnings per share = (attributable the shareholder's profit and loss of the parent company - Preferred dividends) / Weighted average number of shares issued
5. Cash flow:
    (1) Cash flow ratio = Net cash flow from operating activities / Current liabilities
    (2) Net cash flow adequacy ratio = Net cash flow from operating activities over the last five years / (Capital expenditure + Inventory increase + Cash dividend) over the last five years
    (3) Cash reinvestment ratio = (Net cash flow from operating activities - Cash dividends) / (Gross value of real estate, plant and equipment + Long-term investments + Other non-current assets + Working capital)
6. Leverage:
    (1) Operating leverage = (Net operating income - Variable operating costs and expenses) / Operating profits
    (2) Financial Leverage = Operating income / (Operating income - Interest expenses)

III. Auditor Committee's review report of the most recent annual financial report

Audit Committee’s Review Report

The board of directors drafted the business report, financial statements and proposal on profit distribution for FY 2023. An audit report for the financial statements was prepared jointly by Philip Tang and Shih Wei-ming, certified public accountants (CPAs) of KPMG Taiwan. The review of the business report, financial statements and proposal on profit distribution above did not find any inconsistencies. The review report is thus presented for further examination pursuant to Article 14-4 of the Securities and Exchange Act and Article 219 of the Company Act.

To

2024 Shareholders' Meeting of Apacer Technology Inc.

Audit Committee Convener: Max Wu ____________________

February 23, 2024

IV. The most recent annual financial report

(I) Consolidated financial report

Representation Letter

The entities that are required to be included in the combined financial statements of Apacer Technology Inc. as of and for the year ended December 31, 2023 under the Criteria Governing the Preparation of Affiliation Reports, Consolidated Business Reports, and Consolidated Financial Statements of Affiliated Enterprises are the same as those included in the consolidated financial statements prepared in conformity with International Financial Reporting Standards No. 10 "Consolidated Financial Statements" endorsed and issued into effect by the Financial Supervisory Commission. In addition, the information required to be disclosed in the combined financial statements is included in the consolidated financial statements. Consequently, Apacer Technology Inc. and Subsidiaries do not prepare a separate set of combined financial statements.

Hereby declare

Apacer Technology Inc.
I-Shih Chen
Chairman
February 23, 2024

Independent Auditors' Report

To the Board of Directors of Apacer Technology Inc.:

Opinion

We have audited the consolidated financial statements of Apacer Technology Inc. and its subsidiaries (the "Group"), which comprise the consolidated balance sheets as of December 31, 2023 and 2022, the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of material accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as of December 31, 2023 and 2022, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and with the International Financial Reporting Standards("IFRSs"), International Accounting Standards("IAS"), interpretations developed by the International Financial Reporting Interpretations commitee("IFRIC") or the former standing Interpretations committee("SIC") endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China.

Basis for Opinion

We conducted our audits in accordance with the Regulations Governing Financial Statement Audit and Attestation Engagements of Certified Public Accountants and Standards on Auditing of the Republic of China. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Group in accordance with The Norm of Professional Ethics for Certified Public Accountant of the Republic of China, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis of our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters for the Group' consolidated financial statements for the year ended December 31, 2023 are stated as follows:

1. Valuation of inventories

   Please refer to notes 4(h), 5(a) and 6(e) for the accounting policy on inventories, "Critical accounting judgments and key sources of estimation uncertainty" for estimation uncertainty of inventory valuation, and "Inventories" for the related disclosures, respectively, of the notes to consolidated financial statements.

   <u>Description of key audit matter:</u>

   The Group's inventories are measured at the lower of cost and net realizable value. Management is required to make judgments and estimates in determining the net realizable value of inventories on the reporting date. The market prices of the Group's main raw materials, constituting the majority amount of product cost, fluctuate rapidly and the life cycle of certain products of the Group are short, which could possibly result in a price decline and obsolescence of inventories, wherein the inventories cost may exceed its net realizable value, as the Group fails to timely respond to market changes. Therefore, the valuation of inventories has been identified as one of the key audit matters.

   <u>How the matter was addressed in our audit:</u>

   In relation to the key audit matters above, our principal audit procedures included obtaining and understanding the Group's accounting policy of valuation of inventories, performing a retrospective test to evaluate the reasonableness of the accounting policy of valuation of inventories; as well as performing a sample test of the estimated selling price provided by Management to assess the reasonableness of the net realizable value and allowance for inventory valuation loss.

2. Assessment of impairment of goodwill

   Please refer to notes 4(m), 5(b) and 6(j) for the accounting policy on impairment of non-financial assets, "Critical accounting judgments and key sources of estimation uncertainty" for estimation uncertainty of impairment of goodwill, and "Impairment test on Goodwill" for the related disclosures, respectively, of the notes to consolidated financial statements.

   <u>Description of key audit matter:</u>

   Goodwill arising from business combination is subject to impairment test annually or at the time there are indications that goodwill may have been impaired. The assessment of the recoverable amount of the cash- generating unit of goodwill involves management's judgment and estimation. Accordingly, the assessment of impairment of goodwill has been identified as one of the key audit matters.

   <u>How the matter was addressed in our audit:</u>

   In relation to the key audit matter above, our principal audit procedures included obtaining the assessment of goodwill impairment provided by the management; assessing the appropriateness of the estimation base and key assumptions, including the discount rate, expected sales growth rate and future cash flow projections, used by the management in measuring the recoverable amount; performing a sensitivity analysis of key assumptions and results; and assessing the adequacy of the Group's disclosures with respect to the related information.

Other Matter

Apacer Technology Inc. has prepared its parent-company-only financial statements as of and for the years ended December 31, 2023 and 2022, on which we have issued an unmodified audit opinion.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and with the IFRSs, IASs, IFRIC, SIC endorsed an issued into effect by the Financial Supervisory Commission of the Republic of China, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group’s ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance (including members of the Audit Committee) are responsible for overseeing the Group’s financial reporting process.

Auditor’s Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor’s report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Standards on Auditing of the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the Standards on Auditing of the Republic of China, we exercised professional judgment and professional skepticism throughout the audit. We also:

1. Identified and assessed the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, designed and performed audit procedures responsive to those risks, and obtained audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

2. Obtained an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group’s internal control.

3. Evaluated the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

4. Concluded on the appropriateness of management’s use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group’s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor’s report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor’s report. However, future events or conditions may cause the Group to cease to continue as a going concern.

5. Evaluated the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

6. Obtained sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remained solely responsible for our audit opinion.

We communicated with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identified during our audit.

We also provided those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determined those matters that were of most significance in the audit of the consolidated financial statements for the year ended December 31, 2023 and are therefore the key audit matters. We described these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determined that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audit resulting in this independent auditors' report are Tzu-Chieh Tang and Wei-Ming Shih.

KPMG

Taipei, Taiwan (Republic of China)
February 23, 2024

The accompanying consolidated financial statements are intended only to present the consolidated financial position, financial performance and cash flows in accordance with the accounting principles and practices generally accepted in the Republic of China and not those of any other jurisdictions. The standards, procedures and practices to audit such consolidated financial statements are those generally accepted and applied in the Republic of China.
The independent auditors' audit report and the accompanying consolidated financial statements are the English translation of the Chinese version prepared and used in the Republic of China. If there is any conflict between, or any difference in the interpretation of the English and Chinese language independent auditors' audit report and consolidated financial statements, the Chinese version shall prevail.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Balance Sheets

December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars)

		December 31, 2023		December 31, 2022	
	Assets	**Amount**	**%**	**Amount**	**%**
	Current assets:				
1100	Cash and cash equivalents (note 6(a))	$ 1,061,474	17	1,419,376	23
1110	Financial assets at fair value through profit or loss－current (note 6(b))	593	-	980	-
1170	Notes and accounts receivable, net (notes 6(d) and (t))	775,483	12	735,899	12
1180	Accounts receivable from related parties (notes 6(d), (t) and 7)	558	-	377	-
1310	Inventories (note 6(e))	1,490,481	23	955,484	16
1476	Other financial assets－current (note 6(a))	1,567,650	25	1,380,623	23
1479	Other current assets	97,937	1	105,986	2
	Total current assets	4,994,176	78	4,598,725	76
	Non-current assets:				
1517	Financial assets at fair value through other comprehensive income－non-current (note 6(c))	35,171	1	29,769	1
1550	Investments accounted for using equity method (note 6(f))	1,351	-	444	-
1600	Property, plant and equipment (notes 6(h) and 8)	915,689	14	917,402	15
1755	Right-of-use assets (note 6(i))	41,516	1	46,445	1
1780	Intangible assets (notes 6(g) and (j))	225,324	4	245,556	4
1840	Deferred income tax assets (note 6(p))	149,142	2	175,117	3
1980	Other financial assets－non-current	6,948	-	5,842	-
1990	Other non-current assets	2,195	-	2,736	-
	Total non-current assets	1,377,336	22	1,423,311	24
	Total assets	$ 6,371,512	100	6,022,036	100

		December 31, 2023		December 31, 2022	
	Liabilities and Equity	**Amount**	**%**	**Amount**	**%**
	Current liabilities:				
2100	Short-term borrowings (note 6(k))	$ 61,410	1	92,145	2
2120	Financial liabilities at fair value through profit or loss－current (note 6(b))	70	-	1,012	-
2170	Notes and accounts payable	747,199	12	504,327	8
2180	Accounts payable to related parties (note 7)	395,757	6	214,345	4
2200	Other payables (notes 6(u) and 7)	427,860	7	452,284	8
2230	Current income tax liabilities	85,625	2	110,864	2
2250	Provisions－current (note 6(n))	9,494	-	10,544	-
2280	Lease liabilities－current (note 6(m))	19,688	-	15,659	-
2300	Other current liabilities (note 6(t))	70,849	1	206,050	3
2322	Current portion of long-term debt (notes 6(l) and 8)	1,228	-	2,016	-
	Total current liabilities	1,819,180	29	1,609,246	27
	Non-current liabilities:				
2540	Long-term debt (notes 6(l) and 8)	22,351	-	28,108	1
2570	Deferred income tax liabilities (note 6(p))	21,064	-	22,894	-
2580	Lease liabilities－non-current (note 6(m))	22,597	-	31,339	1
2640	Net defined benefit liabilities (note 6(o))	24,249	1	19,982	-
2645	Guarantee deposits	-	-	6,558	-
	Total non-current liabilities	90,261	1	108,881	2
	Total liabilities	1,909,441	30	1,718,127	29
	Equity attributable to shareholders of the Company (note 6(q)):				
3100	Common stock	1,226,882	19	1,226,882	20
3200	Capital surplus	925,825	15	924,322	15
3300	Retained earnings	2,245,138	35	2,100,373	35
3400	Other equity	(89,484)	(1)	(87,389)	(1)
	Total equity attributable to shareholders of the Company	4,308,361	68	4,164,188	69
36XX	Non-controlling interests (notes 6(g) and (q))	153,710	2	139,721	2
	Total equity	4,462,071	70	4,303,909	71
	Total liabilities and equity	$ 6,371,512	100	6,022,036	100

See accompanying notes to the consolidated financial statements.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Statements of Comprehensive Income

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars, Except for Earnings Per Share)

		2023		2022	
		Amount	%	Amount	%
4000	**Revenue (notes 6(t), 7 and 14)**	$ 7,631,446	100	8,797,035	100
5000	**Cost of revenue (notes 6(e), (h), (i), (j), (m), (n), (o), (r), 7 and 12)**	(5,852,804)	(77)	(7,108,621)	(81)
5900	**Gross profit**	1,778,642	23	1,688,414	19
6000	**Operating expenses (notes 6(d), (h), (i), (j), (m), (n), (o), (r), (u), 7 and 12):**				
6100	Selling expenses	(616,833)	(8)	(553,021)	(6)
6200	Administrative expenses	(262,906)	(3)	(259,710)	(3)
6300	Research and development expenses	(188,773)	(3)	(165,679)	(2)
6450	Reversal of (recognized) expected credit losses	404	-	(15,882)	-
6000	**Total operating expenses**	(1,068,108)	(14)	(994,292)	(11)
6900	**Operating income**	710,534	9	694,122	8
7000	**Non-operating income and loss (notes 6(f), (h), (j), (m) and (v)):**				
7100	Interest income	45,211	1	11,009	-
7020	Other gains and losses, net	6,822	-	16,116	-
7050	Finance costs	(13,582)	-	(6,852)	-
7770	Share of losses of associates	(596)	-	(920)	-
	Total non-operating income and loss	37,855	1	19,353	-
7900	**Income before income tax**	748,389	10	713,475	8
7950	**Less: income tax expenses (note 6(p))**	(143,677)	(2)	(136,484)	(1)
	Net income	604,712	8	576,991	7
	Other comprehensive income (notes 6(o), (q) and (w)):				
8310	**Items that will not be reclassified subsequently to profit or loss:**				
8311	Remeasurements of defined benefit plans	(4,262)	-	20,565	-
8316	Unrealized gains from investments in equity instruments measured at fair value through other comprehensive income	1,652	-	3,713	-
8349	Less: income tax related to items that will not be reclassified subsequently to profit or loss	852	-	(4,113)	-
		(1,758)	-	20,165	-
8360	**Items that may be reclassified subsequently to profit or loss:**				
8361	Exchange differences on translation of foreign operations	(3,747)	-	34,679	-
8399	Less: income tax related to items that may be reclassified subsequently to profit or loss	-	-	-	-
		(3,747)	-	34,679	-
	Other comprehensive income for the year, net of income tax	(5,505)	-	54,844	-
8500	**Total comprehensive income for the year**	**$ 599,207**	**8**	**631,835**	**7**
8600	**Net income attributable to:**				
8610	Shareholders of the Company	$ 553,046	7	559,126	7
8620	Non-controlling interests	51,666	1	17,865	-
		$ 604,712	**8**	**576,991**	**7**
8700	**Total comprehensive income attributable to:**				
8710	Shareholders of the Company	$ 547,541	7	613,970	7
8720	Non-controlling interests	51,666	1	17,865	-
		$ 599,207	**8**	**631,835**	**7**
	Earnings per share (in New Taiwan dollars) (note 6(s)):				
9750	Basic earnings per share	**$**	**4.51**		**5.23**
9850	Diluted earnings per share	**$**	**4.46**		**5.11**

See accompanying notes to the consolidated financial statements.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Statements of Changes in Equity

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars)

	Attributable to shareholders of the Company												
			Retained earnings				Total other equity						
	Common stock	Capital surplus	Legal reserve	Special reserve	Unappropriated earnings	Total	Exchange differences on translation of foreign operations	Unrealized gains (losses) on financial assets measured at fair value through other comprehensive income	Unearned share-based employee compensation	Total	Total equity of the Company	Non-controlling interests	Total equity
Balance at January 1, 2022	$ 1,018,243	389,146	410,715	108,958	1,299,394	1,819,067	(74,366)	(51,415)	(8,941)	(134,722)	3,091,734	136	3,091,870
Capital increase in cash (note 6(q))	110,000	253,000	-	-	-	-	-	-	-	-	363,000	-	363,000
Appropriation of earnings:													
Legal reserve	-	-	47,675	-	(47,675)	-	-	-	-	-	-	-	-
Special reserve	-	-	-	16,825	(16,825)	-	-	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(294,272)	(294,272)	-	-	-	-	(294,272)	-	(294,272)
Net income in 2022	-	-	-	-	559,126	559,126	-	-	-	-	559,126	17,865	576,991
Other comprehensive income in 2022	-	-	-	-	16,452	16,452	34,679	3,713	-	38,392	54,844	-	54,844
Total comprehensive income in 2022	-	-	-	-	575,578	575,578	34,679	3,713	-	38,392	613,970	17,865	631,835
Issuance of new shares in exchange for other company’s shares	98,639	282,176	-	-	-	-	-	-	-	-	380,815	121,720	502,535
Compensation cost arising from restricted stock issued to employees	-	-	-	-	-	-	-	-	8,941	8,941	8,941	-	8,941
Balance at December 31, 2022	1,226,882	924,322	458,390	125,783	1,516,200	2,100,373	(39,687)	(47,702)	-	(87,389)	4,164,188	139,721	4,303,909
Appropriation of earnings:													
Legal reserve	-	-	57,558	-	(57,558)	-	-	-	-	-	-	-	-
Reversal of special reserve	-	-	-	(38,392)	38,392	-	-	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(404,871)	(404,871)	-	-	-	-	(404,871)	-	(404,871)
Changes in equity of associates accounted for using equity method	-	1,503	-	-	-	-	-	-	-	-	1,503	-	1,503
Distribution of cash dividend by subsidiaries to non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	(37,677)	(37,677)
Net income in 2023	-	-	-	-	553,046	553,046	-	-	-	-	553,046	51,666	604,712
Other comprehensive income in 2023	-	-	-	-	(3,410)	(3,410)	(3,747)	1,652	-	(2,095)	(5,505)	-	(5,505)
Total comprehensive income in 2023	-	-	-	-	549,636	549,636	(3,747)	1,652	-	(2,095)	547,541	51,666	599,207
Balance at December 31, 2023	**$ 1,226,882**	**925,825**	**515,948**	**87,391**	**1,641,799**	**2,245,138**	**(43,434)**	**(46,050)**	**-**	**(89,484)**	**4,308,361**	**153,710**	**4,462,071**

See accompanying notes to the consolidated financial statements.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Statements of Cash Flows

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars)

	2023	2022
Cash flows from operating activities:		
Income before income tax	$ 748,389	713,475
Adjustments:		
Depreciation	55,928	52,657
Amortization	25,167	16,007
Recognized (reversal of) expected credit loss	(404)	15,882
Interest expense	13,582	6,852
Interest income	(45,211)	(11,009)
Share-based compensation cost	-	8,941
Share of loss of associates	596	920
Gain on disposal of property, plant and equipment	(711)	(7)
Impairment loss on non-financial assets	46	303
Subtotal	48,993	90,546
Changes in operating assets and liabilities:		
Changes in operating assets:		
Financial assets at fair value through profit or loss	387	3,502
Notes and accounts receivable	(39,180)	602,398
Accounts receivable from related parties	(181)	2,043
Inventories	(534,997)	769,467
Other current assets	8,724	(8,176)
Net changes in operating assets	(565,247)	1,369,234
Changes in operating liabilities:		
Financial liabilities at fair value through profit or loss	(942)	879
Notes and accounts payable	242,872	(201,810)
Accounts payable to related parties	181,412	(61,438)
Other payables	(24,330)	51,859
Provisions	(1,050)	320
Other current liabilities	(135,201)	24,419
Net defined benefit liabilities	5	6
Net changes in operating liabilities	262,766	(185,765)
Total changes in operating assets and liabilities	(302,481)	1,183,469
Total adjustments	(253,488)	1,274,015
Cash provided by operations	494,901	1,987,490
Interest received	44,130	9,326
Interest paid	(13,676)	(6,658)
Income taxes paid	(143,513)	(192,937)
Net cash provided by operating activities	381,842	1,797,221

See accompanying notes to the consolidated financial statements.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Consolidated Statements of Cash Flows (Continued)

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars)

	2023	2022
Cash flows from investing activities:		
Acquisition of financial assets at fair value through other comprehensive income	(3,750)	-
Proceeds from disposal of financial assets at fair value through profit or loss	-	137,726
Acquisition of subsidiary, net of cash received	-	248,556
Acquisition of property, plant and equipment	(33,766)	(29,118)
Proceeds from disposal of property, plant and equipment	1,019	52
Acquisition of intangible assets	(3,002)	(5,946)
Increase in other financial assets－current	(187,027)	(1,268,183)
Decrease (increase) in other financial assets－non-current	(1,106)	342
Increase in other non-current assets	(1,139)	(885)
Net cash used in investing activities	(228,771)	(917,456)
Cash flows from financing activities:		
Decrease in short-term borrowings	(30,735)	(164,834)
Repayment of long-term debt	(6,545)	(22,716)
Decrease in guarantee deposits	(6,558)	(7,287)
Payment of lease liabilities	(20,956)	(17,965)
Cash dividends distributed to shareholders	(404,871)	(294,272)
Capital increase in cash	-	363,000
Distribution of cash dividend by subsidiaries to non-controlling interests	(37,677)	-
Net cash used in financing activities	(507,342)	(144,074)
Effect of foreign exchange rate changes	(3,631)	33,621
Net increase (decrease) in cash and cash equivalents	(357,902)	769,312
Cash and cash equivalents at beginning of year	1,419,376	650,064
Cash and cash equivalents at end of year	**$ 1,061,474**	**1,419,376**

See accompanying notes to the consolidated financial statements.

(English Translation of Consolidated Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Notes to the Consolidated Financial Statements

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars, Unless Otherwise Specified)

1. Organization and business

Apacer Technology Inc. (the "Company") was incorporated on April 16, 1997 as a company limited by shares under the laws of the Republic of China ("R.O.C.") and registered under the Ministry of Economic Affairs, R.O.C. The address of the Company's registered office is 1F, No.32, Zhongcheng Rd., Tucheng Dist., New Taipei City, Taiwan. The Company and its subsidiaries (collectively the "Group") are engaged in the research and development, design, manufacturing, processing, maintenance and sales of memory modules and storage memory devices.

2. Authorization of the consolidated financial statements

These consolidated financial statements were authorized for issuance by the Board of Directors on February 23, 2024.

3. Application of new, revised or amended accounting standards and interpretations

(a) The impact of the International Financial Reporting Standards ("IFRSs") endorsed by the Financial Supervisory Commission, R.O.C. ("FSC") which have already been adopted.

The Group has initially adopted the following new amendments, which do not have a significant impact on its consolidated financial statements, from January 1, 2023:

- Amendments to IAS 1 "Disclosure of Accounting Policies"
- Amendments to IAS 8 "Definition of Accounting Estimates"
- Amendments to IAS 12 "Deferred Tax related to Assets and Liabilities arising from a Single Transaction"

The Group has initially adopted the following new amendments, which do not have a significant impact on its consolidated financial statements, from May 23, 2023:

- Amendments to IAS 12 "International Tax Reform－Pillar Two Model Rules"

(b) The impact of IFRS endorsed by the FSC but not yet effective

The Group assesses that the adoption of the following new amendments, effective for annual period beginning on January 1, 2024, would not have a significant impact on its consolidated financial statements:

- Amendments to IAS 1 "Classification of Liabilities as Current or Non-current"
- Amendments to IAS 1 "Non-current Liabilities with Covenants"
- Amendments to IAS 7 and IFRS 7 "Supplier Finance Arrangements"
- Amendments to IFRS 16 "Lease Liability in a Sale and Leaseback"

(c) The impact of IFRS issued by IASB but not yet endorsed by the FSC

The Group does not expect the following new and amended standards, which have yet to be endorsed by the FSC, to have a significant impact on its consolidated financial statements:

- Amendments to IFRS 10 and IAS 28 “Sale or Contribution of Assets Between an Investor and its Associate or Joint Venture”
- IFRS 17 “Insurance Contracts” and amendments to IFRS 17 “Insurance Contracts”
- Amendments to IAS 21 “Lack of Exchangeability”

4. Summary of material accounting policies:

The material accounting policies presented in the consolidated financial statements are summarized as follows. The following accounting policies were applied consistently throughout the periods presented in these financial statements.

(a) Statement of compliance

The Group’s accompanying consolidated financial statements have been prepared in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers (the “Regulations”) and the IFRSs, IASs, IFRIC Interpretations, and SIC Interpretations endorsed and issued into effect by the FSC (collectively as “Taiwan-IFRS Accounting Standards”).

(b) Basis of preparation

(i) Basis of measurement

The accompanying consolidated financial statements have been prepared on a historical cost basis except for the following items in the balance sheets:

1) Financial instruments measured at fair value through profit or loss (including derivative financial instruments);
2) Financial assets at fair value through other comprehensive income; and
3) Defined benefit liabilities are recognized as the present value of the defined benefit obligation less fair value of the plan assets and the effect of the asset ceiling mentioned in note 4(p).

(ii) Functional and presentation currency

The functional currency of each Group entity is determined based on the primary economic environment in which the entity operates. The Group’s consolidated financial statements are presented in New Taiwan dollars(NTD), which is the Company’s functional currency. Except when otherwise indicated, all financial information presented in NTD has been rounded to the nearest thousand.

(c) Basis of consolidation

(i) Principles of preparation of consolidated financial statements

The consolidated financial statements comprise the company and subsidiaries. Subsidiaries are entities controlled by the company. The Company controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

The financial statements of the subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases. Intra-group balances and transactions, and any unrealized profit and loss arising from intra-group transactions are eliminated in preparing the consolidated financial statements. Total comprehensive income of subsidiaries is attributed to the shareholders of the Company and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, financial statements of subsidiaries are adjusted to align their accounting policies with those adopted by the Company.

Changes in the Group’ s ownership interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions. The difference between the adjustment of the non- controlling interest and the fair value of the payment or receipt is recognized as equity and belongs to the Company.

(ii) List of subsidiaries in the consolidated financial statements

The subsidiaries included in the consolidated financial statements were as follows:

			Percentage of Ownership		
Name of Investor	**Name of Investee**	**Main Business and Products**	**December 31, 2023**	**December 31, 2022**	**Note**
The Company	Apacer Memory America Inc. (AMA)	Sales of memory modules and storage memory devices	100.00%	100.00%	-
The Company	Apacer Technology B.V. (AMH)	Sales of memory modules and storage memory devices	100.00%	100.00%	-
The Company	Apacer Technology Japan Corp. (AMJ)	Sales of memory modules and storage memory devices	100.00%	100.00%	-
The Company	Kingdom Corp. Limited (AMK)	Sales of memory modules and storage memory devices	100.00%	100.00%	-
The Company/ ACYB	Apacer Technologies Private Limited (ATPL)	Auxiliary sales of memory modules and storage memory devices	100.00%	100.00%	-
The Company	Apacer Technology (BVI) Inc. (ACYB)	Investment holding activity	100.00%	100.00%	-
The Company	UD INFO Corp. (UD)	Manufacture and sales of memory modules and storage memory devices	68.54%	68.54%	Note 1

Name of Investor	Name of Investee	Main Business and Products	Percentage of Ownership December 31, 2023	Percentage of Ownership December 31, 2022	Note
ACYB	Apacer Electronic (Shanghai) Co., Ltd. (AMC)	Sales of memory modules and storage memory devices	100.00%	100.00%	-
AMK	Shenzhen Kylinesports Technology Co. (AMS)	Sales of gaming products and consumer electronic products	99.00%	99.00%	-

Note 1: In August 2022, the Group obtained control over UD which became a subsidiary of the Group. Therefore, UD has been included in the Group's consolidated entities.

(iii) List of subsidiaries which are not included in the consolidated financial statements: None.

(d) Foreign currency

(i) Foreign currency transactions

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. At the end of each subsequent reporting period, monetary items denominated in foreign currencies are translated into the functional currencies using the exchange rate at that date. Non-monetary items denominated in foreign currencies that are measured at fair value are translated into the functional currencies using the exchange rate at the date that the fair value was determined. Non-monetary items denominated in foreign currencies that are measured based on historical cost are translated using the exchange rate at the date of the transaction.

Exchange differences are generally recognized in profit or loss, except for those differences relating to equity investments designated as at fair value through other comprehensive income, which are recognized in other comprehensive income.

(ii) Foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising from acquisition, are translated into the presentation currency of the Group's consolidated financial statements at the exchange rates at the reporting date. The income and expenses of foreign operations are translated into the presentation currency of the Group's consolidated financial statements at the average exchange rates for the period. All resulting exchange differences are recognized in other comprehensive income.

On the disposal of a foreign operation which involves a loss of control over a subsidiary or a loss of significant influence over an associate that includes a foreign operation, all of the exchange differences accumulated in equity in respect of that operation attributable to the shareholders of the Group are entirely reclassified to profit or loss. In the case of a partial disposal that does not result in the Group losing control over a subsidiary, the proportionate share of accumulated exchange differences is reclassified to non-controlling interests. For a partial disposal of the Group's ownership interest in an associate, the proportionate share of the accumulated exchange differences in equity is reclassified to profit or loss.

When the settlement of a monetary receivable from or payable to a foreign operation is neither planned nor likely to occur in the foreseeable future, the monetary item is, in substance, a part of net investment in that foreign operation, and the related foreign exchange gains and losses thereon are recognized in other comprehensive income.

(e) Classification of current and non-current assets and liabilities

An asset is classified as current when one of following criteria is met; all other assets are classified as non-current assets.

(i) It is expected to be realized, or sold or consumed in the normal operating cycle;

(ii) It is held primarily for the purpose of trading;

(iii) It is expected to be realized within twelve months after the and of the reporting period (“the reporting date”); or

(iv) The asset is cash or a cash equivalent unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.

A liability is classified as current when one of following criteria is met; all other liabilities are classified as non-current liabilities:

(i) It is expected to be settled in the normal operating cycle;

(ii) It is held primarily for the purpose of trading;

(iii) It is due to be settled within twelve months after the reporting date; or

(iv) The Group does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date.

(f) Cash and cash equivalents

Cash consists of cash on hand, checking deposits, and demand deposits. Cash equivalents consist of short-term and highly liquid investments that are readily convertible to known amounts of cash and are subject to an insignificant risk of changes in value. Time deposits that meet the aforesaid criteria and are held for meeting short-term cash commitments instead of investing and other purposes are also classified as cash equivalents.

(g) Financial instruments

Accounts receivables and debt securities issued are initially recognized when they are originated. All other financial assets and financial liabilities are initially recognized when the Group becomes a party to the contractual provisions of the instrument. A financial asset (unless it is an accounts receivable without a significant financing component) or financial liability is initially measured at fair value plus, for an item not at fair value through profit or loss (FVTPL), transaction costs that are directly attributable to its acquisition or issue. An accounts receivable without a significant financing component is initially measured at the transaction price.

(i) Financial assets

On initial recognition, financial assets are classified into the following categories: measured at amortized cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL). Regular way purchases or sales of financial assets are recognized or derecognized on a trade-date basis.

The Group shall reclassify all affected financial assets only when it changes its business model for managing its financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

1) Financial assets measured at amortized cost

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.

These assets are subsequently measured at amortized cost, which is the amount at which the financial asset is measured at initial recognition, plus/minus, the cumulative amortization using the effective interest method, adjusted for any loss allowance. Interest income, foreign exchange gains and losses, as well as impairment, are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss.

2) Financial assets at fair value through other comprehensive income (Financial assets at “FVOCI”)

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Group may irrevocably elect to present subsequent changes in the investment’s fair value in other comprehensive income. This election is made on an instrument-by-instrument basis.

Debt investments at FVOCI are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognized in profit or loss. Other net gains and losses are recognized in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to profit or loss.

Equity investments at FVOCI are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to retained earnings instead of profit or loss.

Dividend income derived from equity investments is recognized in profit or loss on the date on which the Group’s right to receive payment is established, which in the case of quoted securities is normally the ex-dividend date.

3) Financial assets at fair value through profit or loss (Financial assets at “FVTPL”)

All financial assets not classified as amortized cost or FVOCI described as above are measured at FVTPL, including derivative financial assets. On initial recognition, the Group may irrevocably designate a financial asset, which meets the requirements to be measured at amortized cost or at FVOCI, as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss.

4) Assessment of whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, “principal” is defined as the fair value of the financial assets on initial recognition. “Interest” is defined as consideration for the time value of money, for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs, as well as for a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Group considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Group considers:

- contingent events that would change the amount or timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable rate features;
- prepayment and extension features; and
- terms that limit the Group’s claim to cash flows from specified assets (e.g. non-recourse features)

5) Impairment of financial assets

The Group recognizes loss allowances for expected credit losses on financial assets measured at amortized cost (including cash and cash equivalents, notes and accounts receivable and other financial assets).

The Group measures loss allowances at an amount equal to lifetime expected credit loss (ECL), except for the following which are measured as 12-month ECL:

- bank balances for which credit risk (i.e. the risk of default occurring over the expected life of the financial instrument) has not increased significantly since initial recognition.

Loss allowance for accounts receivables are always measured at an amount equal to lifetime ECL.

Lifetime ECLs are the ECLs that result from all possible default events over the expected life of a financial instrument. 12-month ECLs are the portion of ECLs that result from default events that are possible within the 12 month after the reporting date (or a shorter period if the expected life of the instrument is less than 12 months).

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECL, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis based on the Group’s historical experience and informed credit assessment as well as forward-looking information.

ECLs are probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the Group in accordance with the contract and the cash flows that the Group expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets.

The gross carrying amount of a financial asset is written off, either partially or in full, to the extent that there is no realistic prospect of recovery. The Group individually makes an assessment with respect to the timing and amount of write-off based on whether there is a reasonable expectation of recovery. The Group expects no significant recovery from the amount written off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Group’s procedures for recovery of amounts due. Based on the Group’s experience, there have been no corporate customer recoveries after 181 days.

6) Derecognition of financial assets

The Group derecognizes a financial assets when the contractual rights to the cash flows from the financial assets expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial assets are transferred or in which the Group neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial assets.

The Group enters into transactions whereby it transfers assets recognized in its statement of balance sheet, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognized.

(ii) Financial liabilities

1) Financial liabilities

Financial liabilities are classified as measured at amortized cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognized in profit or loss.

Financial liabilities measured at amortized cost are subsequently measured at amortized cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognized in profit or loss. Any gain or loss on derecognition is also recognized in profit or loss.

2) Derecognition of financial liabilities

The Group derecognizes a financial liability when its contractual obligation has been fulfilled or cancelled, or has expired. The Group also derecognizes a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognized at fair value.

The difference between the carrying amount of a financial liability derecognized and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

3) Offsetting of financial assets and liabilities

Financial assets and liabilities are offset and the net amount presented in the statement of balance sheet when, and only when, the Group currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

(iii) Derivative financial instruments

Derivative financial instruments such as foreign currency forward contracts are held to hedge the Group’s foreign currency exposures. Derivatives are recognized initially at fair value, and attributable transaction costs are recognized in profit or loss as incurred. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are recognized in profit or loss. If the valuation of a derivative instrument results in a positive fair value, it is classified as a financial asset; otherwise, it is classified as a financial liability.

(h) Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories is calculated based on the weighted-average method and includes expenditure incurred in acquiring the inventories, production or conversion costs, and other costs incurred in bringing them to the location and condition ready for sale. Fixed manufacturing overhead is allocated to finished products and work in process based on the higher of normal capacity or actual capacity; variable manufacturing overhead is allocated based on the actual capacity of machinery and equipment. Net realizable value represents the estimated selling price in the ordinary course of business, less all estimated costs of completion and necessary selling expenses.

(i) Investment in associates

Associates are those entities in which the Group has significant influence, but not control or joint venture, over the financial and operating policies.

Investments in associates are accounted for using the equity method and are recognized initially at cost, plus, any transaction costs. The carrying amount of the investment in associates includes goodwill identified on acquisition, net of any accumulated impairment losses. When necessary, the entire carrying amount of the investment (including goodwill) will be tested for impairment as a single asset by comparing its recoverable amount with its carrying amount. Any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

The Group’s financial statements include the Group’s share of the profit or loss and other comprehensive income of those associates, after adjustments to align their accounting policies with those of the Group, from the date on which significant influence commences until the date on which significant influence ceases. When changes in an associate’s equity are not recognized in profit or loss or other comprehensive income of the associate, and such changes do not affect the Group’s ownership percentage of the associate, the Group recognizes the change in ownership interests of its associate as “capital surplus” in proportion to its ownership.

Gains and losses resulting from transactions between the Group and an associate are recognized only to the extent of unrelated Group’s interests in the associate.

When the Group’s share of losses in an associate equals or exceeds its interest in the associate, the recognition of further losses is discontinued. Additional losses are provided for, and a liability is recognized, only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate.

When an associate issues new shares and the Group does not subscribe to the new shares in proportion to its original ownership percentage, the Group’s interest in the associate’s net assets will be changed. The change in the equity interest is adjusted through the capital surplus and investment accounts. If the Group’s capital surplus is insufficient to offset the adjustment to investment accounts, the difference is charged as a reduction of retained earnings. If the Group’s interest in an associate is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

(j) Property, plant and equipment

(i) Recognition and measurement

Items of property, plant and equipment are measured at cost, which includes capitalized borrowing costs, less accumulated depreciation and accumulated impairment losses.

If significant parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Any gain or loss on disposal of an item of property, plant and equipment is recognized in profit or loss.

(ii) Subsequent expenditure

Subsequent expenditure is capitalized only if it is probable that future economic benefits associated with the expenditure will flow to the Group.

(iii) Depreciation

Depreciation is calculated on the cost of an asset less its residual value and is recognized in profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment. Land is not depreciated.

The estimated useful lives for property, plant and equipment are as follows: buildings and improvements: 4 to 47 years; machinery and equipment: 2 to 11 years; and other equipment: 2 to 15 years.

Depreciation methods, useful lives, and residual values are reviewed at each reporting date, with the effect of any changes in estimate accounted for on a prospective basis.

(k) Leases

At inception of a contract, the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

(i) As a leasee

The Group recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the right-of-use asset or the end of the lease term. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be reliably determined, the Group’s incremental borrowing rate. Generally, the Group uses its incremental borrowing rate as the discount rate.

Lease payments included in the measurement of the lease liability comprise the following:

- fixed payments, including in-substance fixed payments;
- variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when:

- there is a change in future lease payments arising from the change in an index or rate; or
- there is a change of its assessment on whether it will exercise an extension or termination option; or
- there is any lease modification in lease subject, scope of the lease or other terms.

When the lease liability is remeasured, other than lease modifications, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or in profit and loss if the carrying amount of the right-of-use asset has been reduced to zero.

When the lease liability is remeasured to reflect the partial or full termination of the lease for lease modifications that decrease the scope of the lease, the Group accounts for the remeasurement of the lease liability by decreasing the carrying amount of the right-of-use asset to reflect the partial or full termination of the lease, and recognize the difference in profit or loss relating to the partial or full termination of the lease.

The Group presents right-of-use assets that do not meet the definition of investment properties, and lease liabilities as a separate line item respectively in the consolidated balance sheets.

The Group has elected not to recognize right-of-use assets and lease liabilities for short-term leases of office equipment. The Group recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

(l) Intangible assets

(i) Goodwill

Goodwill arising from the acquisition of subsidiaries is accounted for as intangible assets. Please refer to note 4(s) for the description of the measurement of goodwill at initial recognition. Goodwill is not amortized but is measured at cost, less accumulated impairment losses.

(ii) Other intangible assets

The Group’s other intangible assets are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized in profit or loss using the straight-line method over the following estimated useful lives: acquired computer software: 1 to 10 years; royalties for the use of patents: 13 to 20 years; customer relationships: 7.42 years; expertise: 5 years.

Amortization methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate.

(m) Impairment of non-financial assets

The Group assesses at the end of each reporting date whether there is any indication that the carrying amounts of non-financial assets (other than inventories and deferred tax assets) may be impaired. If any such indication exists, then the asset’s recoverable amount is estimated. Goodwill is tested annually or when there are indications of impairment.

For the purpose of impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows from other assets or groups of assets. Goodwill arising from a business combination is allocated to cash-generating units (“CGUs”) or groups of CGUs that are expected to benefit from the synergies of the combination.

The recoverable amount of an individual asset or CGU is the higher of its value in use and its fair value less costs to sell. Value in use is based on the estimated future cash flows, discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or CGU.

An impairment loss is recognized if the carrying amount of an asset or CGU exceeds its recoverable amount. Impairment losses are recognized in profit or loss. They are allocated first to reduce the carrying amount of any goodwill allocated to the CGU, and then to reduce the carrying amounts of the other assets in the CGU on a pro rata basis.

An impairment loss in respect of goodwill is not reversed. For other non-financial assets, an impairment loss is reversed only to the extent that the asset’ s carrying amount that would have been determined (net of depreciation or amortization) had no impairment loss been recognized for the assets in prior years.

(n) Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that the Group will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

(i) Warranties

A provision for warranties is recognized when the underlying products or services are sold. This provision reflects the historical warranty claim rate and the weighting of all possible outcomes against their associated probabilities.

(ii) Sales return and allowances provision

A provision for sales returns and allowances is recognized when the underlying products are sold. This provision is estimated based on historical sales return and allowances data.

(o) Revenue recognition

Revenue is measured based on the consideration to which the Group expects to be entitled in exchange for transferring goods to a customer. The Group recognizes revenue when it satisfies a performance obligation by transferring control of a good to a customer.

(i) Sale of goods

The Group recognizes revenue when control of the goods has been transferred to the customer, being when the goods have been delivered to the customer, and there is no unfulfilled obligation that could affect the customer’ s acceptance of the goods. Delivery occurs when the customer has accepted the goods in accordance with the terms of sales, the risks of obsolescence and loss have been transferred to the customer, and the Group has objective evidence that all criteria for acceptance have been satisfied.

A receivable is recognized when the goods are delivered as this is the point in time that the Group has a right to an amount of consideration that is unconditional.

(ii) Financing components

The Group does not expect that the period between the transfer of the promised goods to the customer and payment by the customer exceeds one year. As a consequence, the Group does not adjust any of the transaction prices for the time value of money.

(p) Employee benefits

(i) Defined contribution plans

Obligations for contributions to defined contribution pension plans are expensed during the year in which employees render services.

(ii) Defined benefit plans

The Group's net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount and deducting the fair value of any plan assets.The discount rate for calculating the present value of the defined benefit obligation refers to the interest rate of high-quality government bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the term of the related pension obligation. The defined benefit obligation is calculated annually by qualified actuaries using the projected unit credit method.

When the benefits of a plan are improved, the expense related to the increased obligations resulting from the services rendered by employees in the past years are recognized in profit or loss immediately.

The remeasurements of the net defined benefit liability (asset) comprise 1) actuarial gains and losses; 2) return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset); and 3) any change in the effect of the asset ceiling, excluding amounts included in net interest on the net defined benefit liability (asset). The remeasurements of the net defined benefit liabilities (asset) are recognized in other comprehensive income and then transferred to retained earnings.

The Group recognizes gains or losses on the curtailment or settlement of a defined benefit plan when the curtailment or settlement occurs. The gain or loss on curtailment or settlement comprises any resulting change in the fair value of plan assets and any change in the present value of the defined benefit obligation.

(iii) Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed during the period in which employees render services. A liability is recognized for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Group has a present legal or constructive obligation to make such payments as a result of past service provided by the employees, and the obligation can be estimated reliably.

(q) Share-based payment

The grant-date fair value of equity-settled share-based payment arrangements granted to employees is generally recognized as an expense, with a corresponding increase in equity, over the vesting period of the awards. The amount recognized as an expense is adjusted to reflect the number of awards for which the related service and non-market performance conditions are expected to be met, and the amount ultimately recognized is based on the number of awards that meet the related service and non-market performance conditions at the vesting date.

For share-based payment awards with non-vesting conditions, the grant-date fair value of the share-based payment is measured to reflect such conditions, and there is no true-up for differences between expected and actual outcomes.

(r) Income taxes

Income taxes comprise current taxes and deferred taxes. Current and deferred taxes are recognized in profit or loss unless they relate to items recognized directly in equity or other comprehensive income.

Current taxes comprise the expected tax payables or receivables on the taxable profits (losses) for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of current tax payables or receivables are the best estimate of the tax amount expected to be paid or received that reflects uncertainty related to income taxes, if any. It is measured using tax rates enacted or substantively enacted at the reporting date.

Deferred taxes arise due to temporary differences between the carrying amounts of assets and liabilities at the reporting date and their respective tax bases. Deferred taxes are recognized except for the follwing:

(i) Temporary differences on the initial recognition of assets and liabilities in a transaction that is not a business combination and at the time of the transaction 1) affects neither accounting nor taxable profits (losses) and 2) does not give rise to equal taxable and deductible temporary differences;

(ii) Temporary differences related to investments in subsidiaries and associates to the extent that the Group is able to control the timing of the reversal of the temporary differences and it is probable that they will not reverse in the foreseeable future; and

(iii) Taxable temporary differences arising on the initial recognition of goodwill.

Deferred taxes are measured at tax rates that are expected to be applied to temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date, and reflect uncertainty related to income taxes, if any.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred tax assets and liabilities relate to income taxes levied by the same tax authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

Deferred tax assets are recognized for unused tax losses, tax credits, and deductible temporary differences to the extent that it is probable that future taxable profits will be available against which they can be utilized. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realized; such reductions are reversed when the probability of future taxable profits improves.

(s) Business combinations

The Group accounts for business combinations using the acquisition method. Goodwill is measured as the excess of the acquisition-date fair value of the consideration transferred (including any non-controlling interest in the acquiree) over the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed (generally at fair value). If the residual balance is negative, the Group shall re-assess whether it has correctly identified all of the assets acquired and liabilities assumed and recognize any additional assets or liabilities that are identified in that review, and shall recognize a gain on the bargain purchase thereafter.

Acquisition-related costs are expensed as incurred except for the costs related to issuance of debt or equity instruments.

Non-controlling interests in an acquire that are present ownership interests and entitle their holders to a proportionate share of the entity’s net assets in the event of liquidation are measured at either fair value or the present ownership instruments’ proportionate share in the recognized amounts of the acquiree’s net identifiable assets. All other non-controlling interest is measured at its acquisition- date fair value or other measurement basis in accordance with Taiwan-IFRS Accounting Standards.

In a business combination achieved in stages, the Group shall re-measure its previously held equity interest in the acquiree at its acquisition-date fair value and recognize the resulting gain or loss in profit or loss. The amount previously recognized in other comprehensive income in relation to the changes in the value of the Group’s equity interest should be reclassified to profit or loss on the same basis as would be required if the Group had disposed directly of the previously held equity interest.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the provisional amounts for the items for which the accounting is incomplete are reported in the financial statements. During the measurement period, the provisional amounts recognized at the acquisition date are retrospectively adjusted to reflect new information obtained about facts and circumstances that existed as of the acquisition date. The measurement period shall not exceed one year from the acquisition date.

(t) Earnings per share (“EPS”)

The basic and diluted EPS attributable to shareholders of the Company are disclosed in the consolidated financial statements. Basic EPS is calculated by dividing net income attributable to shareholders of the Company by the weighted-average number of common shares outstanding during the year. Diluted EPS is calculated as the net income attributable to shareholders of the Company divided by the weighted-average number of common shares outstanding during the year after adjustment for the effects of all potentially dilutive common shares such as restricted stock to employees and employee compensation.

(u) Operating segments

An operating segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses (including revenues and expenses relating to transactions with other components of the Group). Operating results of the operating segment are regularly reviewed by the Group’s chief operating decision maker to make decisions on the allocation of resources to the segment and to assess its performance for which discrete financial information is available.

5. Critical accounting judgments and key sources of estimation uncertainty

The preparation of the consolidated financial statements in conformity with the Regulations and Taiwan-IFRS Accounting Standards requires management to make judgments, estimates, and assumptions that affect the application of the accounting policies and the reported amount of assets, liabilities, income and expenses. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and the future periods affected.

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year is as follows:

(a) Valuation of inventories

Inventories are measured at the lower of cost or net realizable value. The Group estimates the net realizable value of inventory, taking into account obsolescence and unmarketable items at the reporting date, and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is mainly determined based on assumptions of future demand within a specific time horizon, which could result in significant adjustments. Please refer to note 6(e) for more details of the valuation of inventories.

(b) Assessment of impairment of goodwill

The assessment of impairment of goodwill requires the Group to make subjective judgments to identify cash-generating units, allocate the goodwill to relevant cash-generating units, and estimate the recoverable amount of relevant cash-generating units. Any changes in these estimates based on changed economic conditions or business strategies could result in significant adjustments in future years. Please refer to note 6(j) for more details of the assessment of impairment of goodwill.

6. Significant account disclosures

(a) Cash and cash equivalents

	December 31, 2023	December 31, 2022
Cash on hand	$ 97	195
Demand deposits	875,143	841,716
Time deposits with original maturities less than three months	186,234	577,465
	$ 1,061,474	**1,419,376**

As of December 31, 2023 and 2022, the time deposits with original maturities of more than three months (excluding pledged time deposits) amounted to $1,567,650 and $1,380,623, respectively, which were classified as other financial assets－current.

(b) Financial assets and liabilities at fair value through profit or loss－current

		December 31, 2023	December 31, 2022
Financial assets mandatorily measured at fair value through profit or loss－current:			
Foreign currency forward contracts	$	593	-
Foreign exchange swaps		-	980
	$	**593**	**980**

		December 31, 2023	December 31, 2022
Financial liabilities held for trading－current:			
Foreign currency forward contracts	$	(70)	(892)
Foreign exchange swaps		-	(120)
	$	**(70)**	**(1,012)**

Please refer to note 6(v) for the detail of the changes in fair value recognized in profit or loss.

The Group entered into derivative contracts to manage foreign currency exchange risk resulting from its operating activities. As of December 31, 2023 and 2022, the derivative financial instruments that did not conform to the criteria for hedge accounting consisted of the following:

	December 31, 2023				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial assets－foreign currency forward contracts	CNY	13,500	**$ 593**	CNY / NTD	2024/01/26～2024/02/26

	December 31, 2022				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial assets－foreign exchange swaps	USD	300	**$ 980**	TWD / NTD	2023/01/04~2023/01/17

	December 31, 2023				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial liabilities－foreign currency forward contracts	JPY	19,000	**$ (70)**	JPY / NTD	2024/01/26

	December 31, 2022					
	Contract amount (in thousands)		**Fair value**		**Currency (Sell / Buy)**	**Maturity period**
Financial liabilities－foreign currency forward contracts	JPY	20,900	$	(268)	JPY / NTD	2023/01/30
	CNY	8,500		(531)	CNY / NTD	2023/01/30
	USD	2,000		(93)	USD / NTD	2023/01/10~2023/01/13
			$	(892)		
Financial liabilities－foreign exchange swaps	USD	3,000	$	(120)	USD / NTD	2023/01/19

(c) Financial assets at fair value through other comprehensive income－non-current

		December 31, 2023	December 31, 2022
Equity investments at fair value through other comprehensive income:			
Domestic unlisted stocks	$	35,034	29,616
Foreign unlisted stocks		137	153
	$	35,171	29,769

The Group designated the abovementioned investments as at fair value through other comprehensive income because these equity investments represent those investments that the Group intends to hold for long-term strategic purposes.

No strategic investments were disposed for the years ended December 31, 2023 and 2022, and there were no transfers of any cumulative gain or loss within equity relating to these investments.

(d) Notes and accounts receivable

		December 31, 2023	December 31, 2022
Notes and accounts receivable	$	796,900	757,720
Accounts receivable from related parties		558	377
		797,458	758,097
Less: loss allowance		(21,417)	(21,821)
	$	776,041	736,276

As of December 31, 2023 and 2022, aside from recognizing impairment loss for credit-impaired accounts receivable amounting to $0 and $18,232, respectively, for notes and accounts receivable with gross carrying amounts of $0 and $18,232, respectively, as there was objective evidence indicating that, under reasonable expectation, they would not be recovered in total. The Group applies the simplified approach to measure its expected credit losses, i.e. the use of lifetime expected loss provision for all receivables (including related parties), as well as the incorporated forward-looking information. The loss allowance provision was determined as follows:

	December 31, 2023		
	Gross carrying amount	**Weighted-average loss rate**	**Loss allowance provision**
Current	$ 701,045	0.0001%	1
Past due 1-90 days	75,590	0.7911%	599
Past due 91-180 days	18	66.67%	12
Past due over 181 days	20,805	100%	20,805
	$ 797,458		21,417

	December 31, 2022		
	Gross carrying amount	**Weighted-average loss rate**	**Loss allowance provision**
Current	$ 669,732	0.0002%	2
Past due 1-90 days	67,373	1.2319%	828
Past due 91-180 days	15	93.3333%	14
Past due over 181 days	2,745	100%	2,745
	$ 739,865		3,589

Movements of the loss allowance for notes and accounts receivable (including related parties) were as follows:

	2023	2022
Balance at January 1	$ 21,821	5,148
Acquisition through business combination	-	791
Impairment loss recognized (reversed)	(404)	15,882
Balance at December 31	$ 21,417	21,821

(e) Inventories

	December 31, 2023	December 31, 2022
Raw materials	$ 583,527	317,238
Work in process	111,133	184,978
Finished goods	738,524	421,131
Inventories in transit	57,297	32,137
	$ 1,490,481	955,484

For the years ended December 31, 2023 and 2022, the amounts of inventories recognized as cost of revenue were as follows:

	2023	2022
Cost of inventories sold	$ 5,976,248	6,905,014
(Reversal of) inventories write-downs	(123,373)	203,606
Loss (gain) on physical inventory	(71)	1
	$ 5,852,804	7,108,621

The above write-downs of inventories to net realizable value, and reversal of inventories write-downs due to price recovery, or sale or consumption of beginning inventories which has been written down, were included in cost of revenue.

(f) Investments accounted for using equity method

(i) Investments in associates

	December 31, 2023		December 31, 2022	
Name of Associates	**Percentage of voting rights**	**Carrying amount**	**Percentage of voting rights**	**Carrying amount**
JoiiUp Technology Inc.	10.35%	$ 1,351	11.48%	444

Aggregate financial information of associates that were not individually material was summarized as follows. The financial information was included in the Group’s consolidated financial statement.

	December 31, 2023	December 31, 2022
The aggregate carrying amounts of associates that were not individually material	$ 1,351	444

	2023	2022
Attributable to the Group:		
Net loss	$ (596)	(920)
Other comprehensive income	-	-
Total comprehensive income	$ (596)	(920)

(g) Business combination

(i) Acquisition of subsidiary — UD INFO Corp. (UD)

1) Consideration transferred

On August 1, 2022, the Group issued additional 9,864 thousand shares of common stock in exchange for 4,932 thousand shares of common stock of UD, wherein it obtained 68.54% ownership of UD. The Group obtained control over UD and therefore, UD has been included in the Group’s consolidated entities since the acquisition date. UD is mainly engaged in the research and development, and sales of industrial applications and embedded memory products. The acquisition of UD is to acquire UD’s current customer relationships and expand markets in flash memory products and memory modules.

2) Identifiable net assets acquired in a business combination

On August 1, 2022 (the acquisition date), the fair value of identifiable assets acquired and liabilities assumed from the acquisition was as follows:

Consideration transferred:		
Issuance of additional 9,864 thousand shares of common stock		$ 380,815
Add: Non-controlling interests (measured at non-controlling interest's proportionate share of the fair value of UD's identifiable net assets)		121,720
Less: identifiable net assets acquired at fair value:		
Cash and cash equivalents	$ 248,556	
Financial assets at fair value through profit or loss －current	31,460	
Notes and accounts receivable	18,981	
Other receivables	1,787	
Inventories	238,438	
Other financial assets－current	12,000	
Other current assets	16,606	
Property, plant and equipment	60,802	
Right-of-use assets	1,337	
Intangible assets－computer software	17	
Intangible assets－customer relationships	69,705	
Intangible assets－expertise	27,104	
Deferred income tax assets	4,415	
Other financial assets－non-current	845	
Short-term borrowings	(5,000)	
Notes and accounts payable (including related parties)	(111,189)	
Other payables (including related parties)	(16,096)	
Current income tax liabilities	(22,661)	
Lease liabilities (including current and non-current)	(1,342)	
Other current liabilities	(115,352)	
Long-term debt (including current portion)	(52,840)	
Deferred income tax liabilities	(20,721)	386,852
Goodwill		$ 115,683

For the fair value measurement of the abovementioned assets and liabilities, the required market-based assessment and other calculations have been completed.

3) Intangible assets

Intangible assets－customer relationships and intangible assets－expertise are amortized on a straight-line basis over the estimated future economic useful life of 7.42 years and 5 years, respectively.

Goodwill arising from the acquisition of UD is due to the market profitability of industrial storage devices and value of assembled workforce, neither of which qualifies as an identifiable intangible asset. None of the goodwill recognized is expected to be deductible for income tax purposes.

4) Pro forma information

From the acquisition date to December 31, 2022, UD had contributed the revenue of $313,826 and the net income of $56,600 to the Group. If this acquisition had occurred on January 1, 2022, the management estimates that consolidated revenue would have been $9,171,328, and consolidated income after income tax would have been $645,005.

(ii) Subsidiaries that have material non-controlling interest:

Subsidiaries that have material non-controlling interest were as follows:

Subsidiaries	Principal place of business/ Registration country	The percentage of ownership and voting rights held by non-controlling interests December 31, 2023	December 31, 2022
UD INFO Corp. (UD)	Taiwan	31.46%	31.46%

The summarized financial information of subsidiaries was as follows, the information was prepared in accordance with Taiwan-IFRS Accounting Standards. The fair value adjustments made during the acquisition as at the acquisition date were included in the information. Intra-group transactions were not eliminated in this information:

1) The summarized financial information of UD:

	December 31, 2023	December 31, 2022
Current assets	$ 504,906	628,711
Non-current assets	267,654	277,751
Current liabilities	(125,576)	(295,229)
Non-current liabilities	(43,109)	(52,099)
Net assets	$ 603,875	559,134
The carrying amount of non-controlling interests	$ 153,597	139,592

	For the year ended December 31, 2023	2022/08/01~ 2022/12/31
Net sales	$ 782,918	313,826
Net income	$ 164,485	56,600
Other comprehensive income	-	-
Total comprehensive income	$ 164,485	56,600
Net income attributable to non-controlling interests	$ 51,682	17,873
Total comprehensive income attributable to non-controlling interests	$ 51,682	17,873

	For the year ended December 31, 2023	2022/08/01~ 2022/12/31
Cash flow from operating activities	$ 115,852	120,191
Cash flow from investing activities	(88,484)	(136,178)
Cash flow from financing activities	(126,884)	(27,962)
Effects of foreign exchange rate changes	-	-
Net decrease in cash and cash equivalents	$ (99,516)	(43,949)
Cash dividends paid to non-controlling interests	$ (37,677)	-

(h) Property, plant and equipment

	Land	Buildings	Machinery and equipment	Other equipment	Equipment to be inspected and construction in progress	Total
Cost:						
Balance at January 1, 2023	$ 598,567	341,544	191,052	92,716	5,263	1,229,142
Additions	-	1,693	10,869	3,623	17,581	33,766
Disposals	-	(3,771)	(24,459)	(25,405)	-	(53,635)
Reclassification and effect of exchange rate changes	-	(37)	22,346	(144)	(22,361)	(196)
Balance at December 31, 2023	$ 598,567	339,429	199,808	70,790	483	1,209,077
Balance at January 1, 2022	$ 556,498	320,112	192,230	85,446	1,048	1,155,334
Acquisition through business combination	42,069	19,040	1,039	455	-	62,603
Additions	-	1,446	10,228	6,948	10,496	29,118
Disposals	-	-	(17,816)	(998)	-	(18,814)
Reclassification and effect of exchange rate changes	-	946	5,371	865	(6,281)	901
Balance at December 31, 2022	$ 598,567	341,544	191,052	92,716	5,263	1,229,142
Accumulated depreciation and impairment loss:						
Balance at January 1, 2023	$ -	81,165	154,595	75,980	-	311,740
Depreciation	-	14,018	14,966	6,080	-	35,064
Disposals	-	(3,770)	(24,459)	(25,098)	-	(53,327)
Impairment loss	-	-	46	-	-	46
Reclassification and effect of exchange rate changes	-	(11)	(4)	(120)	-	(135)
Balance at December 31, 2023	$ -	91,402	145,144	56,842	-	293,388
Balance at January 1, 2022	$ -	66,296	158,506	69,176	-	293,978
Acquisition through business combination	-	1,317	310	174	-	1,801
Depreciation	-	13,556	13,293	6,848	-	33,697
Disposals	-	-	(17,816)	(953)	-	(18,769)
Impairment loss	-	-	251	-	-	251
Reclassification and effect of exchange rate changes	-	(4)	51	735	-	782
Balance at December 31, 2022	$ -	81,165	154,595	75,980	-	311,740
Carrying amounts:						
Balance at December 31, 2023	$ 598,567	248,027	54,664	13,948	483	915,689
Balance at December 31, 2022	$ 598,567	260,379	36,457	16,736	5,263	917,402

For the years ended December 31, 2023 and 2022, the Group recognized an impairment loss on property, plant and equipment of $46 and $251, respectively, which were included in non-operating income and loss.

Please refer to note 8 for the detail of the Group’s property, plant and equipment pledged as collateral to secure the bank loans and credit facilities.

(i) Right-of-use assets

		Buildings	Other equipment	Total
Cost:				
Balance at January 1, 2023	$	56,977	21,899	78,876
Additions		15,394	849	16,243
Derecognition		(10,661)	(3,792)	(14,453)
Effect of exchange rates changes		(636)	(57)	(693)
Balance at December 31, 2023	$	61,074	18,899	79,973
Balance at January 1, 2022	$	55,336	18,745	74,081
Acquisition through business combination		-	1,783	1,783
Additions		29,316	1,371	30,687
Derecognition		(29,976)	-	(29,976)
Effect of exchange rates changes		2,301	-	2,301
Balance at December 31, 2022	$	56,977	21,899	78,876
Accumulated depreciation:				
Balance at January 1, 2023	$	20,572	11,859	32,431
Depreciation		15,400	5,464	20,864
Derecognition		(10,661)	(3,792)	(14,453)
Effect of exchange rates changes		(403)	18	(385)
Balance at December 31, 2023	$	24,908	13,549	38,457
Balance at January 1, 2022	$	35,443	6,183	41,626
Acquisition through business combination		-	446	446
Depreciation		13,730	5,230	18,960
Derecognition		(29,976)	-	(29,976)
Effect of exchange rates changes		1,375	-	1,375
Balance at December 31, 2022	$	20,572	11,859	32,431
Carrying amounts:				
Balance at December 31, 2023	$	36,166	5,350	41,516
Balance at December 31, 2022	$	36,405	10,040	46,445

(j) Intangible assets

(i) The details of costs, accumulated amortization and impairment loss of intangible assets for the years ended December 31, 2023 and 2022 were as follows:

		Goodwill	Computer software	Royalties for the use of patents	Customer relationships	Expertise	Total
Cost:							
Balance at January 1, 2023	$	115,683	117,075	3,504	69,705	27,104	333,071
Additions		-	3,002	-	-	-	3,002
Derecognition		-	(2,696)	(163)	-	-	(2,859)
Reclassification and effect of exchange rate changes		-	1,824	-	-	-	1,824
Balance at December 31, 2023	$	115,683	119,205	3,341	69,705	27,104	335,038
Balance at January 1, 2022	$	-	111,900	4,104	-	-	116,004
Acquisition through business combination		115,683	120	-	69,705	27,104	212,612
Additions		-	5,946	-	-	-	5,946
Derecognition		-	(891)	(600)	-	-	(1,491)
Balance at December 31, 2022	$	115,683	117,075	3,504	69,705	27,104	333,071
Accumulated amortization and impairment loss:							
Balance at January 1, 2023	$	-	80,286	1,054	3,916	2,259	87,515
Amortization		-	10,180	167	9,399	5,421	25,167
Derecognition		-	(2,696)	(163)	-	-	(2,859)
Reclassification and effect of exchange rate changes		-	(109)	-	-	-	(109)
Balance at December 31, 2023	$	-	87,661	1,058	13,315	7,680	109,714
Balance at January 1, 2022	$	-	71,473	1,384	-	-	72,857
Acquisition through business combination		-	103	-	-	-	103
Amortization		-	9,614	218	3,916	2,259	16,007
Derecognition		-	(891)	(600)	-	-	(1,491)
Impairment loss		-	-	52	-	-	52
Reclassification and effect of exchange rate changes		-	(13)	-	-	-	(13)
Balance at December 31, 2022	$	-	80,286	1,054	3,916	2,259	87,515
Carrying amounts:							
Balance at December 31, 2023	$	115,683	31,544	2,283	56,390	19,424	225,324
Balance at December 31, 2022	$	115,683	36,789	2,450	65,789	24,845	245,556

(ii) Amortization

The amortization of intangible assets is included in the following line items of the consolidated statement of comprehensive income:

		2023	2022
Cost of revenue	$	3,189	3,106
Operating expenses	$	21,978	12,901

(iii) Impairment test on goodwill

The movements of goodwill arising from business combination were allocated to the respective CGUs identified as the following subsidiaries:

		UD
Balance at December 31, 2023 (the same as balance at January 1, 2023)	$	115,683
Balance at January 1, 2022	$	-
Acquisition through business combination		115,683
Balance at December 31, 2022	$	115,683

Each CGU to which the goodwill is allocated represents the lowest level within the Group, at which the goodwill is monitored for internal management purpose. As of December 31, 2023 and 2022, based on the results of impairment tests conducted by the Group, the recoverable amount of CGU exceeded its carrying amount; as a result, no impairment loss was recognized. The recoverable amount of a CGU was determined based on the value in use.

With regard to the key assumptions used in the estimation of the recoverable amount, the annual discount rates for the years ended December 31, 2023 and 2022 were 15.97% and 16.71%, respectively, based on weighted average cost of capital. The cash flow projections were determined based on future financial budgets, covering a period of 5 years, and extrapolated with steady annual terminal growth rates for subsequent years, which were 1% for 2023 and 2022. The key assumptions abovementioned represent the management’ s forecast of the future for the related industry by considering the history information from internal and external sources.

(k) Short-term borrowings

The details of short-term borrowings were as follows:

		December 31, 2023	December 31, 2022
Unsecured bank loans	$	61,410	92,145
Unused credit facilities	$	1,649,985	1,889,440
Interest rate interval		6.41%	5.03%

(l) Long-term debt

	December 31, 2023	December 31, 2022
Secured bank loans	$ 23,579	30,124
Less: current portion of long-term debt	(1,228)	(2,016)
	$ 22,351	28,108
Unused credit facilities	$ 505	6,176
Interest rate interval	1.98%	1.85%

Please refer to note 8 for the Group’ s assets pledged as collateral to secure the bank loans and credit facilities.

(m) Lease liabilities

The carrying amounts of lease liabilities were as follows:

	December 31, 2023	December 31, 2022
Current	$ 19,688	15,659
Non-current	$ 22,597	31,339

For the maturity analysis, please refer to note 6(x).

The amounts recognized in profit or loss were as follows:

	2023	2022
Interest on lease liabilities	$ 1,224	908
Variable lease payments not included in the measurement of lease liabilities	$ 817	1,233
Expenses relating to short-term leases	$ 799	731

The amounts recognized in the statements of cash flows for the Group were as follows:

	2023	2022
Total cash outflows for leases	$ 23,796	20,837

(i) Real estate leases

The Group leases buildings for its office and warehouses. The leases typically run for a period of one to seven years. Among these leases, the rent payment on some leases of warehouses is calculated monthly based on the area being used.

(ii) Other leases

The Group leases office and transportation equipment, with lease terms of one to five years. Among these leases, the Group leases some office equipment with contract terms within one year. These leases are short-term and the Group has elected not to recognize right-of-use assets and lease liabilities for these leases.

(n) Provisions

		Warranties	Sales returns and allowances	Total
Balance at January 1, 2023	$	4,855	5,689	10,544
Provisions made		2,925	7,835	10,760
Amount utilized		(402)	(11,408)	(11,810)
Balance at December 31, 2023	**$**	**7,378**	**2,116**	**9,494**
Balance at January 1, 2022	$	7,027	3,197	10,224
Provisions made		2,632	45,222	47,854
Amount utilized		(4,804)	(42,730)	(47,534)
Balance at December 31, 2022	**$**	**4,855**	**5,689**	**10,544**

(i) Warranties

The provision for warranties is made based on the number of units sold currently under warranty, historical rates of warranty claim on those units, and cost per claim to satisfy the warranty obligation. The Group reviews the estimation basis on an ongoing basis and revises it when appropriate.

(ii) Sales returns and allowances

Expected sales returns and allowances are estimated based on historical experience.

(o) Employee benefits

(i) Defined benefit plans

The reconciliation between the present value of defined benefit obligations and the net defined benefit liabilities for defined benefit plans was as follows:

		December 31, 2023	December 31, 2022
Present value of defined benefit obligations	$	55,129	60,106
Fair value of plan assets		(30,880)	(40,124)
		24,249	19,982
Effects of the asset ceiling		-	-
Net defined benefit liabilities	**$**	**24,249**	**19,982**

Except for the Company, there is not any other entity within the Group which has defined benefit plans. The Company makes defined benefit plan contributions to the pension fund account at Bank of Taiwan that provides pension benefits for its employees upon retirement. The Company also established pension funds in accordance with the Regulations Governing the Management, Investment, and Distribution of the Employees' Retirement Fund Established by a Profit-seeking Enterprise, which are deposited monthly in the designated financial institutions. The plans entitle a retired employee to receive a payment based on years of service and average salary for the six months prior to the employee's retirement.

1) Composition of plan assets

In accordance with the requirements of the Labor Standards Law, the Company's pension fund account at Bank of Taiwan is managed and administered by the Bureau of Labor Funds of the Ministry of Labor (the Bureau of Labor Funds). According to the Regulations for Revenues, Expenditures, Safeguard and Utilization of the Labor Retirement Fund, with regard to the utilization of the Fund, minimum earnings shall be no less than the earnings attainable from two-year time deposits, with interest rates offered by local banks.

As of December 31, 2023 and 2022, the Group's labor pension fund account balance at Bank of Taiwan amounted to $30,880 and $40,124, respectively. Please refer to the website of the Bureau of Labor Funds for information on the labor pension fund assets including the asset portfolio and yield of the fund.

2) Movements in present value of defined benefit obligations

The movements in present value of defined benefit obligations of the Group were as follows:

	2023	2022
Defined benefit obligations at January 1	$ 60,106	79,355
Current service costs and interest expense	1,141	613
Remeasurement on the net defined benefit liabilities (assets)		
－Actuarial loss (gain) arising from changes in financial assumptions	787	(18,157)
－Actuarial loss arising from experience adjustments	3,570	621
Benefits paid by the plan	(10,475)	(2,326)
Defined benefit obligations at December 31	**$ 55,129**	**60,106**

3) Movements of fair value of plan assets

The movements of the fair value of plan assets of the Group were as follows:

		2023	2022
Fair value of plan assets at January 1	$	40,124	38,814
Interest income		701	243
Remeasurement on the net defined benefit liabilities (assets)			
－Return on plan assets (excluding current interest expense)		95	3,029
Contributions by the employer		435	364
Benefits paid by the plan		(10,475)	(2,326)
Fair value of plan assets at December 31	**$**	**30,880**	**40,124**

4) Changes in the effect of the asset ceiling

There was no effect of the asset ceiling.

5) Expenses recognized in profit or loss

The expenses recognized in profit or loss were as follows:

		2023	2022
Current service costs	$	93	117
Net interest expense on the net defined benefit liability		347	253
	$	**440**	**370**
Cost of revenue	$	144	114
Selling expenses		143	123
Administrative expenses		71	68
Research and development expenses		82	65
	$	**440**	**370**

6) Remeasurement of the net defined benefit liabilities recognized in other comprehensive income

The remeasurement of the net defined benefit liabilities recognized in other comprehensive income were as follows:

		2023	2022
Cumulative amount at January 1	$	21,763	42,328
Recognized during the period		4,262	(20,565)
Cumulative amount at December 31	**$**	**26,025**	**21,763**

7) Actuarial assumptions

The principal assumptions of the actuarial valuation were as follows:

	December 31, 2023	**December 31, 2022**
Discount rate	1.625%	1.750%
Future salary increases rate	3.000%	3.000%

The Group expects to make contribution of $435 to the defined benefit plans in the year following December 31, 2023.

The weighted average duration of the defined benefit plans is 13.99 years.

8) Sensitivity analysis

When calculating the present value of the defined benefit obligations, the Group uses judgments and estimations to determine the actuarial assumptions for each measurement date, including discount rates, employee turnover rates and future salary changes. Any changes in the actuarial assumptions may significantly impact the amount of the defined benefit obligations.

The following table summarizes the impact of a change in the assumptions on the present value of the defined benefit obligation on December 31, 2023 and 2022.

	Increase (decrease) in present value of defined benefit obligations	
	0.25% Increase	**0.25% Decrease**
December 31, 2023		
Discount rate	(1,551)	1,606
Future salary change rate	1,555	(1,508)
December 31, 2022		
Discount rate	(1,818)	1,894
Future salary change rate	1,835	(1,767)

Each sensitivity analysis considers the change in one assumption at a time, leaving the other assumptions unchanged. This approach shows the isolated effect of changing one individual assumption but does not take into account that some assumptions are related. The method used to carry out the sensitivity analysis is the same as the calculation of the net defined benefit liabilities recognized in the balance sheets.

In 2023, the method and assumptions used to carry out the sensitivity analysis was the same as in the prior year.

(ii) Defined contribution plans

The Company contributes monthly an amount equal to 6% of each employee's monthly wages to the employee's individual pension fund account at the Bureau of Labor Insurance in accordance with the provisions of the Labor Pension Act. Foreign subsidiaries make contributions in compliance with their respective local regulations. Under this defined contribution plan, the Group has no legal or constructive obligation to pay additional amounts after contributing a fixed amount to the Bureau of Labor Insurance.

For the years ended December 31, 2023 and 2022, the Group recognized pension expenses of $29,340 and $26,504, respectively, in relation to the defined contribution plans.

(p) Income taxes

(i) The components of income tax expense were as follows:

		2023	2022
Current income tax expense			
Current period	$	117,021	167,115
Adjustments for prior years		1,659	790
		118,680	167,905
Deferred income tax expense (benefit)			
Origination and reversal of temporary differences		24,997	(31,421)
Income tax expense	$	143,677	136,484

The components of income tax expense (benefit) recognized in other comprehensive income were as follows:

		2023	2022
Items that will not be reclassified subsequently to profit or loss:			
Remeasurement of defined benefit plans	$	(852)	4,113

Reconciliations of income tax expense and income before income tax were as follows:

		2023	2022
Income before income tax	$	748,389	713,475
Income tax using the Company's statutory tax rate	$	149,678	142,695
Effect of different tax rates in foreign jurisdictions		2,663	20,131
Investment income recorded under equity method		(22,399)	(7,604)
Investment tax credits		(15,294)	(13,831)
Changes in unrecognized temporary differences		(8,182)	(14,271)
Prior-year adjustments		1,659	790
Surtax on undistributed earnings		5,927	4,699
Others		29,625	3,875
	$	143,677	136,484

(ii) Deferred income tax assets and liabilities

1) Unrecognized deferred income tax assets and liabilities

	December 31, 2023	December 31, 2022
Unrecognized deferred income tax assets:		
Aggregate deductible temporary differences associated with investments in subsidiaries	$ 12,160	14,707
Deductible temporary differences	788	788
	$ 12,948	15,495

	December 31, 2023	December 31, 2022
Unrecognized deferred income tax liabilities:		
Aggregate taxable temporary differences associated with investments in subsidiaries	$ 73,956	68,321

As the Group is able to control the timing of the reversal of the temporary differences associated with investments in its subsidiaries as of December 31, 2023 and 2022, and Management believes that it is probable that the temporary differences will not reverse in the foreseeable future, such temporary differences are not recognized as deferred income tax assets and liabilities.

2) Recognized deferred income tax assets and liabilities

Changes in the amount of deferred income tax assets and liabilities were as follows:

Deferred income tax assets:

	Defined benefit plans	Provision for inventory obsolescence	Warranty provision	Unrealized impairment loss on financial assets	Others	Total
Balance at January 1, 2023	$ 3,997	137,333	971	10,000	22,816	175,117
Recognized in profit or loss	1	(24,632)	505	-	(2,701)	(26,827)
Recognized in other comprehensive income	852	-	-	-	-	852
Balance at December 31, 2023	$ 4,850	112,701	1,476	10,000	20,115	149,142
Balance at January 1, 2022	$ 8,109	93,300	1,405	10,000	28,530	141,344
Acquisition through business combination	-	1,084	-	-	3,331	4,415
Recognized in profit or loss	1	42,949	(434)	-	(9,045)	33,471
Recognized in other comprehensive income	(4,113)	-	-	-	-	(4,113)
Balance at December 31, 2022	$ 3,997	137,333	971	10,000	22,816	175,117

Deferred income tax liabilities:

		Others
Balance at January 1, 2023	$	22,894
Recognized in profit or loss		(1,830)
Balance at December 31, 2023	**$**	**21,064**
Balance at January 1, 2022	$	123
Acquisition through business combination		20,721
Recognized in profit or loss		2,050
Balance at December 31, 2022	**$**	**22,894**

(iii) The Company's income tax returns for the years through 2021 have been examined and approved by the R.O.C. income tax authorities.

(q) Capital and other equity

(i) Common stock

As of December 31, 2023 and 2022, the Company's authorized shares of common stock consisted of 200,000 thousand shares, of which 122,688 thousand shares were issued. As of December 31, 2023 and 2022, as the shares of restricted stock to employees amounting to 0 and 463 thousand shares, respectively, were not yet vested, the Company's outstanding shares of common stock were 122,688 and 122,225 thousand shares, respectively. The par value of the Company's common stock is $10 (dollars) per share. The Company has reserved 15,000 thousand shares for the exercise of employee stock options.

The movements in outstanding shares of common stock were as follows (in thousands of shares):

	Share of Common Stock	
	2023	**2022**
Balance at January 1	122,225	100,898
Issuance of new shares in exchange for other company's shares	-	9,864
Capital increase in cash	-	11,000
Vested restricted stock issued to employees	463	463
Balance at December 31	**122,688**	**122,225**

1) In view of the improvement of market competitiveness and operating synergies, the Company's Board of Directors meeting held on June 2, 2022 resolved to issue additional 9,864 thousand shares of common stock for the purpose of share exchange with UD INFO Corp. (UD). The Company issued 9,864 thousand shares of common stock, as the consideration for this share exchange transaction, in exchange for 4,932 thousand shares of common stock of UD (approximately equal to 68.54% of the outstanding shares of common stock of UD). Every 2 newly-issued shares of common stock of the Company was exchanged for 1 share of common stock of UD. The abovementioned share exchange and the effective date was on August 1, 2022.

2) In order to seek opportunities for strategic alliances with domestic and international partners and enrich the necessary working capital in response to develop long-term operations, the Company's shareholders' meeting held on May 31, 2022 resolved to raise capital through private placement. The effective date of capital increase was on November 17, 2022 and the relevant statutory registration procedures have been completed on December 2, 2022. Details were summarized were as follows:

a) Shares issued: 11,000 thousand shares of common stock

b) Issue price: $33 (dollars) per share

c) Total proceeds received by the Company: $363,000

d) Investor of the private placement: Acer Inc.

e) Rights and obligations: All the rights and obligations of shares of common stock through the private placement (the "Private Placement Shares") shall be the same as those of shares of common stock issued and outstanding. However, except for selling to specific investors defined in Article 43-8 of the Securities and Exchange Act, the Private Placement Shares cannot be resold during a three-year period from delivery date. After three years from delivery date, according to the Securities and Exchange Act and related regulations, the Company shall obtain a letter issued by Taiwan Stock Exchange Corporation ("TWSE") acknowledging that the Private Placement Shares have met the standards for TWSE listing before it may file with FSC for retroactive handling of public issuance procedures. Thereafter, the Company can apply for listing in TWSE of Private Placement Shares.

f) Others: The Company recognized capital surplus of $253,000, resulting from the issuance price of Private Placement Shares in excess of common stock's par value.

(ii) Capital surplus

	December 31, 2023	December 31, 2022
Paid-in capital in excess of par value	$ 866,883	866,883
Employee stock options	12,901	12,901
Treasury stock transactions	3,781	3,781
Restricted stock to employees	26,499	26,499
Changes in equity of associates accounted for using equity method	15,761	14,258
	$ 925,825	**924,322**

Pursuant to the Company Act, any realized capital surplus is initially used to cover an accumulated deficit, and the balance, if any, could be transferred to common stock as stock dividends based on the original shareholding ratio or distributed as cash dividends based on a resolution approved by the shareholders. Realized capital surplus includes the premium derived from the issuance of shares of stock in excess of par value and donations from shareholders received by the Company. In accordance with the Regulations Governing the Offering and Issuance of Securities by Securities Issuers, distribution of stock dividends from capital surplus in any one year shall not exceed 10% of paid-in capital.

(iii) Retained earnings

1) Legal reserve

If a company has no accumulated deficit, it may, pursuant to a resolution approved by the shareholders, distribute its legal reserve to its shareholders by issuing new shares or by distributing cash for the portion in excess of 25% of the paid-in capital.

2) Special reserve

In accordance with the requirements issued by the FSC, a portion of earnings shall be allocated as special reserve during earnings distribution. The Company shall make allocation of special reserve for the amount of the current-period total net reduction of other shareholders' equity. An equivalent amount of special reserve shall be allocated from the after-tax net profit in the period, plus items other than the after-tax net profit in the period that are included in the undistributed current-period earnings and the undistributed prior-period earnings. A portion of the undistributed prior-period earnings shall be reclassified to special earnings reserve (which does not qualify for earnings distribution) to account for cumulative changes to the net reduction of other shareholders' equity pertaining to prior periods. The amounts of subsequent reversals pertaining to the net reduction of other shareholders' equity shall qualify for additional distributions.

3) Earnings distribution

The Company's Articles of Incorporation stipulate that at least 10% of annual net income, after deducting accumulated deficit, if any, must be retained as legal reserve until such retention equals the amount of paid in capital. In addition, a special reserve shall be set aside in accordance with applicable laws and regulations. The remaining balance, together with the unappropriated earnings from the previous years, after retaining a certain portion of it for business considerations, can be distributed as dividends to shareholders. If dividends are distributed by issuing new shares, the distribution shall be approved by the shareholders' meeting. If dividends are distributed in the form of cash, a resolution shall be adopted by a majority vote at a meeting of the board of directors attended by more than two-thirds of the total number of directors; and in addition thereto a report of such distribution shall be submitted to the shareholders' meeting. Except for the distribution of capital surplus and legal reserve in accordance with applicable laws and regulations, the Company cannot distribute any earnings when there are no retained earnings.

Since the Company operates in an industry experiencing rapid change and development, earnings are distributed in consideration of the current year's earnings, the overall economic environment, related laws and decrees, as well as the Company's long term development and stability in its financial position. The Company has adopted a balance dividend policy, in which a cash dividend comprises at least 10% of the total dividend distribution.

The cash dividends appropriation of 2022 and 2021 earnings were approved by the Company's Board of Directors on February 21, 2023 and February 23, 2022, respectively. The resolved appropriation were as follows:

	2022		2021	
	Dividends per share (in dollars)	**Amount**	**Dividends per share (in dollars)**	**Amount**
Dividends per share:				
Cash dividends	$ 3.30	**404,871**	2.89	**294,272**

(iv) Other equity items (net after tax)

1) Foreign currency translation differences

	2023	2022
Balance at January 1	$ (39,687)	(74,366)
Foreign exchange differences arising from translation of foreign operations	(3,747)	34,679
Balance at December 31	**$ (43,434)**	**(39,687)**

2) Unrealized gains (losses) on financial assets measured at fair value through other comprehensive income

	2023	2022
Balance at January 1	$ (47,702)	(51,415)
Unrealized gains from investments in equity instruments measured at fair value through other comprehensive income	1,652	3,713
Balance at December 31	**$ (46,050)**	**(47,702)**

3) Unearned compensation cost

	2023	2022
Balance at January 1	$ -	(8,941)
Compensation cost arising from restricted stock issued to employees	-	8,941
Balance at December 31	**$ -**	**-**

(v) Non-controlling interests

	2023	2022
Balance at January 1	$ 139,721	136
Equity attributable to non-controlling interest:		
Net income	51,666	17,865
Distribution of cash dividend by subsidiaries to non-controlling interests	(37,677)	-
Changes in non-controlling interests	-	121,720
Balance at December 31	**$ 153,710**	**139,721**

(r) Share-based payment－Restricted stock to employees

For the years ended December 31, 2023 and 2022, the Group had the following share-based payment arrangements:

	Restricted stock to employees
Grant date	2021.01.06
Number of shares granted (thousand shares)	926
Contract term	2 years
Vesting conditions	(Note 2)
Qualified employees	(Note 1)

Note 1: Full-time employees who conformed to certain requirements

Note 2: The employees who were granted restricted stock are entitled to purchase the shares of restricted stock at the exercise price of $0. The total share of the restricted stocks issued was determined by achievement of the Company's operation objective for the year 2020. The vesting period of the restricted stock is 1～2 years subsequent to the grant date, and the restricted shares of stock will be vested by taking the individual employee's performance conditions into consideration. When the vesting conditions are met, the restricted stock received by the employees shall be transferred from an escrow account to the employee's security account. During the vesting period, the restricted stock could not be sold, pledged, transferred, gifted, or disposed of in any other forms, excluding inheritance; nevertheless, the rights of a shareholder (such as attendance, proposing, speaking, voting and election at the shareholders' meeting) are the same as those of the Company's shareholders but are executed by the custodian who will act based on law and regulations. The Company will take back the restricted stock from its employees and retire those shares when the vesting conditions are not met.

(i) The movements in number of restricted stock issued to employees (in thousand shares) were as follows:

	2023	**2022**
Balance at January 1	463	926
Vested	(463)	(463)
Balance at December 31	**-**	**463**

The fair value of the restricted stock to employees was $38.6 (in dollars) per share, which was determined by reference to the closing price of the Company's common stock traded on the Taiwan Stock Exchange at the grant date. For the years ended December 31, 2023 and 2022, the compensation cost for the restricted shares of stock amounted to $0 and $8,941, respectively.

(ii) Employee compensation cost

Expenses resulting from share-based payment transactions are as follows:

		2023	2022
Compensation cost from restricted stock issued to employees	$	-	8,941

(s) Earnings per share (“EPS”)

(i) Basic earnings per share

		2023	2022
Net income attributable to shareholders of the Company	$	553,046	559,126
Weighted-average number of ordinary shares outstanding (in thousands)		122,682	106,846
Basic earnings per share (in dollars)	$	4.51	5.23

(ii) Diluted earnings per share

		2023	2022
Net income attributable to shareholders of the Company	$	553,046	559,126
Weighted-average number of ordinary shares outstanding (in thousands)		122,682	106,846
Effect of dilutive potential common stock (in thousands):			
Remuneration to employees		1,392	2,195
Restricted stock to employees		-	463
Weighted-average number of ordinary shares outstanding (including effect of dilutive potential common stock)		124,074	109,504
Diluted earnings per share (in dollars)	$	4.46	5.11

(t) Revenue from contracts with customers

(i) Disaggregation of revenue

The Group recognizes revenue when control of the goods has been transferred to the customer. Disaggregation of revenue is based on the Group’ s location of business.

		2023		
		Segment		
		Asia	America and Europe	Total
Major products:				
Flash memory cards	$	4,143,841	670,385	4,814,226
Memory modules		2,436,419	304,119	2,740,538
Others		76,682	-	76,682
	$	6,656,942	974,504	7,631,446

	2022			
	Segment			
		Asia	America and Europe	Total
Major products:				
Flash memory cards	$	4,173,104	917,184	5,090,288
Memory modules		3,131,094	473,738	3,604,832
Others		101,915	-	101,915
	$	7,406,113	1,390,922	8,797,035

(ii) Contract balances

		December 31, 2023	December 31, 2022	January 1, 2022
Notes and accounts receivable (including related parties)	$	797,458	758,097	1,342,766
Less: loss allowance		(21,417)	(21,821)	(5,148)
	$	776,041	736,276	1,337,618

		December 31, 2023	December 31, 2022	January 1, 2022
Contract liabilities－current	$	41,034	177,632	37,810

For details on notes and accounts receivable and its loss allowance, please refer to note 6(d).

The amounts of revenue recognized for the years ended December 31, 2023 and 2022 that were included in the contract liabilities balances at January 1, 2023 and 2022 were $177,419 and $37,675, respectively.

(u) Remuneration to employees and directors

The Company’ s article of incorporation requires that earnings shall first to be offset against any deficit, then, a minimum of 4% will be distributed as remuneration to its employees and no more than 1.4% to its directors. Employees who are entitled to receive the abovementioned employee remuneration, in shares or cash, include the employees of the subsidiaries of the Company who meet certain specific requirement.

For the years ended December 31, 2023 and 2022, the Company estimated its remuneration to employees amounting to $70,405 and $83,479, respectively, and the remuneration to directors amounting to $10,119 and $10,683, respectively. The abovementioned estimated amounts are calculated based on the net profits before tax of each period (excluding the remuneration to employees and directors), multiplied by a certain percentage of the remuneration to employees and directors. The estimations are recognized as operating expenses. If the actual amounts differ from the estimated amounts, the differences shall be accounted as changes in accounting estimates and recognized as profit or loss in following year.

The abovementioned estimated remuneration to employees and directors is the same as the amount approved by the Board of Directors and will be paid in cash. Related information is available on the Market Observation Post System website of the Taiwan Stock Exchange.

(v) Non-operating income and loss

(i) Interest income

		2023	2022
Interest income from bank deposits	$	45,211	11,009

(ii) Other gains and losses, net

		2023	2022
Gains on disposal of property, plant and equipment	$	711	7
Foreign currency exchange gains		4,627	44,437
Losses on financial assets and liabilities at fair value through profit or loss		(4,262)	(38,948)
Impairment loss on non-financial assets		(46)	(303)
Others		5,792	10,923
	$	6,822	16,116

(iii) Finance costs

		2023	2022
Interest expense from bank loans	$	(12,358)	(5,944)
Interest expense from lease liabilities		(1,224)	(908)
	$	(13,582)	(6,852)

(w) Financial instruments

(i) Categories of financial instruments

1) Financial assets

		December 31, 2023	December 31, 2022
Financial assets at fair value through profit or loss	$	593	980
Financial assets at fair value through other comprehensive income		35,171	29,769
Financial assets measured at amortized cost:			
Cash and cash equivalents		1,061,474	1,419,376
Notes and accounts receivable (including related parties)		776,041	736,276
Other financial assets (including current and non-current)		1,574,598	1,386,465
Subtotal		3,412,113	3,542,117
Total	$	3,447,877	3,572,866

2) Financial liabilities

	December 31, 2023	December 31, 2022
Financial liabilities at fair value through profit or loss	$ 70	1,012
Financial liabilities measured at amortized cost:		
Short-term borrowings	61,410	92,145
Notes and accounts payable (including related parties)	1,142,956	718,672
Other payables	427,860	452,284
Lease liabilities (including current and non-current)	42,285	46,998
Long-term debt (including current portion)	23,579	30,124
Guarantee deposits	-	6,558
Subtotal	1,698,090	1,346,781
Total	**$ 1,698,160**	**1,347,793**

(ii) Fair value information

1) Financial instruments not measured at fair value

The Group considers that the carrying amounts of financial assets and financial liabilities measured at amortized cost approximate their fair values.

2) Financial instruments measured at fair value

The fair value of financial assets and liabilities at fair value through profit and loss and financial assets at fair value through other comprehensive income are measured on a recurring basis.

The table below analyzes financial instruments that are measured at fair value subsequent to initial recognition, grouped into Levels 1 to 3 based on the degree to which the fair value is observable. The different levels have been defined as follows:

a) Level 1: quoted prices (unadjusted) in active markets for identified assets or liabilities.

b) Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e., as prices) or indirectly (i.e., derived from prices).

c) Level 3: inputs for the assets or liabilities that are not based on observable market data (unobservable inputs).

	December 31, 2023				
		Fair Value			
	Carrying amount	Level 1	Level 2	Level 3	Total
Financial assets at fair value through profit or loss－current:					
Derivatives－foreign currency forward contracts	**$ 593**	**-**	**593**	**-**	**593**
Financial assets at fair value through other comprehensive income－non-current:					
Domestic unlisted stocks	$ 35,034	-	-	35,034	35,034
Foreign unlisted stocks	137	-	-	137	137
	$ 35,171	**-**	**-**	**35,171**	**35,171**
Financial liabilities at fair value through profit or loss－current:					
Derivatives－foreign currency forward contracts	**$ 70**	**-**	**70**	**-**	**70**

	December 31, 2022				
		Fair Value			
	Carrying amount	Level 1	Level 2	Level 3	Total
Financial assets at fair value through profit or loss－current:					
Derivatives－foreign exchange swaps	**$ 980**	**-**	**980**	**-**	**980**
Financial assets at fair value through other comprehensive income－non-current:					
Domestic unlisted stocks	$ 29,616	-	-	29,616	29,616
Foreign unlisted stocks	153	-	-	153	153
	$ 29,769	**-**	**-**	**29,769**	**29,769**
Financial liabilities at fair value through profit or loss－current:					
Derivatives－foreign currency forward contracts	$ 892	-	892	-	892
Derivatives－foreign exchange swaps	120	-	120	-	120
	$ 1,012	**-**	**1,012**	**-**	**1,012**

(iii) Valuation techniques used in fair value measurement

1) Non-derivative financial instruments

The fair value of financial instruments traded in active liquid markets is determined with reference to quoted market prices.

Except for the abovementioned financial instruments traded in an active market, the fair value of other financial instruments are based on the valuation techniques or the quotation from counterparty. The fair value using valuation techniques refers to the current fair value of other financial instruments with similar conditions and characteristics, or using a discounted cash flow method, or other valuation techniques which include model calculating with observable market data at the reporting date.

The fair value of unlisted stock held by the Group is estimated by using the market approach and is determined by reference to valuations of similar companies, third-party quotation, and recent financing and operating activities. The significant unobservable inputs are primarily the liquidity discounts. No quantitative information is disclosed due to that the possible changes in liquidity discounts would not cause significant potential financial impact.

2) Derivative financial instruments

The fair value of derivative financial instruments is determined using a valuation technique, generally accepted by market participants. The fair value of foreign currency forward contracts and foreign exchange swaps is usually determined by the forward currency exchange rate.

(iv) Transfers between levels of the fair value hierarchy

There were no transfers among fair value hierarchies for the years ended December 31, 2023 and 2022.

(v) Movement in financial assets included in Level 3 of fair value hierarchy

	2023	2022
Balance, beginning of period	$ 29,769	26,056
Purchased	3,750	-
Gains recognized in other comprehensive income, and presented in unrealized gains on financial assets measured at fair value through other comprehensive income	1,652	3,713
Balance, end of period	$ 35,171	29,769

(x) Financial risk management

The Group is exposed to credit risk, liquidity risk, and market risk (including currency risk, interest rate risk, and other market price risk). The Group has disclosed the information on exposure to the aforementioned risks and the Group's policies and procedures to measure and manage those risks as well as the quantitative information below.

The Group's management monitors and reviews financial activities in accordance with procedures required by relevant regulations and internal controls. Internal auditors undertake both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the Group's Board of Directors.

The Group's Board of Directors is responsible for developing and monitoring the Group's risk management policies. The Group's risk management policies are established to identify and analyze the risks faced by the Group, to set appropriate risk limits and controls, and to monitor adherence to the controls. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Group's operations.

(i) Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty of a financial instrument fails to meet its contractual obligations, and arises principally from the Group's cash and cash equivalents, derivative instruments, receivables from customers and time deposits classified as other financial assets. As of December 31, 2023 and 2022, the Group's maximum exposure to credit risk amounted to $3,447,877 and $3,572,866, respectively.

The Group maintains bank deposits and enters into derivative transactions with various reputable financial institutions; therefore, the exposure related to potential default by those counter-parties is not considered significant.

In order to reduce credit risk of accounts receivable, the Group has established a credit policy under which each customer is analyzed individually for creditworthiness for the purpose of setting the credit limit. Additionally, the Group continuously evaluates the credit quality of its customers and utilizes its insurance to minimize the credit risk. As of December 31, 2023 and 2022, the Group has insured credit insurance that cover accounts receivable amounting to $550,770 and $391,241, respectively. When the debtors are in default, the Group will receive 90% of the credit insurance.

The Group believes that there is no significant concentration of credit risk due to the Group's large number of customers and their wide geographical spread.

(ii) Liquidity risk

Liquidity risk is the risk that the Group will encounter difficulty in settling its financial liabilities by delivering cash or other financial assets. The Group manages liquidity risk by monitoring regularly the current and mid- to long-term cash demand, maintaining adequate cash and banking facilities, and ensuring compliance with the terms of the loan agreements. As of December 31, 2023 and 2022, the Group had unused credit facilities of $1,650,490 and $1,895,616, respectively.

The table below summarizes the maturity profile of the Group' s financial liabilities based on contractual undiscounted payments.

		Carrying amount	Contractual cash flows	Within 1 year	More than 1 year
December 31, 2023					
Non-derivative financial liabilities:					
Short-term borrowings	$	61,410	(61,755)	(61,755)	-
Long-term debt (including current portion)		23,579	(27,686)	(1,690)	(25,996)
Notes and accounts payable (including related parties)		1,142,956	(1,142,956)	(1,142,956)	-
Other payables		427,860	(427,860)	(427,860)	-
Lease liabilities		42,285	(43,522)	(20,442)	(23,080)
Derivative financial instruments:					
Foreign currency forward contracts:					
Inflow		-	4,057	4,057	-
Outflow		70	(4,127)	(4,127)	-
December 31, 2022					
Non-derivative financial liabilities:					
Short-term borrowings	$	92,145	(92,531)	(92,531)	-
Long-term debt (including current portion)		30,124	(34,312)	(2,554)	(31,758)
Notes and accounts payable (including related parties)		718,672	(718,672)	(718,672)	-
Other payables		452,284	(452,284)	(452,284)	-
Lease liabilities		46,998	(48,705)	(16,492)	(32,213)
Guarantee deposits		6,558	(6,558)	-	(6,558)
Derivative financial instruments:					
Foreign currency forward contracts:					
Inflow		-	102,995	102,995	-
Outflow		892	(103,887)	(103,887)	-
Foreign exchange swaps:					
Inflow		-	92,025	92,025	-
Outflow		120	(92,145)	(92,145)	-

The Group does not expect that the cash flows included in the maturity analysis would occur significantly earlier or at significantly different amounts.

(iii) Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates, and equity prices, will affect the Group's income or the value of its financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return.

The Group utilizes derivative financial instruments to manage market risk. All such transactions are carried out within the guidelines set by the Group's Board of Directors.

1) Foreign currency risk

The Group utilizes foreign currency forward contracts and foreign exchange swaps to hedge its foreign currency exposure with respect to its sales and purchases. The maturity dates of derivative financial instruments the Group entered into were less than six months and did not conform to the criteria for hedge accounting. These financial instruments help to reduce, but do not eliminate, the impact of foreign currency exchange rate movements.

The Group's exposure to foreign currency risk arises from cash and cash equivalents, notes and accounts receivable (including related parties), notes and accounts payable (including related parties), other payables (including related parties), other financial assets －current and loans and borrowings that are denominated in a currency other than the functional currencies of the Group entities. At the reporting date, the carrying amounts of the Group's significant monetary assets and liabilities denominated in a currency other than the functional currencies of the Group entities and their respective sensitivity analysis were as follows (including the monetary items that have been eliminated in the accompanying consolidated financial statements):

(Amounts in Thousands of New Taiwan Dollars)

	December 31, 2023				
	Foreign currency (in thousands)	**Exchange rate**	**NTD (in thousands)**	**Change in magnitude**	**Pre-tax effect on profit or loss (in thousands)**
Financial assets					
Monetary items					
USD	$ 27,686	30.705	850,099	1%	8,501
CNY	20,542	4.328	88,906	1%	889
JPY	21,676	0.217	4,704	1%	47
Financial liabilities					
Monetary items					
USD	30,735	30.705	943,718	1%	9,437
CNY	3,170	4.328	13,720	1%	137
JPY	1,298	0.217	282	1%	3

	December 31, 2022				
	Foreign currency (in thousands)	**Exchange rate**	**NTD (in thousands)**	**Change in magnitude**	**Pre-tax effect on profit or loss (in thousands)**
Financial assets					
Monetary items					
USD	$ 29,166	30.715	895,834	1%	8,958
CNY	14,108	4.422	62,386	1%	624
JPY	22,066	0.233	5,141	1%	51
Financial liabilities					
Monetary items					
USD	21,701	30.715	666,546	1%	6,665
CNY	122	4.422	539	1%	5
JPY	514	0.233	120	1%	1

As the Group deal in diverse foreign currencies, gains and losses on foreign exchange were summarized as a single amount. The aggregate of realized and unrealized foreign exchange gains for the years ended December 31, 2023 and 2022 were $4,627 and $44,437, respectively.

2) Interest rate risk

The Group' s bank loans carried floating interest rates. To manage the interest rate risk, the Group periodically assesses the interest rates of bank loans and maintains good relationships with financial institutions to obtain lower financing costs. The Group also strengthens the management of working capital to reduce the dependence on bank loans, as well as the risk arising from fluctuation of interest rates.

If interest rates had been 100 basis points (1%) higher/lower, with all other variables held constant, pre-tax income for the years ended December 31, 2023 and 2022 would have been $850 and $1,223, respectively, lower/higher, which mainly resulted from the borrowings with floating interest rates.

3) Other market price risk

The Group has long-term investments in unlisted stocks, which the Group does not actively participate in trading. The Group anticipates that there is no significant market risk related to the investments.

(y) Capital management

In consideration of the industry dynamics and future developments, as well as external environment factors, the Group maintains an optimal capital structure to enhance long-term shareholder value by managing its capital in a manner to ensure that it has sufficient and necessary financial resources to fund its working capital needs, research and development expenses, dividend payments, and other business requirements for continuing operations and to reward shareholders and take into consideration the interests of other shareholders. The Group monitors its capital through reviewing the liability-to-equity ratio periodically.

The Group's liability-to-equity ratios at the end of each reporting period were as follows:

	December 31, 2023	December 31, 2022
Total liabilities	$ 1,909,441	1,718,127
Total equity	$ 4,462,071	4,303,909
Liability-to-equity ratio	42.79%	39.92%

The Group increased its notes and accounts payable (including related parties) due to the increase of stock level. It also resulted in the increasing of liability-to-equity ratio.

(z) Investing and financing activities not affecting current cash flow

(i) For issuance of additional common shares in exchange for other company's common shares on August 1, 2022, please refer to note 6(g).

(ii) For acquisition of right-of-use assets under operating lease for the years ended December 31, 2023 and 2022, please refer to note 6(i).

(iii) Reconciliation of liabilities arising from financing activities was as follows:

			Non-cash changes	
	January 1, 2023	Cash flows	Acquisition	December 31, 2023
Short-term borrowings	$ 92,145	(30,735)	-	61,410
Long-term debt	30,124	(6,545)	-	23,579
Lease liabilities	46,998	(20,956)	16,243	42,285
Guarantee deposits	6,558	(6,558)	-	-
	$ 175,825	(64,794)	16,243	127,274

			Non-cash changes		
	January 1, 2022	Cash flows	Acquisition	Acquisition through business combination	December 31, 2022
Short-term borrowings	$ 251,979	(164,834)	-	5,000	92,145
Long-term debt	-	(22,716)	-	52,840	30,124
Lease liabilities	32,934	(17,965)	30,687	1,342	46,998
Guarantee deposits	13,845	(7,287)	-	-	6,558
	$ 298,758	(212,802)	30,687	59,182	175,825

7. Related-party transactions:

(a) Name and relationship with related parties

The following are the entities that have had transactions with the Group during the periods covered in the consolidated financial statements.

Name of related parties	Relationship with the Group
Phison Electronics Corporation (“Phison”)	The Company’s director
JoiiUp Technology Inc. (“JoiiUp”)	The Group’s associate
OTO Photonics Inc. (“OTO”)	The Group’s other related party
Directors, general manager and vice general managers	The Group’s key management personnel

(b) Significant related-party transactions

(i) Revenue

	2023	2022
The Group’s key management personnel (the Company’s director)	$ 2,648	8,412

The sales prices and payment terms of sales to related parties are not different from those with third-party customers. The payment terms for related parties and third-party customers are EOM 45 days and 30～90 days calculated from the delivery date, respectively. The Group does not receive any collateral for the receivables from related parties. The Group has not recognized a specific allowance for doubtful receivables after assessment.

(ii) Purchases

	2023	2022
The Group’s key management personnel－Phison (the Company’s director)	$ 1,333,729	1,204,195
Other related parties	439	432
	$ 1,334,168	1,204,627

There are no significant differences between the purchase prices for related parties and those for third-party vendors. The payment terms of EOM 45～60 days show no significant difference between related parties and third-party vendors.

(iii) Receivables

Account	Related-party categories	December 31, 2023	December 31, 2022
Accounts receivable from related parties	The Group’s key management personnel (the Company’s director)	$ 558	377

(iv) Payables

Account	Related-party categories	December 31, 2023	December 31, 2022
Accounts payable to related parties	The Group's key management personnel－Phison (the Company's director)	$ 395,743	214,210
Accounts payable to related parties	Other related parties	14	135
Other payables to related parties	The Group's key management personnel (the Company's director)	245	146
		$ 396,002	214,491

(v) Operating expenses

The operating expenses related to the after-sale service provided by related parties and sundry purchases were as follows:

Account	Related-party categories	2023	2022
Operating expenses	The Group's key management personnel (the Company's director)	$ 353	440
	Associates	50	50
	Other related parties	-	3
		$ 403	493

(c) Compensation for key management personnel

	2023	2022
Short-term employee benefits	$ 82,088	79,564
Post-employment benefits	432	432
Share-based payments	-	3,875
	$ 82,520	83,871

8. Pledged assets:

The carrying amounts of the assets pledged as collateral are detailed below:

Pledged assets	Pledged to secure	December 31, 2023	December 31, 2022
Property, plant and equipment	Bank loans and credit facilities	$ 58,472	59,404

9. Significant commitments and contingencies:

(a) Significant unrecognized commitments

	December 31, 2023	December 31, 2022
Unused letters of credit	$ 15,000	-

(b) As of December 31, 2023 and 2022, the Group had outstanding letters of guarantee amounting to $12,000 for the purpose of the payment of customs duties.

10. Significant loss from disaster: None

11. Significant subsequent events: None

12. Others:

(a) Employee benefits, depreciation and amortization expenses categorized by function were as follows:

	2023			2022		
	Cost of revenue	Operating expenses	Total	Cost of revenue	Operating expenses	Total
Employee benefits:						
Salaries	163,838	613,171	777,009	157,308	580,540	737,848
Insurance	16,157	47,021	63,178	13,727	40,271	53,998
Pension	6,081	23,699	29,780	5,663	21,211	26,874
Others	9,337	31,007	40,344	8,778	31,705	40,483
Depreciation	20,713	35,215	55,928	18,891	33,766	52,657
Amortization	3,189	21,978	25,167	3,106	12,901	16,007

13. Additional disclosures:

(a) Information on significant transactions:

In accordance with the requirements of the Regulations Governing the Preparation of Financial Reports by Securities Issuers, the Group discloses the following information on significant transactions for the year ended December 31, 2023:

(i) Financing provided to other parties: None

(ii) Guarantee and endorsement provided to other parties: None

(iii) Marketable securities held at the reporting date (excluding investments in subsidiaries and associates):

(In Thousands of Shares)

Investing Company	Marketable Securities Type and Name	Relationship with the Securities Issuer	Financial Statement Account	December 31, 2023				Maximum Percentage of Ownership during 2023		Note
				Shares/ Units	Carrying Value	Percentage of Ownership	Fair value	Shares/ Units	Percentage of Ownership	
The Company	Stock: Formosa Golf and Country Club Corp.	-	Financial assets at fair value through other comprehensive income－non-current	3.6	10,011	0.01%	10,011	3.6	0.01%	-
The Company	Stock: OTO Photonics Inc.	-	Financial assets at fair value through other comprehensive income－non-current	3,772	21,273	11.30%	21,273	3,772	11.30%	-
The Company	Stock: Koson Technology Inc.	-	Financial assets at fair value through other comprehensive income－non-current	150	3,750	14.85%	3,750	150	14.85%	-
AMS	Stock: Futurepath Technology (Shenzhen) Co., Ltd.	-	Financial assets at fair value through other comprehensive income－non-current	31.5	137	0.03%	137	31.5	0.03%	-

(iv) Marketable securities for which the accumulated purchase or sale amounts for the period exceed \$300 million or 20% of the paid-in capital: None

(v) Acquisition of real estate which exceeds \$300 million or 20% of the paid-in capital: None

(vi) Disposal of real estate which exceeds \$300 million or 20% of the paid-in capital: None

(vii) Total purchases from and sales to related parties which exceed $100 million or 20% of the paid-in capital:

Company Name	Related Party	Nature of Relationship	Transaction Details				Transactions with Terms Different from Others		Notes/Accounts Receivable or (Payable)		Note
			Purchases/ (Sales)	Amount	% of Total Purchases/ (Sales)	Payment Terms	Unit Price	Payment Terms	Ending Balance	% of Total Notes/Accounts Receivable or (Payable)	
The Company	AMA	The Company' s subsidiary	(Sales)	(280,677)	(4) %	OA30	-	-	13,651	2 %	Note
The Company	AMK	The Company' s subsidiary	(Sales)	(144,083)	(2) %	OA30	-	-	23,140	3 %	Note
The Company	AMH	The Company' s subsidiary	(Sales)	(495,465)	(7) %	OA30	-	-	29,582	4 %	Note
The Company	AMC	The Company' s subsidiary	(Sales)	(436,272)	(7) %	M60	-	-	77,702	11 %	Note
The Company	Phison	The Company' s director	Purchases	1,047,711	18 %	M45	-	-	(352,333)	(32) %	-
UD	Phison	The Company' s director	Purchases	286,018	80 %	M45	-	-	(43,410)	(82) %	-
AMA	The Company	AMA' s parent company	Purchases	280,677	100 %	OA30	-	-	(13,651)	(100) %	Note
AMK	The Company	AMK' s parent company	Purchases	144,083	100 %	OA30	-	-	(23,140)	(100) %	Note
AMH	The Company	AMH' s parent company	Purchases	495,465	100 %	OA30	-	-	(29,582)	(100) %	Note
AMC	The Company	AMC' s parent company	Purchases	436,272	98 %	M60	-	-	(77,702)	(100) %	Note

Note: The above intercompany transactions have been eliminated when preparing the consolidated financial statements.

(viii) Receivables from related parties which exceed $100 million or 20% of the paid-in capital: None

(ix) Transactions about derivative instruments: Please refer to note 6(b)

(x) Business relationships and significant intercompany transactions:

Number (Note 1)	Company Name	Counterparty	Nature of Relationship (Note 2)	Transaction Details			
				Account	Amount	Payment Terms	Percentage of Consolidated Operating Revenue or Total Assets
0	The Company	AMA	1	Sales	280,677	OA30	4%
0	The Company	AMK	1	Sales	144,083	OA30	2%
0	The Company	AMH	1	Sales	495,465	OA30	6%
0	The Company	AMC	1	Sales	436,272	M60	6%
0	The Company	AMJ	1	Sales	39,349	M60	1%
0	The Company	UD	1	Sales	34,275	M30	-
0	UD	The Company	2	Sales	1,713	M30	-
0	The Company	AMA	1	Accounts receivable	13,651	OA30	-
0	The Company	AMK	1	Accounts receivable	23,140	OA30	-
0	The Company	AMH	1	Accounts receivable	29,582	OA30	-
0	The Company	AMC	1	Accounts receivable	77,702	M60	1%
0	The Company	AMJ	1	Accounts receivable	3,050	M60	-
0	The Company	UD	1	Accounts receivable	5,903	M30	-

Note 1: Parties to the intercompany transactions are identified and numbered as follows:
1. "0" represents the Company.
2. Subsidiaries are numbered from "1".

Note 2: The relationships with counterparties are as follows:
No. "1" represents the transactions from the Company to subsidiary.
No. "2" represents the transactions from subsidiary to the Company.

Note 3: Intercompany relationships and significant intercompany transactions are disclosed only for sales and accounts receivable. The corresponding purchases and accounts payable are not disclosed.

(b) Information on investees:

For the year ended December 31, 2023, the information on investees is as follows (excluding investments in Mainland China):

(In Thousands of Shares)

Investor	Investee	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2023			Maximum Percentage of Ownership during 2023		Net Income (Loss) of the Investee	Investment Income (Loss)	Note
				December 31, 2023	December 31, 2022	Shares	Percentage of Ownership	Carrying Value	Shares	Percentage of Ownership			
The Company	AMA	USA	Sales of memory modules and storage memory devices	610	610	20	100.00%	319,691	20	100%	23,993	23,993	Note
The Company	ACYB	British Virgin Islands	Investment and holding activity	18,542	18,542	2,636	100.00%	51,325	2,636	100%	7,028	7,028	Note
The Company	AMJ	Japan	Sales of memory modules and storage memory devices	2,918	2,918	0.2	100.00%	20,213	0.2	100%	752	752	Note
The Company	ATPL	India	Auxiliary sales of memory modules and storage memory devices	915	915	29	100.00%	1,536	29	100%	113	113	Note
The Company	AMK	Hong Kong	Sales of memory modules and storage memory devices	20,917	20,917	5,000	100.00%	13,029	5,000	100%	1,088	1,088	Note
The Company	AMH	Netherlands	Sales of memory modules and storage memory devices	130,469	130,469	80	100.00%	77,556	80	100%	10,684	10,684	Note
The Company	JoiiUp	Taiwan	Cloud services and software development	7,500	7,500	750	10.35%	1,351	750	10.35%	(5,758)	(596)	-
The Company	UD	Taiwan	Manufacture and sales of memory modules and storage memory devices	380,815	380,815	4,932	68.54%	447,904	4,932	68.54%	176,618	112,593	Note

Note: The above intercompany transactions have been eliminated when preparing the consolidated financial statements.

(c) Information on investment in Mainland China:

(i) Name and main businesses and products of investee companies in Mainland China:

Investee Company Name	Main Businesses and Products	Total Amount of Paid-in Capital	Method of Investment (Note 1)	Accumulated Outflow of Investment from Taiwan as of January 1, 2023	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2023	Net Income (Loss) of Investee	% of Ownership of Direct or Indirect Investment	Maximum Percentage of Ownership during 2023		Investment Income (Loss)	Carrying Value as of December 31, 2023	Accumulated Inward Remittance of Earnings as of December 31, 2023
					Outflow	Inflow				Shares	Percentage of Ownership			
Apacer Electronic (Shanghai) Co., Ltd. (AMC)	Sales of memory modules and storage memory devices	15,352 (USD 500 thousand)	Type 2	15,352 (USD 500 thousand)	-	-	15,352 (USD 500 thousand)	7,015	100.00%	(Note 4)	100.00%	7,015 (Note 2)	48,073	-
Shenzhen Kylinesports Technology Co. (AMS)	Sales of gaming products	22,967 (USD 748 thousand)	Type 2	18,362 (USD 598 thousand)	-	-	18,362 (USD 598 thousand) (Note 5)	(1,457)	99.00%	(Note 4)	99.00%	(1,442) (Note 3)	11,145	-

Note 1: Method of investments:
- Type 1: Direct investment in Mainland China.
- Type 2: Indirect investment in Mainland China through a holding company established in a third country.
- Type 3: Others.

Note 2: Investment income or loss recognized based on the financial statements audited by the auditors of the Company.
Note 3: Investment income or loss recognized based on the unaudited financial statements of investee companies.
Note 4: There was no shares as the investee company is a limited liability company.
Note 5: The amount of AMK reinvestments amounting to US$134 thousand was excluded.
Note 6: The above intercompany transactions have been eliminated when preparing the consolidated financial statements.
Note 7: The above amounts were translated into New Taiwan dollars at the exchange rate of US$1=NT$30.705.

(ii) Limits on investments in Mainland China:

Accumulated Investment in Mainland China as of December 31, 2023	Investment Amounts Authorized by Investment Commission, MOEA	Upper Limit on Investment Authorized by Investment Commission, MOEA
33,714 (USD1,098 thousand)	37,829 (USD1,232 thousand)	2,585,017

(iii) Significant transactions with investee companies in Mainland China:

The transactions between parent and investee companies in Mainland China (the intercompany transaction) have been eliminated when preparing the consolidated financial statements. Please refer to section "Information on significant transactions" and "Business relationships and significant intercompany transactions" for detail description.

(d) Major shareholders:

Shareholding / Major Shareholder's Name	Shares	Percentage
Phison Electronics Corporation	12,554,580	10.23%
Acer Inc.	11,710,000	9.54%

14. Segment information:

(a) General information

The Group has two reportable segments: Asia segment and America and Europe segment. The Asia segment engages in the manufacturing, maintenance, research and development, and sale of the Group's products. The America and Europe segment engages in the sale of the Group's products.

The Group's reportable segments are separated by geographical segments. Each segment provides different organizational functions and marketing strategies, and thus should be managed separately.

(b) Reportable segments, profit or loss, segment assets, basis of measurement, and reconciliation

The Group uses income before income tax as the measurement for segment profit and the basis of resource allocation and performance assessment. There was no material inconsistency between the accounting policies adopted for the operating segments and the accounting policies described in note 4. The reporting amount is consistent with the report used by chief operating decision maker.

The Group's operating segment information and reconciliation are as follows:

	2023			
	Asia	**America and Europe**	**Adjustments and eliminations**	**Total**
External revenue	$ 6,656,942	974,504	-	7,631,446
Intra-group revenue	1,438,331	-	(1,438,331)	-
Total segment revenue	**$ 8,095,273**	**974,504**	**(1,438,331)**	**7,631,446**
Segment profit (loss)	**$ 872,904**	**47,113**	**(171,628)**	**748,389**

	2022			
	Asia	**America and Europe**	**Adjustments and eliminations**	**Total**
External revenue	$ 7,406,113	1,390,922	-	8,797,035
Intra-group revenue	1,907,295	3	(1,907,298)	-
Total segment revenue	**$ 9,313,408**	**1,390,925**	**(1,907,298)**	**8,797,035**
Segment profit (loss)	**$ 755,731**	**38,517**	**(80,773)**	**713,475**

(c) Product information

Revenues from external customers are detailed below:

Region		**2023**	**2022**
Flash memory products	$	4,814,226	5,090,288
Memory modules		2,740,538	3,604,832
Others		76,682	101,915
	$	7,631,446	8,797,035

(d) Geographic information

In presenting information on the basis of geography, segment revenue is based on the geographical location of customers, and segment assets are based on the geographical location of the assets.

Revenues from external customers are detailed below:

Region		**2023**	**2022**
Hong Kong	$	1,241,655	1,404,514
Taiwan		1,239,570	1,825,755
Mainland China		593,714	846,584
Americas		465,913	786,196
Japan		405,800	530,195
Others		3,684,794	3,403,791
	$	7,631,446	8,797,035

Region		**2023**	**2022**
Taiwan	$	1,153,881	1,182,651
Americas		13,211	17,188
Netherlands		8,198	10,484
Japan		4,282	660
Others		5,152	1,156
	$	1,184,724	1,212,139

Non-current assets include property, plant and equipment, right-of-use assets, intangible assets, and other assets, but do not include financial instruments and deferred income tax assets.

(e) Major customer information

The Group doesn’ t have a single customer representing at least 10% of revenue in the consolidated statements of comprehensive income.

(II) Individual financial report

Independent Auditors' Report

To the Board of Directors of Apacer Technology Inc.:

Opinion

We have audited the parent-company-only financial statements of Apacer Technology Inc. (the "Company"), which comprise the parent-company-only balance sheets as of December 31, 2023 and 2022, the parent-company-only statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes to the parent-company-only financial statements, including a summary of material accounting policies.

In our opinion, the accompanying parent-company-only financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and its financial performance and its cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers.

Basis for Opinion

We conducted our audits in accordance with the Regulations Governing Financial Statement Audit and Attestation Engagements of Certified Public Accountants and Standards on Auditing of the Republic of China. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Parent-Company-Only Financial Statements section of our report. We are independent of the Company in accordance with The Norm of Professional Ethics for Certified Public Accountant of the Republic of China, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis of our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the parent-company-only financial statements of the current period. These matters were addressed in the context of our audit of parent-company-only financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters for the Company's parent-company-only financial statements for the year ended December 31, 2023 are stated as follows:

1. Valuation of inventories

   Please refer to notes 4(g), 5(a) and 6(e) for the accounting policy on inventories, "Critical accounting judgments and key sources of estimation uncertainty" for estimation uncertainty of inventory valuation, and "Inventories" for the related disclosures, respectively, of the notes to parent-company-only financial statements.

   <u>Description of key audit matter:</u>

   The Company's inventories are measured at the lower of cost and net realizable value. Management is required to make judgments and estimates in determining the net realizable value of inventories on the reporting date. The market prices of main raw materials of the Company, constituting the majority amount of product cost, fluctuate rapidly and the life cycle of certain products of the Company are short, which could possibly result in a price decline and obsolescence of inventories, wherein the inventories cost may exceed its net realizable value, as the Company fails to timely respond to market changes. Therefore, the valuation of inventories has been identified as one of the key audit matters.

   <u>How the matter was addressed in our audit:</u>

   In relation to the key audit matters above, our principal audit procedures included obtaining and understanding the Company's accounting policy of valuation of inventories, performing a retrospective test to evaluate the reasonableness of the accounting policy of valuation of inventories; as well as performing a sample test of the estimated selling price provided by Management to assess the reasonableness of the net realizable value and allowance for inventory valuation loss.

2. Assessment of impairment of goodwill from investments in subsidiaries

   Please refer to notes 4(m), 5(b) and 6(f) for the accounting policy on impairment of non-financial assets, "Critical accounting judgments and key sources of estimation uncertainty" for estimation uncertainty of impairment of goodwill, and "Impairment test on Goodwill" for the related disclosures, respectively, of the notes to parent-company-only financial statements.

   <u>Description of key audit matter:</u>

   Goodwill arising from acquisition of subsidiaries, which are included in the carrying amount of investments accounted for using equity method, is subject to impairment test annually or at the time there are indications that goodwill may have been impaired. The assessment of the recoverable amount of the cash-generating unit of goodwill involves management's judgment and estimation. Accordingly, the assessment of impairment of goodwill has been identified as one of the key audit matters.

   <u>How the matter was addressed in our audit:</u>

   In relation to the key audit matter above, our principal audit procedures included obtaining the assessment of goodwill impairment provided by the management; assessing the appropriateness of the estimation base and key assumptions, including the discount rate, expected sales growth rate and future cash flow projections, used by the management in measuring the recoverable amount; performing a sensitivity analysis of key assumptions and results; and assessing the adequacy of the Company's disclosures with respect to the related information.

Responsibilities of Management and Those Charged with Governance for the Parent-Company-Only Financial Statements

Management is responsible for the preparation and fair presentation of the parent-company-only financial statements in accordance with Regulations Governing the Preparation of Financial Reports by Securities Issuers, and for such internal control as management determines is necessary to enable the preparation of parent-company-only financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the parent-company-only financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance (including members of the Audit Committee) are responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Parent-Company-Only Financial Statements

Our objectives are to obtain reasonable assurance about whether the parent-company-only financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Standards on Auditing of the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these parent-company-only financial statements.

As part of an audit in accordance with the Standards on Auditing of the Republic of China, we exercise professional judgment and professional skepticism throughout the audit. We also:

1. Identified and assessed the risks of material misstatement of the parent-company-only financial statements, whether due to fraud or error, designed and performed audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

2. Obtained an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

3. Evaluated the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

4. Concluded on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the parent-company-only financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

5. Evaluated the overall presentation, structure and content of the parent-company-only financial statements, including the disclosures, and whether the parent-company-only financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

6. Obtained sufficient and appropriate audit evidence regarding the financial information of the investees accounted for using equity method to express an opinion on the parent-company-only financial statements. We are responsible for the direction, supervision and performance of the audit. We remained solely responsible for our audit opinion.

We communicated with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identified during our audit.

We also provided those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determined those matters that were of most significance in the audit of the parent-company-only financial statements for the year ended December 31, 2023 and are therefore the key audit matters. We described these matters in our auditor’s report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determined that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audit resulting in this independent auditors’ report are Tzu-Chieh Tang and Wei-Ming Shih.

KPMG

Taipei, Taiwan (Republic of China)
February 23, 2024

(English Translation of Parent-Company-Only Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC.

Balance Sheets

December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars)

	Assets	December 31, 2023 Amount	%	December 31, 2022 Amount	%
	Current assets:				
1100	Cash and cash equivalents (note 6(a))	$ 541,914	9	797,322	14
1110	Financial assets at fair value through profit or loss－current (note 6(b))	593	-	-	-
1170	Notes and accounts receivable, net (notes 6(d) and (r))	557,877	9	535,434	10
1180	Accounts receivable from related parties (notes 6(d), (r) and 7)	153,586	3	181,113	3
1310	Inventories (note 6(e))	1,362,825	23	714,652	13
1470	Other current assets	85,089	1	85,451	2
1476	Other financial assets－current (note 6(a))	1,299,670	22	1,197,800	22
	Total current assets	4,001,554	67	3,511,772	64
	Non-current assets:				
1517	Financial assets at fair value through other comprehensive income－non-current (note 6(c))	35,034	1	29,616	-
1550	Investments accounted for using equity method (note 6(f))	932,605	15	862,452	16
1600	Property, plant and equipment (note 6(g))	853,020	14	854,215	16
1755	Right-of-use assets (note 6(h))	13,043	-	18,700	-
1780	Intangible assets (note 6(i))	33,705	1	39,156	1
1840	Deferred income tax assets (note 6(n))	132,300	2	164,300	3
1980	Other financial assets－non-current	2,205	-	2,205	-
1990	Other non-current assets	2,195	-	2,736	-
	Total non-current assets	2,004,107	33	1,973,380	36
	Total assets	$ 6,005,661	100	5,485,152	100

	Liabilities and Equity	December 31, 2023 Amount	%	December 31, 2022 Amount	%
	Current liabilities:				
2100	Short-term borrowings (note 6(j))	$ 61,410	1	92,145	2
2120	Financial liabilities at fair value through profit or loss－current (note 6(b))	70	-	1,012	-
2170	Notes and accounts payable	743,282	12	490,811	9
2180	Accounts payable to related parties (note 7)	352,347	6	134,803	3
2200	Other payables (note 6(s))	385,399	7	408,972	8
2220	Other payables to related parties (note 7)	2,158	-	1,583	-
2230	Current income tax liabilities	54,042	1	69,610	1
2250	Provisions－current (note 6(l))	8,308	-	9,500	-
2280	Lease liabilities－current (note 6(k))	9,259	-	9,062	-
2300	Other current liabilities (note 6(r))	52,308	1	73,419	1
	Total current liabilities	1,668,583	28	1,290,917	24
	Non-current liabilities:				
2570	Deferred income tax liabilities (note 6(n))	307	-	-	-
2580	Lease liabilities－non-current (note 6(k))	4,161	-	10,065	-
2640	Net defined benefit liabilities (note 6(m))	24,249	-	19,982	-
	Total non-current liabilities	28,717	-	30,047	-
	Total liabilities	1,697,300	28	1,320,964	24
	Equity (note 6(o)):				
3100	Common stock	1,226,882	21	1,226,882	23
3200	Capital surplus	925,825	15	924,322	17
3300	Retained earnings	2,245,138	37	2,100,373	38
3400	Other equity	(89,484)	(1)	(87,389)	(2)
	Total equity	4,308,361	72	4,164,188	76
	Total liabilities and equity	$ 6,005,661	100	5,485,152	100

See accompanying notes to parent-company-only financial statements.

(English Translation of Parent-Company-Only Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC.

Statements of Comprehensive Income

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars, Except for Earnings Per Share)

		2023		2022	
		Amount	**%**	**Amount**	**%**
4000	**Revenue (notes 6(r) and 7)**	$ 6,627,663	100	8,224,555	100
5000	**Cost of revenue (notes 6(e), (g), (i), (k), (l), (m), (p), 7 and 12)**	(5,406,242)	(82)	(6,882,195)	(84)
	Gross profit before unrealized gross profit	1,221,421	18	1,342,360	16
5920	Realized (unrealized) gross profit	(1,175)	-	913	-
	Gross profit	1,220,246	18	1,343,273	16
	Operating expenses (notes 6(d), (g), (h), (i), (k), (m), (p), (s), 7 and 12):				
6100	Selling expenses	(367,746)	(5)	(364,460)	(4)
6200	Administrative expenses	(219,155)	(3)	(218,850)	(3)
6300	Research and development expenses	(169,477)	(3)	(159,471)	(2)
6450	Reversal of (recognized) expected credit losses	404	-	(16,673)	-
6000	**Total operating expenses**	(755,974)	(11)	(759,454)	(9)
	Operating income	464,272	7	583,819	7
	Non-operating income and loss (notes 6(f), (g), (i), (k) and (t)):				
7100	Interest income	27,669	1	5,219	-
7020	Other gains and losses, net	7,026	-	12,332	-
7050	Finance costs	(12,343)	-	(6,217)	-
7070	Share of profits of subsidiaries and associates	155,655	2	73,746	1
	Total non-operating income and loss	178,007	3	85,080	1
	Income before income tax	642,279	10	668,899	8
7950	**Less: Income tax expenses (note 6(n))**	(89,233)	(2)	(109,773)	(1)
	Net income	553,046	8	559,126	7
	Other comprehensive income (notes 6(m), (n), (o) and (u)):				
8310	**Items that will not be reclassified subsequently to profit or loss:**				
8311	Remeasurements of defined benefit plans	(4,262)	-	20,565	-
8316	Unrealized gains from investments in equity instruments measured at fair value through other comprehensive income	1,668	-	3,867	-
8330	Share of other comprehensive income of subsidiaries	(16)	-	(154)	-
8349	Less: income tax related to items that will not be reclassified subsequently to profit or loss	852	-	(4,113)	-
		(1,758)	-	20,165	-
8360	**Items that may be reclassified subsequently to profit or loss**				
8361	Exchange differences on translation of foreign operations	(3,747)	-	34,679	-
8399	Less: income tax related to items that may be reclassified subsequently to profit or loss	-	-	-	-
		(3,747)	-	34,679	-
	Other comprehensive income for the year, net of income tax	(5,505)	-	54,844	-
	Total comprehensive income for the year	**$ 547,541**	**8**	**613,970**	**7**
	Earnings per share (in New Taiwan dollars) (note 6(q)):				
9750	Basic earnings per share	**$**	**4.51**		**5.23**
9850	Diluted earnings per share	**$**	**4.46**		**5.11**

See accompanying notes to parent-company-only financial statements.

(English Translation of Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC.

Statements of Changes in Equity

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars)

			Retained earnings				Total other equity				
	Common stock	Capital Surplus	Legal reserve	Special reserve	Unappropriated earnings	Total	Exchange differences on translation of foreign operations	Unrealized gains (losses) on financial assets measured at fair value through other comprehensive income	Unearned stock-based employee compensation	Total	Total equity
Balance at January 1, 2022	$ 1,018,243	389,146	410,715	108,958	1,299,394	1,819,067	(74,366)	(51,415)	(8,941)	(134,722)	3,091,734
Capital increase in cash (note 6(o))	110,000	253,000	-	-	-	-	-	-	-	-	363,000
Appropriation of earnings:											
Legal reserve	-	-	47,675	-	(47,675)	-	-	-	-	-	-
Special reserve	-	-	-	16,825	(16,825)	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(294,272)	(294,272)	-	-	-	-	(294,272)
Net income in 2022	-	-	-	-	559,126	559,126	-	-	-	-	559,126
Other comprehensive income in 2022	-	-	-	-	16,452	16,452	34,679	3,713	-	38,392	54,844
Total comprehensive income in 2022	-	-	-	-	575,578	575,578	34,679	3,713	-	38,392	613,970
Issuance of new shares in exchange for other company's shares	98,639	282,176	-	-	-	-	-	-	-	-	380,815
Compensation cost arising from restricted stock issued to employees	-	-	-	-	-	-	-	-	8,941	8,941	8,941
Balance at December 31, 2022	1,226,882	924,322	458,390	125,783	1,516,200	2,100,373	(39,687)	(47,702)	-	(87,389)	4,164,188
Appropriation of earnings:											
Legal reserve	-	-	57,558	-	(57,558)	-	-	-	-	-	-
Reversal of special reserve	-	-	-	(38,392)	38,392	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(404,871)	(404,871)	-	-	-	-	(404,871)
Changes in equity of associates accounted for using equity method	-	1,503	-	-	-	-	-	-	-	-	1,503
Net income in 2023	-	-	-	-	553,046	553,046	-	-	-	-	553,046
Other comprehensive income in 2023	-	-	-	-	(3,410)	(3,410)	(3,747)	1,652	-	(2,095)	(5,505)
Total comprehensive income in 2023	-	-	-	-	549,636	549,636	(3,747)	1,652	-	(2,095)	547,541
Balance at December 31, 2023	**$ 1,226,882**	**925,825**	**515,948**	**87,391**	**1,641,799**	**2,245,138**	**(43,434)**	**(46,050)**	**-**	**(89,484)**	**4,308,361**

See accompanying notes to parent-company-only financial statements.

(English Translation of Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC.

Statements of Cash Flows

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars)

	2023	2022
Cash flows from operating activities:		
Income before income tax	$ 642,279	668,899
Adjustments:		
Depreciation	43,109	41,604
Amortization	10,047	9,781
Recognized (reversal of) expected credit loss	(404)	16,673
Interest expense	12,343	6,217
Interest income	(27,669)	(5,219)
Share-based compensation cost	-	8,941
Share of profit of subsidiaries and associates	(155,655)	(73,746)
Gain on disposal of property, plant and equipment	(776)	(48)
Impairment loss on non-financial assets	46	303
Unrealized (realized) gross profit on sales to subsidiaries and associates	1,175	(913)
Subtotal	(117,784)	3,593
Changes in operating assets and liabilities:		
Changes in operating assets:		
Financial assets at fair value through profit or loss	(593)	669
Notes and accounts receivable	(22,039)	562,837
Accounts receivable from related parties	27,527	6,914
Inventories	(648,173)	735,287
Other current assets	1,464	(11,398)
Net changes in operating assets	(641,814)	1,294,309
Changes in operating liabilities:		
Financial liabilities at fair value through profit or loss	(942)	879
Notes and accounts payable	252,471	(176,142)
Accounts payable to related parties	217,544	(68,434)
Other payables	(23,483)	46,415
Other payables to related parties	575	101
Provisions	(1,192)	(724)
Other current liabilities	(21,111)	13,667
Net defined benefit liabilities	5	6
Net changes in operating liabilities	423,867	(184,232)
Total changes in operating assets and liabilities	(217,947)	1,110,077
Total adjustments	(335,731)	1,113,670
Cash provided by operations	306,548	1,782,569
Interest received	26,580	3,528
Dividends received	82,067	-
Interest paid	(12,433)	(6,061)
Income taxes paid	(71,655)	(185,507)
Net cash provided by operating activities	331,107	1,594,529

See accompanying notes to parent-company-only financial statements.

(English Translation of Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC.

Statements of Cash Flows (Continued)

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars)

	2023	2022
Cash flows from investing activities:		
Proceeds from disposal of financial assets at fair value through profit or loss	-	110,079
Acquisition of financial assets at fair value through other comprehensive income	(3,750)	-
Acquisition of property, plant and equipment	(31,985)	(28,392)
Proceeds from disposal of property, plant and equipment	1,000	48
Acquisition of intangible assets	(2,916)	(5,946)
Increase in other financial assets－current	(101,870)	(1,108,400)
Decrease in other financial assets－non-current	-	189
Increase in other non-current assets	(1,139)	(885)
Net cash used in investing activities	(140,660)	(1,033,307)
Cash flows from financing activities:		
Decrease in short-term borrowings	(30,735)	(159,834)
Payment of lease liabilities	(10,249)	(9,040)
Cash dividends distributed to shareholders	(404,871)	(294,272)
Capital increase in cash	-	363,000
Net cash used in financing activities	(445,855)	(100,146)
Net increase (decrease) in cash and cash equivalents	(255,408)	461,076
Cash and cash equivalents at beginning of year	797,322	336,246
Cash and cash equivalents at end of year	**$ 541,914**	**797,322**

See accompanying notes to parent-company-only financial statements.

(English Translation of Parent-Company-Only Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC.

Notes to Parent-Company-Only Financial Statements

For the years ended December 31, 2023 and 2022

(Expressed in Thousands of New Taiwan Dollars, Unless Otherwise Specified)

1. Organization and business

Apacer Technology Inc. (the "Company") was incorporated on April 16, 1997, as a company limited by shares under the laws of the Republic of China ("R.O.C.") and registered under the Ministry of Economic Affairs, R.O.C. The address of the Company's registered office is 1F, No.32, Zhongcheng Rd., Tucheng Dist., New Taipei City, Taiwan. The Company is engaged in the research and development, design, manufacturing, processing, maintenance and sales of memory modules and storage memory devices.

2. Authorization of parent-company-only financial statements

These parent-company-only financial statements were authorized for issuance by the Board of Directors on February 23, 2024.

3. Application of new, revised or amended accounting standards and interpretations:

(a) The impact of the International Financial Reporting Standards ("IFRSs") endorsed by the Financial Supervisory Commission, R.O.C. ("FSC") which have already been adopted.

The Company has initially adopted the following new amendments, which do not have a significant impact on its parent-company-only financial statements, from January 1, 2023:

- Amendments to IAS 1 "Disclosure of Accounting Policies"
- Amendments to IAS 8 "Definition of Accounting Estimates"
- Amendments to IAS 12 "Deferred Tax related to Assets and Liabilities arising from a Single Transaction"

The Company has initially adopted the following new amendments, which do not have a significant impact on its parent-company-only financial statements, from May 23, 2023:

- Amendments to IAS 12 "International Tax Reform－Pillar Two Model Rules"

(b) The impact of IFRS endorsed by the FSC but not yet effective

The Company assesses that the adoption of the following new amendments, effective for annual period beginning on January 1, 2024, would not have a significant impact on its parent-company-only financial statements:

- Amendments to IAS 1 "Classification of Liabilities as Current or Non-current"
- Amendments to IAS 1 "Non-current Liabilities with Covenants"
- Amendments to IAS 7 and IFRS 7 "Supplier Finance Arrangements"
- Amendments to IFRS 16 "Lease Liability in a Sale and Leaseback"

(c) The impact of IFRS issued by IASB but not yet endorsed by the FSC

The Company does not expect the following new and amended standards, which have yet to be endorsed by the FSC, to have a significant impact on its parent-company-only financial statements:

- Amendments to IFRS 10 and IAS 28 "Sale or Contribution of Assets Between an Investor and its Associate or Joint Venture"
- IFRS 17 "Insurance Contracts" and amendments to IFRS 17 "Insurance Contracts"
- Amendments to IAS 21 "Lack of Exchangeability"

4. Summary of material accounting policies:

The material accounting policies presented in the parent-company-only financial statements are summarised as follows. The following accounting policies were applied consistently throughout the periods presented in the Company's parent-company-only financial statements.

(a) Statement of compliance

The Company's accompanying parent-company-only financial statements have been prepared in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers (the "Regulations").

(b) Basis of preparation

(i) Basis of measurement

The accompanying parent-company-only financial statements have been prepared on a historical cost basis except for the following items in the balance sheets:

1) Financial instruments measured at fair value through profit or loss (including derivative financial instruments);
2) Financial assets at fair value through other comprehensive income; and
3) Defined benefit liabilities are recognized as the present value of the defined benefit obligation less fair value of the plan assets and the effect of the asset ceiling mentioned in note 4(p).

(ii) Functional and presentation currency

The functional currency of the Company is determined based on the primary economic environment in which the Company operates. The Company's parent-company-only financial statements are presented in New Taiwan dollars(NTD), which is the Company's functional currency. Except when otherwise indicated, all financial information presented in NTD has been rounded to the nearest thousand.

(c) Foreign currency

(i) Foreign currency transactions

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. At the end of each subsequent reporting period, monetary items denominated in foreign currencies are translated into the functional currencies using the exchange rate at that date. Non-monetary items denominated in foreign currencies that are measured at fair value are translated into the functional currencies using the exchange rate at the date that the fair value was determined. Non-monetary items denominated in foreign currencies that are measured based on historical cost are translated using the exchange rate at the date of the transaction.

Exchange differences are generally recognized in profit or loss, except for those differences relating to equity investments designated as at fair value through other comprehensive income, which are recognized in other comprehensive income.

(ii) Foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising from acquisition, are translated into the presentation currency of the Company’s parent-company-only financial statements at the exchange rates at the reporting date. The income and expenses of foreign operations are translated into the presentation currency of the Company’s parent-company-only financial statements at the average exchange rates for the period. All resulting exchange differences are recognized in other comprehensive income.

On the disposal of a foreign operation which involves a loss of control over a subsidiary or a loss of significant influence over an associate that includes a foreign operation, all of the exchange differences accumulated in equity in respect of that operation attributable to the shareholders of the Company are entirely reclassified to profit or loss. In the case of a partial disposal that does not result in the Company losing control over a subsidiary, the proportionate share of accumulated exchange differences is reclassified to non-controlling interests. For a partial disposal of the Company’s ownership interest in an associate, the proportionate share of the accumulated exchange differences in equity is reclassified to profit or loss.

When the settlement of a monetary receivable from or payable to a foreign operation is neither planned nor likely to occur in the foreseeable future, the monetary item is, in substance, a part of net investment in that foreign operation, and the related foreign exchange gains and losses thereon are recognized as other comprehensive income.

(d) Classification of current and non-current assets and liabilities

An asset is classified as current when one of following criteria is met; all other assets are classified as non-current assets.

(i) It is expected to be realized, or sold or consumed in the normal operating cycle;

(ii) It is held primarily for the purpose of trading;

(iii) It is expected to be realized within twelve months after the and of the reporting period ("the reporting date"); or

(iv) The asset is cash or a cash equivalent unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting date.

A liability is classified as current when one of following criteria is met; all other liabilities are classified as non-current liabilities:

(i) It is expected to be settled in the normal operating cycle;

(ii) It is held primarily for the purpose of trading;

(iii) It is due to be settled within twelve months after the reporting date; or

(iv) The Company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date.

(e) Cash and cash equivalents

Cash consists of cash on hand, checking deposits, and demand deposits. Cash equivalents consist of short-term and highly liquid investments that are readily convertible to known amounts of cash and are subject to an insignificant risk of changes in value. Time deposits that meet the aforesaid criteria and are held for meeting short-term cash commitments instead of investing and other purposes are also classified as cash equivalents.

(f) Financial instruments

Accounts receivables and debt securities issued are initially recognized when they are originated. All other financial assets and financial liabilities are initially recognized when the Company becomes a party to the contractual provisions of the instrument. A financial asset (unless it is an accounts receivable without a significant financing component) or financial liability is initially measured at fair value plus, for an item not at fair value through profit or loss (FVTPL), transaction costs that are directly attributable to its acquisition or issue. An accounts receivable without a significant financing component is initially measured at the transaction price.

(i) Financial assets

On initial recognition, financial assets are classified into the following categories: measured at amortized cost, fair value through other comprehensive income (FVOCI) and fair value through profit or loss (FVTPL). Regular way purchases or sales of financial assets are recognized or derecognized on a trade-date basis.

The Company shall reclassify all affected financial assets only when it changes its business model for managing its financial assets, in which case all affected financial assets are reclassified on the first day of the first reporting period following the change in the business model.

1) Financial assets measured at amortized cost

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.

These assets are subsequently measured at amortized cost, which is the amount at which the financial asset is measured at initial recognition, plus/minus, the cumulative amortization using the effective interest method, adjusted for any loss allowance. Interest income, foreign exchange gains and losses, as well as impairment, are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss.

2) Financial assets at fair value through other comprehensive income (Financial assets at “FVOCI”)

A debt investment is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Company may irrevocably elect to present subsequent changes in the investment’s fair value in other comprehensive income. This election is made on an instrument-by-instrument basis.

Debt investments at FVOCI are subsequently measured at fair value. Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment are recognized in profit or loss. Other net gains and losses are recognized in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to profit or loss.

Equity investments at FVOCI are subsequently measured at fair value. Dividends are recognized as income in profit or loss unless the dividend clearly represents a recovery of part of the cost of the investment. Other net gains and losses are recognized in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to retained earnings instead of profit or loss.

Dividend income derived from equity investments is recognized in profit or loss on the date on which the Company’s right to receive payment is established, which in the case of quoted securities is normally the ex-dividend date.

3) Financial assets at fair value through profit or loss (Financial assets at "FVTPL")

All financial assets not classified as amortized cost or FVOCI described as above are measured at FVTPL, including derivative financial assets. On initial recognition, the Company may irrevocably designate a financial asset, which meets the requirements to be measured at amortized cost or at FVOCI, as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognized in profit or loss.

4) Assessment of whether contractual cash flows are solely payments of principal and interest

For the purposes of this assessment, "principal" is defined as the fair value of the financial assets on initial recognition. "Interest" is defined as consideration for the time value of money, for the credit risk associated with the principal amount outstanding during a particular period of time and for other basic lending risks and costs, as well as for a profit margin.

In assessing whether the contractual cash flows are solely payments of principal and interest, the Company considers the contractual terms of the instrument. This includes assessing whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition. In making this assessment, the Company considers:

- contingent events that would change the amount or timing of cash flows;
- terms that may adjust the contractual coupon rate, including variable rate features;
- prepayment and extension features; and
- terms that limit the Company's claim to cash flows from specified assets (e.g. non-recourse features)

5) Impairment of financial assets

The Company recognizes loss allowances for expected credit losses on financial assets measured at amortized cost (including cash and cash equivalents, notes and accounts receivable and other financial assets).

The Company measures loss allowances at an amount equal to lifetime expected credit loss (ECL), except for the following which are measured as 12-month ECL:

- bank balances for which credit risk (i.e. the risk of default occurring over the expected life of the financial instrument) has not increased significantly since initial recognition.

Loss allowance for accounts receivables are always measured at an amount equal to lifetime ECL.

Lifetime ECLs are the ECLs that result from all possible default events over the expected life of a financial instrument. 12-month ECLs are the portion of ECLs that result from default events that are possible within the 12 month after the reporting date (or a shorter period if the expected life of the instrument is less than 12 months).

The maximum period considered when estimating ECLs is the maximum contractual period over which the Company is exposed to credit risk.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECL, the Company considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis based on the Company’s historical experience and informed credit assessment as well as forward-looking information.

ECLs are probability-weighted estimate of credit losses. Credit losses are measured as the present value of all cash shortfalls (i.e. the difference between the cash flows due to the Company in accordance with the contract and the cash flows that the Company expects to receive). ECLs are discounted at the effective interest rate of the financial asset.

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets.

The gross carrying amount of a financial asset is written off, either partially or in full, to the extent that there is no realistic prospect of recovery. The Company individually makes an assessment with respect to the timing and amount of write-off based on whether there is a reasonable expectation of recovery. The Company expects no significant recovery from the amount written off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Company’s procedures for recovery of amounts due. Based on the Company’s experience, there have been no corporate customer recoveries after 181 days.

6) Derecognition of financial assets

The Company derecognizes financial assets when the contractual rights to the cash flows from the financial assets expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial assets are transferred or in which the Company neither transfers nor retains substantially all of the risks and rewards of ownership and it does not retain control of the financial assets.

The Company enters into transactions whereby it transfers assets recognized in its statement of balance sheet, but retains either all or substantially all of the risks and rewards of the transferred assets. In these cases, the transferred assets are not derecognized.

(ii) Financial liabilities

1) Financial liabilities

Financial liabilities are classified as measured at amortized cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognized in profit or loss.

Financial liabilities measured at amortized cost are subsequently measured at amortized cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognized in profit or loss. Any gain or loss on derecognition is also recognized in profit or loss.

2) Derecognition of financial liabilities

The Company derecognizes a financial liability when its contractual obligation has been fulfilled or cancelled, or has expired. The Company also derecognizes a financial liability when its terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognized at fair value.

The difference between the carrying amount of a financial liability derecognized and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

3) Offsetting of financial assets and liabilities

Financial assets and financial liabilities are offset and the net amount presented in the statement of balance sheet when, and only when, the Company currently has a legally enforceable right to set off the amounts and it intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

(iii) Derivative financial instruments

Derivative financial instruments such as foreign currency forward contracts are held to hedge the Company’s foreign currency exposures. Derivatives are recognized initially at fair value, and attributable transaction costs are recognized in profit or loss as incurred. Subsequent to initial recognition, derivatives are measured at fair value, and changes therein are recognized in profit or loss. If the valuation of a derivative instrument results in a positive fair value, it is classified as a financial asset; otherwise, it is classified as a financial liability.

(g) Inventories

Inventories are measured at the lower of cost and net realizable value. The cost of inventories is calculated based on the weighted-average method and includes expenditure incurred in acquiring the inventories, production or conversion costs, and other costs incurred in bringing them to the location and condition ready for sale. Fixed manufacturing overhead is allocated to finished products and work in process based on the higher of normal capacity or actual capacity; variable manufacturing overhead is allocated based on the actual capacity of machinery and equipment. Net realizable value represents the estimated selling price in the ordinary course of business, less all estimated costs of completion and necessary selling expenses.

(h) Investment in associates

Associates are those entities in which the Company has significant influence, but not control or joint venture, over the financial and operating policies.

Investments in associates are accounted for using the equity method and are recognized initially at cost, plus, any transaction costs. The carrying amount of the investment in associates includes goodwill identified on acquisition, net of any accumulated impairment losses. When necessary, the entire carrying amount of the investment (including goodwill) will be tested for impairment as a single asset by comparing its recoverable amount with its carrying amount. Any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

The Company's financial statements include the Company's share of the profit or loss and other comprehensive income of those associates, after adjustments to align their accounting policies with those of the Company, from the date on which significant influence commences until the date on which significant influence ceases. When changes in an associate's equity are not recognized in profit or loss or other comprehensive income of the associate, and such changes do not affect the Company's ownership percentage of the associate, the Company recognizes the change in ownership interests of its associate as "capital surplus" in proportion to its ownership.

Gains and losses resulting from transactions between the Company and an associate are recognized only to the extent of unrelated Company's interests in the associate.

When the Company's share of losses in an associate equals or exceeds its interest in the associate, the recognition of further losses is discontinued. Additional losses are provided for, and a liability is recognized, only to the extent that the Company has incurred legal or constructive obligations or made payments on behalf of the associate.

When an associate issues new shares and the Company does not subscribe to the new shares in proportion to its original ownership percentage, the Company's interest in the associate's net assets will be changed. The change in the equity interest is adjusted through the capital surplus and investment accounts. If the Company's capital surplus is insufficient to offset the adjustment to investment accounts, the difference is charged as a reduction of retained earnings. If the Company's interest in an associate is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

(i) Investment in subsidiaries

When preparing the parent-company-only financial statements, investment in subsidiaries which are controlled by the Company is accounted for using equity method. Carrying amount of investments in subsidiaries includes goodwill arising from initial recognition less any accumulated impairment losses, which is recognized as a reduction of carry amount. Under the equity method, the net income, other comprehensive income and equity in the parent-company-only financial statement are the same as those attributable to shareholders of the Company in the consolidated financial statements.

Changes in the Company's ownership interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

(j) Property, plant and equipment

(i) Recognition and measurement

Items of property, plant and equipment are measured at cost, which includes capitalized borrowing costs, less accumulated depreciation and accumulated impairment losses.

If significant parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Any gain or loss on disposal of an item of property, plant and equipment is recognized in profit or loss.

(ii) Subsequent expenditure

Subsequent expenditure is capitalized only if it is probable that future economic benefits associated with the expenditure will flow to the Company.

(iii) Depreciation

Depreciation is calculated on the cost of an asset less its residual value and is recognized in profit or loss on a straight-line basis over the estimated useful lives of each component of an item of property, plant and equipment. Land is not depreciated.

The estimated useful lives for property, plant and equipment are as follows: buildings and improvements: 4 to 47 years; machinery and equipment: 2 to 11 years; and other equipment: 3 to 15 years.

Depreciation methods, useful lives, and residual values are reviewed at each reporting date, with the effect of any changes in estimate accounted for on a prospective basis.

(k) Leases

At inception of a contract, the Company assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

(i) As a leasee

The Company recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the right-of-use asset or the end of the lease term. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be reliably determined, the Company' s incremental borrowing rate. Generally, the Company uses its incremental borrowing rate as the discount rate.

Lease payments included in the measurement of the lease liability comprise the following:

— fixed payments, including in-substance fixed payments;

— variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when:

— there is a change in future lease payments arising from the change in an index or rate; or

— there is a change of its assessment on whether it will exercise an extension or termination option; or

— there is any lease modification in lease subject, scope of the lease or other terms.

When the lease liability is remeasured, other than lease modifications, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or in profit and loss if the carrying amount of the right-of-use asset has been reduced to zero.

When the lease liability is remeasured to reflect the partial or full termination of the lease for lease modifications that decrease the scope of the lease, the Company accounts for the remeasurement of the lease liability by decreasing the carrying amount of the right-of-use asset to reflect the partial or full termination of the lease, and recognize the difference in profit or loss relating to the partial or full termination of the lease.

The Company presents right-of-use assets that do not meet the definition of investment properties, and lease liabilities as a separate line item respectively in the balance sheets.

The Company has elected not to recognize right-of-use assets and lease liabilities for short-term leases of office equipment. The Company recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

(l) Intangible assets

The Company’s intangible assets are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized in profit or loss using the straight-line method over the following estimated useful lives: acquired computer software: 1 to 10 years; royalties for the use of patents: 13 to 20 years.

Amortization methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate.

(m) Impairment of non-financial assets

The Company assesses at the end of each reporting date whether there is any indication that the carrying amounts of non-financial assets (other than inventories and deferred tax assets) may be impaired. If any such indication exists, then the asset’s recoverable amount is estimated. Goodwill is tested annually or when there are indications of impairment.

For the purpose of impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows from other assets or groups of assets. Goodwill arising from a business combination is allocated to cash-generating units (“CGUs”) or groups of CGUs that are expected to benefit from the synergies of the combination.

The recoverable amount of an individual asset or CGU is the higher of its value in use and its fair value less costs to sell. Value in use is based on the estimated future cash flows, discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or CGU.

An impairment loss is recognized if the carrying amount of an asset or CGU exceeds its recoverable amount. Impairment losses are recognized in profit or loss. They are allocated first to reduce the carrying amount of any goodwill allocated to the CGU, and then to reduce the carrying amounts of the other assets in the CGU on a pro rata basis.

An impairment loss in respect of goodwill is not reversed. For other non-financial assets, an impairment loss is reversed only to the extent that the asset’s carrying amount that would have been determined (net of depreciation or amortization) had no impairment loss been recognized for the assets in prior years.

(n) Provisions

Provisions are recognized when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Company will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

(i) Warranties

A provision for warranties is recognized when the underlying products or services are sold. This provision reflects the historical warranty claim rate and the weighting of all possible outcomes against their associated probabilities.

(ii) Sales return and allowances provision

A provision for sales returns and allowances is recognized when the underlying products are sold. This provision is estimated based on historical sales return and allowances data.

(o) Revenue recognition

Revenue is measured based on the consideration to which the Company expects to be entitled in exchange for transferring goods to a customer. The Company recognizes revenue when it satisfies a performance obligation by transferring control of a good to a customer.

(i) Sale of goods

The Company recognizes revenue when control of the goods has been transferred to the customer, being when the goods have been delivered to the customer, and there is no unfulfilled obligation that could affect the customer’ s acceptance of the goods. Delivery occurs when the customer has accepted the goods in accordance with the terms of sales, the risks of obsolescence and loss have been transferred to the customer, and the Company has objective evidence that all criteria for acceptance have been satisfied.

A receivable is recognized when the goods are delivered as this is the point in time that the Company has a right to an amount of consideration that is unconditional.

(ii) Financing components

The Company does not expect that the period between the transfer of the promised goods to the customer and payment by the customer exceeds one year. As a consequence, the Company does not adjust any of the transaction prices for the time value of money.

(p) Employee benefits

(i) Defined contribution plans

Obligations for contributions to defined contribution pension plans are expensed during the year in which employees render services.

(ii) Defined benefit plans

The Company’s net obligation in respect of defined benefit plans is calculated separately for each plan by estimating the amount of future benefit that employees have earned in the current and prior periods, discounting that amount and deducting the fair value of any plan assets. The discount rate for calculating the present value of the defined benefit obligation refers to the interest rate of high-quality government bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the term of the related pension obligation. The defined benefit obligation is calculated annually by qualified actuaries using the projected unit credit method.

When the benefits of a plan are improved, the expense related to the increased obligations resulting from the services rendered by employees in the past years are recognized in profit or loss immediately.

The remeasurements of the net defined benefit liability (asset) comprise 1) actuarial gains and losses; 2) return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset); and 3) any change in the effect of the asset ceiling, excluding amounts included in net interest on the net defined benefit liability (asset). The remeasurements of the net defined benefit liabilities (asset) are recognized in other comprehensive income and then transferred to retained earnings.

The Company recognizes gains or losses on the curtailment or settlement of a defined benefit plan when the curtailment or settlement occurs. The gain or loss on curtailment or settlement comprises any resulting change in the fair value of plan assets and any change in the present value of the defined benefit obligation.

(iii) Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed during the period in which employees render services. A liability is recognized for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Company has a present legal or constructive obligation to make such payments as a result of past service provided by the employees, and the obligation can be estimated reliably.

(q) Share-based payment

The grant-date fair value of equity-settled share-based payment arrangements granted to employees is generally recognized as an expense, with a corresponding increase in equity, over the vesting period of the awards. The amount recognized as an expense is adjusted to reflect the number of awards for which the related service and non-market performance conditions are expected to be met, and the amount ultimately recognized is based on the number of awards that meet the related service and non-market performance conditions at the vesting date.

For share-based payment awards with non-vesting conditions, the grant-date fair value of the share-based payment is measured to reflect such conditions, and there is no true-up for differences between expected and actual outcomes.

(r) Income taxes

Income taxes comprise current taxes and deferred taxes. Current and deferred taxes are recognized in profit or loss unless they relate to items recognized directly in equity or other comprehensive income.

Current taxes comprise the expected tax payables or receivables on the taxable profits (losses) for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of current tax payables or receivables are the best estimate of the tax amount expected to be paid or received that reflects uncertainty related to income taxes, if any. It is measured using tax rates enacted or substantively enacted at the reporting date.

Deferred taxes arise due to temporary differences between the carrying amounts of assets and liabilities at the reporting date and their respective tax bases. Deferred taxes are recognized except for the follwing:

(i) Temporary differences on the initial recognition of assets and liabilities in a transaction that is not a business combination and at the time of the transaction 1) affects neither accounting nor taxable profits (losses) and 2) does not give rise to equal taxable and deductible temporary differences;

(ii) Temporary differences related to investments in subsidiaries and associates to the extent that the Company is able to control the timing of the reversal of the temporary differences and it is probable that they will not reverse in the foreseeable future; and

(iii) Taxable temporary differences arising on the initial recognition of goodwill.

Deferred taxes are measured at tax rates that are expected to be applied to temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date, and reflect uncertainty related to income taxes, if any.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred tax assets and liabilities relate to income taxes levied by the same tax authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

Deferred tax assets are recognized for unused tax losses, tax credits, and deductible temporary differences to the extent that it is probable that future taxable profits will be available against which they can be utilized. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is no longer probable that the related tax benefit will be realized; such reductions are reversed when the probability of future taxable profits improves.

(s) Business combinations

The Company accounts for business combinations using the acquisition method. Goodwill is measured as the excess of the acquisition-date fair value of the consideration transferred (including any non-controlling interest in the acquiree) over the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed (generally at fair value). If the residual balance is negative, the Company shall re-assess whether it has correctly identified all of the assets acquired and liabilities assumed and recognize any additional assets or liabilities that are identified in that review, and shall recognize a gain on the bargain purchase thereafter.

Acquisition-related costs are expensed as incurred except for the costs related to issuance of debt or equity instruments.

Non-controlling interests in an acquire that are present ownership interests and entitle their holders to a proportionate share of the entity’s net assets in the event of liquidation are measured at either fair value or the present ownership instruments’ proportionate share in the recognized amounts of the acquiree’s net identifiable assets. All other non-controlling interest is measured at its acquistion-date fair value or other measurement basis in accordance with Taiwan-IFRS Accounting Standards.

In a business combination achieved in stages, the Company shall re-measure its previously held equity interest in the acquiree at its acquisition-date fair value and recognize the resulting gain or loss in profit or loss. The amount previously recognized in other comprehensive income in relation to the changes in the value of the Company’s equity interest should be reclassified to profit or loss on the same basis as would be required if the Company had disposed directly of the previously held equity interest.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the provisional amounts for the items for which the accounting is incomplete are reported in the financial statements. During the measurement period, the provisional amounts recognized at the acquisition date are retrospectively adjusted to reflect new information obtained about facts and circumstances that existed as of the acquisition date. The measurement period shall not exceed one year from the acquisition date.

(t) Earnings per share (“EPS”)

The basic and diluted EPS attributable to shareholders of the Company are disclosed in the parent-company-only financial statements. Basic EPS is calculated by dividing net income attributable to shareholders of the Company by the weighted-average number of common shares outstanding during the year. Diluted EPS is calculated as the net income attributable to shareholders of the Company divided by the weighted-average number of common shares outstanding during the year after adjustment for the effects of all potentially dilutive common shares such as restricted stock to employees and employee compensation.

(u) Operating segments

The Company discloses the operating segment information in the consolidated financial statements. Therefore, the Company does not disclose the operating segment information in the parent-company-only financial statements.

5. Critical accounting judgments and key sources of estimation uncertainty

The preparation of the parent-company-only financial statements in conformity with the Regulations Governing the Preparation of Financial Reports by Securities Issuers requires management to make judgments, estimates and assumptions that affect the application of the accounting policies and the reported amount of assets, liabilities, income and expenses. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimate is revised and the future periods affected.

Information about assumptions and estimation uncertainties that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year is as follows:

(a) Valuation of inventories

Inventories are measured at the lower of cost or net realizable value. The Company estimates the net realizable value of inventory, taking into account obsolescence and unmarketable items at the reporting date, and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is mainly determined based on assumptions of future demand within a specific time horizon, which could result in significant adjustments. Please refer to note 6(e) for more details of the valuation of inventories.

(b) Assessment of impairment of goodwill from investments in subsidiaries

Carrying amount of investments in subsidiaries includes goodwill arising from initial recognition. The assessment of impairment of goodwill requires the Company to make subjective judgments to identify cash-generating units, allocate the goodwill to relevant cash-generating units, and estimate the recoverable amount of relevant cash-generating units. Any changes in these estimates based on changed economic conditions or business strategies could result in significant adjustments in future years. Please refer to note 6(f) for more details of the assessment of impairment of goodwill.

6. Significant account disclosures

(a) Cash and cash equivalents

	December 31, 2023	December 31, 2022
Cash on hand	$ 12	12
Demand deposits	391,902	297,510
Time deposits with original maturities less than three months	150,000	499,800
	$ 541,914	**797,322**

As of December 31, 2023 and 2022, the time deposits with original maturities of more than three months amounted to $1,299,670 and $1,197,800, respectively, which were classified as other financial assets－current.

(b) Financial assets and liabilities at fair value through profit or loss－current

	December 31, 2023	December 31, 2022
Financial assets mandatorily measured at fair value through profit or loss－current:		
Foreign currency forward contracts	**$ 593**	**-**
Financial liabilities held for trading－current:		
Foreign currency forward contracts	$ (70)	(892)
Foreign exchange swaps	-	(120)
	$ (70)	**(1,012)**

Please refer to note 6(t) for the detail of the changes in fair value recognized in profit or loss.

The Company entered into derivative contracts to manage foreign currency exchange risk resulting from its operating activities. As of December 31, 2023 and 2022, the derivative financial instruments that did not conform to the criteria for hedge accounting consisted of the following:

	December 31, 2023				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial assets－foreign currency forward contracts	CNY	13,500	**$ 593**	CNY / NTD	2024/01/26～2024/02/26

	December 31, 2023				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial liabilities－foreign currency forward contracts	JPY	19,000	**$ (70)**	JPY / NTD	2024/01/26

	December 31, 2022				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial liabilities－foreign currency forward contracts	JPY	20,900	$ (268)	JPY / NTD	2023/01/30
	CNY	8,500	(531)	CNY / NTD	2023/01/30
	USD	2,000	(93)	USD / NTD	2023/01/10～2023/01/13
			$ (892)		
Financial liabilities－foreign exchange swaps	USD	3,000	**$ (120)**	USD / NTD	2023/01/19

(c) Financial assets at fair value through other comprehensive income－non-current

	December 31, 2023	December 31, 2022
Equity investments at fair value through other comprehensive income:		
Domestic unlisted stocks	**$ 35,034**	**29,616**

The Company designated the abovementioned investments as at fair value through other comprehensive income because these equity investments represent those investments that the Company intends to hold for long-term strategic purposes.

No strategic investments were disposed for the years ended December 31, 2023 and 2022, and there were no transfers of any cumulative gain or loss within equity relating to these investments.

(d) Notes and accounts receivable

	December 31, 2023	December 31, 2022
Notes and accounts receivable	$ 579,294	557,255
Accounts receivable from related parties	153,586	181,113
	732,880	738,368
Less: loss allowance	(21,417)	(21,821)
	$ 711,463	**716,547**

As of December 31, 2023 and 2022, aside from recognizing impairment loss for credit-impaired accounts receivable amounting to $0 and $18,232, respectively, for notes and accounts receivable with gross carrying amounts of $0 and $18,232, respectively, as there was objective evidence indicating that, under reasonable expectation, they would not be recovered in total. The Company applies the simplified approach to measure its expected credit losses, i.e. the use of lifetime expected loss provision for all receivables (including related parties), as well as the incorporated forward-looking information. The loss allowance provision was determined as follows:

	December 31, 2023		
	Gross carrying amount	**Weighted-average loss rate**	**Loss allowance provision**
Current	$ 657,688	0.0020%	13
Past due 1-90 days	54,387	1.1014%	599
Past due over 181 days	20,805	100%	20,805
	$ 732,880		21,417

	December 31, 2022		
	Gross carrying amount	**Weighted-average loss rate**	**Loss allowance provision**
Current	$ 666,287	0.0002%	2
Past due 1-90 days	51,089	1.6200%	828
Past due 91-180 days	15	93.3300%	14
Past due over 181 days	2,745	100%	2,745
	$ 720,136		3,589

Movements of the loss allowance for notes and accounts receivable (including related parties) were as follows:

	2023	**2022**
Balance at January 1	$ 21,821	5,148
Impairment loss recognized (reversed)	(404)	16,673
Balance at December 31	$ 21,417	21,821

(e) Inventories

	December 31, 2023	December 31, 2022
Raw materials	$ 525,532	250,431
Work in process	99,450	103,625
Finished goods	680,546	328,459
Inventories in transit	57,297	32,137
	$ 1,362,825	714,652

For the years ended December 31, 2023 and 2022, the amounts of inventories recognized as cost of revenue were as follows:

	2023	2022
Cost of inventories sold	$ 5,559,444	6,691,192
(Reversal of) inventories write-downs	(153,142)	191,000
Loss (gain) on physical inventory	(60)	3
	$ 5,406,242	6,882,195

The above write-downs of inventories to net realizable value, and reversal of inventories write-downs due to price recovery, or sale or consumption of beginning inventories which has been written down, were included in cost of revenue.

(f) Investments accounted for using equity method

A summary of the Company' s investments accounted for using equity method at the reporting date were as follows:

	December 31, 2023	December 31, 2022
Subsidiaries	$ 931,254	862,008
Associates	1,351	444
	$ 932,605	862,452

(i) Investments in subsidiaries

Please refer to the consolidated financial statements for the year ended December 31, 2023.

(ii) Acquisition of subsidiary－UD INFO Corp. (UD)

1) Consideration transferred

On August 1, 2022, the Company issued additional 9,864 thousand shares of common stock in exchange for 4,932 thousand shares of common stock of UD, wherein it obtained 68.54% ownership of UD. The Company obtained control over UD. UD is mainly engaged in the research and development, and sales of industrial applications and embedded memory products. The acquisition of UD is to acquire UD' s current customer relationships and expand markets in flash memory products and memory modules.

2) Identifiable net assets acquired in a business combination

On August 1, 2022 (the acquisition date), the fair value of identifiable assets acquired and liabilities assumed from the acquisition was as follows:

Consideration transferred:		
Issuance of additional 9,864 thousand shares of common stock		$ 380,815
Add: Non-controlling interests (measured at non-controlling interest's proportionate share of the fair value of UD's identifiable net assets)		121,720
Less: identifiable net assets acquired at fair value:		
Cash and cash equivalents	$ 248,556	
Financial assets at fair value through profit or loss－current	31,460	
Notes and accounts receivable	18,981	
Other receivables	1,787	
Inventories	238,438	
Other financial assets－current	12,000	
Other current assets	16,606	
Property, plant and equipment	60,802	
Right-of-use assets	1,337	
Intangible assets－computer software	17	
Intangible assets－customer relationships	69,705	
Intangible assets－expertise	27,104	
Deferred income tax assets	4,415	
Other financial assets－non-current	845	
Short-term borrowings	(5,000)	
Notes and accounts payable (including related parties)	(111,189)	
Other payables (including related parties)	(16,096)	
Current income tax liabilities	(22,661)	
Lease liabilities (including current and non-current)	(1,342)	
Other current liabilities	(115,352)	
Long-term debt (including current portion)	(52,840)	
Deferred income tax liabilities	(20,721)	386,852
Goodwill		**$ 115,683**

For the fair value measurement of the abovementioned assets and liabilities, the required market-based assessment and other calculations have been completed.

Goodwill and intangible assets identified on acquisition are included in the carrying amount of investments accounted for using equity method.

(iii) Impairment test on goodwill

The excess of the cost of acquiring an investment in a subsidiary over the Company's equity interest of the net fair value of the investee's identifiable assets acquired and liabilities assumed at the date of acquisition should be recorded as goodwill, and any impairment of goodwill should be recognized as a deduction from the carrying amount of the investments accounted for using equity method. The movements of goodwill arising from business combination were allocated to the respective CGUs identified as the following subsidiaries:

	UD
Balance at December 31, 2023 (the same as balance at January 1, 2023)	$ 115,683
Balance at January 1, 2022	$ -
Acquisition through business combination	115,683
Balance at December 31, 2022	$ 115,683

Each CGU to which the goodwill is allocated represents the lowest level within the Company, at which the goodwill is monitored for internal management purpose. As of December 31, 2023 and 2022, based on the results of impairment tests conducted by the Company, the recoverable amount of CGU exceeded its carrying amount; as a result, no impairment loss was recognized. The recoverable amount of a CGU was determined based on the value in use.

With regard to the key assumptions used in the estimation of the recoverable amount, the annual discount rate for the years ended December 31, 2023 and 2022 were 15.97% and 16.71%, respectively, based on weighted average cost of capital. The cash flow projections were determined based on future financial budgets, covering a period of 5 years, and extrapolated with steady annual terminal growth rates for subsequent years, which were 1% for 2023 and 2022. The key assumptions abovementioned represent the management's forecast of the future for the related industry by considering the history information from internal and external sources.

(iv) Investments in associates

	December 31, 2023		December 31, 2022	
Name of Associates	**Percentage of voting rights**	**Carrying amount**	**Percentage of voting rights**	**Carrying amount**
JoiiUp Technology Inc.	10.35%	$ 1,351	11.48%	444

Aggregate financial information of associates that were not individually material was summarized as follows. The financial information was included in the Company's parent-company-only financial statements.

	December 31, 2023	December 31, 2022
The aggregate carrying amount of associates that were not individually material	$ 1,351	444

		2023	2022
Attributable to the Company:			
Net loss	$	(596)	(920)
Other comprehensive income		-	-
Total comprehensive income	$	(596)	(920)

(g) Property, plant and equipment

The movements of cost, accumulated depreciation and impairment loss of the property, plant and equipment for the years ended December 31, 2023 and 2022 were as follows:

		Land	Buildings	Machinery and equipment	Other equipment	Equipment to be inspected and construction in progress	Total
Cost:							
Balance at January 1, 2023	$	556,498	321,956	189,328	78,936	5,265	1,151,983
Additions		-	1,693	10,749	1,962	17,581	31,985
Disposals		-	(3,771)	(24,342)	(24,192)	-	(52,305)
Reclassification		-	-	22,352	10	(22,362)	-
Balance at December 31, 2023	$	556,498	319,878	198,087	56,716	484	1,131,663
Balance at January 1, 2022	$	556,498	319,546	191,728	72,567	1,048	1,141,387
Additions		-	1,446	10,079	6,369	10,498	28,392
Disposals		-	-	(17,796)	-	-	(17,796)
Reclassification		-	964	5,317	-	(6,281)	-
Balance at December 31, 2022	$	556,498	321,956	189,328	78,936	5,265	1,151,983
Accumulated depreciation and impairment loss:							
Balance at January 1, 2023	$	-	79,281	153,692	64,795	-	297,768
Depreciation		-	13,051	14,736	5,123	-	32,910
Disposals		-	(3,770)	(24,342)	(23,969)	-	(52,081)
Impairment loss		-	-	46	-	-	46
Balance at December 31, 2023	$	-	88,562	144,132	45,949	-	278,643
Balance at January 1, 2022	$	-	66,150	158,041	58,679	-	282,870
Depreciation		-	13,131	13,196	6,116	-	32,443
Disposals		-	-	(17,796)	-	-	(17,796)
Impairment loss		-	-	251	-	-	251
Balance at December 31, 2022	$	-	79,281	153,692	64,795	-	297,768
Carrying amounts:							
Balance at December 31, 2023	$	556,498	231,316	53,955	10,767	484	853,020
Balance at December 31, 2022	$	556,498	242,675	35,636	14,141	5,265	854,215

For the years ended December 31, 2023 and 2022, the Company recognized an impairment loss on property, plant and equipment of $46 and $251, respectively, which were included in non-operating income and loss.

(h) Right-of-use assets

		Buildings	Other equipment	Total
Cost:				
Balance at January 1, 2023	$	16,715	20,115	36,830
Additions		3,768	774	4,542
Derecognition		-	(3,792)	(3,792)
Balance at December 31, 2023	$	20,483	17,097	37,580
Balance at January 1, 2022	$	16,715	18,744	35,459
Additions		-	1,371	1,371
Balance at December 31, 2022	$	16,715	20,115	36,830
Accumulated depreciation:				
Balance at January 1, 2023	$	6,965	11,165	18,130
Depreciation		5,330	4,869	10,199
Derecognition		-	(3,792)	(3,792)
Balance at December 31, 2023	$	12,295	12,242	24,537
Balance at January 1, 2022	$	2,787	6,182	8,969
Depreciation		4,178	4,983	9,161
Balance at December 31, 2022	$	6,965	11,165	18,130
Carrying amounts:				
Balance at December 31, 2023	$	8,188	4,855	13,043
Balance at December 31, 2022	$	9,750	8,950	18,700

(i) Intangible assets

(i) The details of costs, accumulated amortization and impairment loss of intangible assets for the years ended December 31, 2023 and 2022 were as follows:

		Computer software	Royalties for the use of patents	Total
Cost:				
Balance at January 1, 2023	$	112,401	3,504	115,905
Additions		2,916	-	2,916
Reclassification (Note)		1,680	-	1,680
Derecognition		(2,696)	(163)	(2,859)
Balance at December 31, 2023	$	114,301	3,341	117,642
Balance at January 1, 2022	$	107,346	4,104	111,450
Additions		5,946	-	5,946
Derecognition		(891)	(600)	(1,491)
Balance at December 31, 2022	$	112,401	3,504	115,905

		Computer software	Royalties for the use of patents	Total
Accumulated amortization and impairment loss:				
Balance at January 1, 2023	$	75,695	1,054	76,749
Amortization		9,880	167	10,047
Derecognition		(2,696)	(163)	(2,859)
Balance at December 31, 2023	$	82,879	1,058	83,937
Balance at January 1, 2022	$	67,023	1,384	68,407
Amortization		9,563	218	9,781
Derecognition		(891)	(600)	(1,491)
Impairment loss		-	52	52
Balance at December 31, 2022	$	75,695	1,054	76,749
Carrying amounts:				
Balance at December 31, 2023	$	31,422	2,283	33,705
Balance at December 31, 2022	$	36,706	2,450	39,156

Note: Reclassification from other non-current assets to intangible assets.

(ii) Amortization

The amortization of intangible assets is included in the following line items of the parent-company-only statement of comprehensive income:

	2023	2022
Cost of revenue	$ 3,189	3,101
Operating expenses	$ 6,858	6,680

(j) Short-term borrowings

The details of short-term borrowings were as follows:

	December 31, 2023	December 31, 2022
Unsecured bank loans	$ 61,410	92,145
Unused credit facilities	$ 1,594,985	1,829,440
Interest rate interval	6.41%	5.03%

(k) Lease liabilities

The carrying amounts of lease liabilities were as follows:

	December 31, 2023	December 31, 2022
Current	$ 9,259	9,062
Non-current	$ 4,161	10,065

For the maturity analysis, please refer to note 6(v).

The amounts recognized in profit or loss were as follows:

		2023	2022
Interest on lease liabilities	$	476	595
Variable lease payments not included in the measurement of lease liabilities	$	817	1,233
Expenses relating to short-term leases	$	351	388

The amounts recognized in the statement of cash flows for the Company were as follows:

		2023	2022
Total cash outflow for leases	$	11,893	11,256

(i) Real estate leases

The Company leases buildings for its office and warehouses. The leases typically run for a period of two to four years. Among these leases, the rent payment on some leases of warehouses is calculated monthly based on the area being used.

(ii) Other leases

The Company leases office and transportation equipment, with lease terms of one to five years. Among these leases,, the Company leases some office equipment with contract terms within one year. These leases are short-term and the Company has elected not to recognize right-of-use assets and lease liabilities for these leases.

(l) Provisions

		Warranties	Sales returns and allowances	Total
Balance at January 1, 2023	$	3,811	5,689	9,500
Provisions made		2,783	7,835	10,618
Amount utilized		(402)	(11,408)	(11,810)
Balance at December 31, 2023	$	6,192	2,116	8,308
Balance at January 1, 2022	$	7,027	3,197	10,224
Provisions made		1,589	45,222	46,811
Amount utilized		(4,805)	(42,730)	(47,535)
Balance at December 31, 2022	$	3,811	5,689	9,500

(i) Warranties

The provision for warranties is made based on the number of units sold currently under warranty, historical rates of warranty claim on those units, and cost per claim to satisfy the warranty obligation. The Company reviews the estimation basis on an ongoing basis and revises it when appropriate.

(ii) Sales returns and allowances

Expected sales returns and allowances are estimated based on historical experience.

(m) Employee benefits

(i) Defined benefit plans

The reconciliations between the present value of defined benefit obligations and the net defined benefit liabilities for defined benefit plans were as follows:

		December 31, 2023	December 31, 2022
Present value of defined benefit obligations	$	55,129	60,106
Fair value of plan assets		(30,880)	(40,124)
		24,249	19,982
Effects of the asset ceiling		-	-
Net defined benefit liabilities	$	24,249	19,982

The Company makes defined benefit plan contributions to the pension fund account at Bank of Taiwan that provides pension benefits for its employees upon retirement. The Company also established pension funds in accordance with the Regulations Governing the Management, Investment, and Distribution of the Employees' Retirement Fund Established by a Profit-seeking Enterprise, which are deposited monthly in the designated financial institutions. The plans entitle a retired employee to receive a payment based on years of service and average salary for the six months prior to the employee's retirement.

1) Composition of plan assets

In accordance with the requirements of the Labor Standards Law, the Company's pension fund account at Bank of Taiwan is managed and administered by the Bureau of Labor Funds of the Ministry of Labor (the Bureau of Labor Funds). According to the Regulations for Revenues, Expenditures, Safeguard and Utilization of the Labor Retirement Fund, with regard to the utilization of the Fund, minimum earnings shall be no less than the earnings attainable from two-year time deposits, with interest rates offered by local banks.

As of December 31, 2023 and 2022, the Company's labor pension fund account balance at Bank of Taiwan amounted to $30,880 and $40,124, respectively. Please refer to the website of the Bureau of Labor Funds for information on the labor pension fund assets including the asset portfolio and yield of the fund.

2) Movements in present value of defined benefit obligations

The movements in present value of defined benefit obligations of the Company were as follows:

		2023	2022
Defined benefit obligations at January 1	$	60,106	79,355
Current service costs and interest expense		1,141	613
Remeasurement on the net defined benefit liabilities (assets)			
－Actuarial loss (gain) arising from changes in financial assumptions		787	(18,157)
－Actuarial loss arising from experience adjustments		3,570	621
Benefits paid by the plan		(10,475)	(2,326)
Defined benefit obligations at December 31	$	55,129	60,106

3) Movements of fair value of plan assets

The movements of the fair value of plan assets of the Company were as follows:

		2023	2022
Fair value of plan assets at January 1	$	40,124	38,814
Interest income		701	243
Remeasurement on the net defined benefit liabilities (assets)			
－Return on plan assets (excluding current interest expense)		95	3,029
Contributions by the employer		435	364
Benefits paid by the plan		(10,475)	(2,326)
Fair value of plan assets at December 31	$	30,880	40,124

4) Changes in the effect of the asset ceiling

There was no effect of the asset ceiling.

5) Expenses recognized in profit or loss

The expenses recognized in profit or loss were as follows:

		2023	2022
Current service costs	$	93	117
Net interest expense on the net defined benefit liability		347	253
	$	440	370
Cost of revenue	$	144	114
Selling expenses		143	123
Administrative expenses		71	68
Research and development expenses		82	65
	$	440	370

6) Remeasurement of the net defined benefit liabilities recognized in other comprehensive income

The remeasurement of the net defined benefit liabilities recognized in other comprehensive income were as follows:

		2023	2022
Cumulative amount at January 1	$	21,763	42,328
Recognized during the period		4,262	(20,565)
Cumulative amount at December 31	$	26,025	21,763

7) Actuarial assumptions

The principal assumptions of the actuarial valuation were as follows:

	December 31, 2023	December 31, 2022
Discount rate	1.625%	1.750%
Future salary increases rate	3.000%	3.000%

The Company expects to make contribution of $435 to the defined benefit plans in the year following December 31, 2023.

The weighted average duration of the defined benefit plans is 13.99 years.

8) Sensitivity analysis

When calculating the present value of the defined benefit obligations, the Company uses judgments and estimations to determine the actuarial assumptions for each measurement date, including discount rates, employee turnover rates and future salary changes. Any changes in the actuarial assumptions may significantly impact the amount of the defined benefit obligations.

The following table summarizes the impact of a change in the assumptions on the present value of the defined benefit obligation on December 31, 2023 and 2022.

	Increase (decrease) in present value of defined benefit obligations	
	0.25% Increase	0.25% Decrease
December 31, 2023		
Discount rate	(1,551)	1,606
Future salary change rate	1,555	(1,508)
December 31, 2022		
Discount rate	(1,818)	1,894
Future salary change rate	1,835	(1,767)

Each sensitivity analysis considers the change in one assumption at a time, leaving the other assumptions unchanged. This approach shows the isolated effect of changing one individual assumption but does not take into account that some assumptions are related. The method used to carry out the sensitivity analysis is the same as the calculation of the net defined benefit liabilities recognized in the balance sheets.

In 2023, the method and assumptions used to carry out the sensitivity analysis was the same as in the prior year.

(ii) Defined contribution plans

The Company contributes monthly an amount equal to 6% of each employee’s monthly wages to the employee’s individual pension fund account at the Bureau of Labor Insurance in accordance with the provisions of the Labor Pension Act. Under this defined contribution plan, the Company has no legal or constructive obligation to pay additional amounts after contributing a fixed amount to the Bureau of Labor Insurance.

For the years ended December 31, 2023 and 2022, the Company recognized pension expenses of $19,348 and $18,475, respectively, in relation to the defined contribution plans.

(n) Income taxes

(i) The components of income tax expense were as follows:

	2023	2022
Current income tax expense		
Current period	$ 54,393	141,763
Adjustments for prior years	1,681	(131)
	56,074	141,632
Deferred income tax expense (benefit)		
Origination and reversal of temporary differences	33,159	(31,859)
Income tax expense	**$ 89,233**	**109,773**

The components of income tax expense (benefit) recognized in other comprehensive income were as follows:

	2023	2022
Items that will not be reclassified subsequently to profit or loss:		
Remeasurement of defined benefit plans	**$ (852)**	**4,113**

Reconciliations of income tax expense and income before income tax were as follows:

	2023	2022
Income before income tax	$ 642,279	668,899
Income tax using the Company's statutory tax rate	$ 128,456	133,780
Investment income recorded under equity method	(22,399)	(7,604)
Investment tax credits	(15,294)	(13,831)
Changes in unrecognized temporary differences	(8,182)	(14,271)
Prior-year adjustments	1,681	(131)
Surtax on undistributed earnings	5,927	4,699
Others	(956)	7,131
	$ 89,233	109,773

(ii) Deferred income tax assets and liabilities

1) Unrecognized deferred income tax assets and liabilities

	December 31, 2023	December 31, 2022
Unrecognized deferred income tax assets:		
Aggregate deductible temporary differences associated with investments in subsidiaries	$ 12,160	14,707
Deductible temporary differences	788	788
	$ 12,948	15,495

	December 31, 2023	December 31, 2022
Unrecognized deferred income tax liabilities:		
Aggregate taxable temporary differences associated with investments in subsidiaries	$ 73,956	68,321

As the Company is able to control the timing of the reversal of the temporary differences associated with investments in its subsidiaries as of December 31, 2023 and 2022, and Management believes that it is probable that the temporary differences will not reverse in the foreseeable future, such temporary differences are not recognized as deferred income tax assets and liabilities.

2) Recognized deferred income tax assets and liabilities

Changes in the amount of deferred income tax assets and liabilities were as follows:

Deferred income tax assets:

		Defined benefit plans	Provision for inventory obsolescence	Warranty provision	Unrealized impairment loss on financial assets	Others	Total
Balance at January 1, 2023	$	3,997	129,673	762	10,000	19,868	164,300
Recognized in profit or loss		1	(30,628)	476	-	(2,701)	(32,852)
Recognized in other comprehensive income		852	-	-	-	-	852
Balance at December 31, 2023	**$**	**4,850**	**99,045**	**1,238**	**10,000**	**17,167**	**132,300**
Balance at January 1, 2022	$	8,109	91,473	1,405	10,000	25,690	136,677
Recognized in profit or loss		1	38,200	(643)	-	(5,822)	31,736
Recognized in other comprehensive income		(4,113)	-	-	-	-	(4,113)
Balance at December 31, 2022	**$**	**3,997**	**129,673**	**762**	**10,000**	**19,868**	**164,300**

Deferred income tax liabilities:

		Others
Balance at January 1, 2023	$	-
Recognized in profit or loss		307
Balance at December 31, 2023	**$**	**307**
Balance at January 1, 2022	$	123
Recognized in profit or loss		(123)
Balance at December 31, 2022	**$**	**-**

(iii) The Company’ s income tax returns for the years through 2021 have been examined and approved by the R.O.C. income tax authorities.

(o) Capital and other equity

(i) Common stock

As of December 31, 2023 and 2022, the Company’ s authorized shares of common stock consisted of 200,000 thousand shares, of which 122,688 thousand shares were issued. As of December 31, 2023 and 2022, as the shares of restricted stock to employees amounting to 0 and 463 thousand shares, respectively, were not yet vested, the Company’ s outstanding shares of common stock were 122,688 and 122,225 thousand shares, respectively. The par value of the Company’ s common stock is $10 (dollars) per share. The Company has reserved 15,000 thousand shares for the exercise of employee stock options.

The movements in outstanding shares of common stock were as follows (in thousands of shares):

	Shares of Common Stock	
	2023	**2022**
Balance at January 1	122,225	100,898
Issuance of new shares in exchange for other company’s shares	-	9,864
Capital increase in cash	-	11,000
Vested restricted stock issued to employees	463	463
Balance at December 31	**122,688**	**122,225**

1) In view of the improvement of market competitiveness and operating synergies, the Company’s Board of Directors meeting held on June 2, 2022 resolved to issue additional 9,864 thousand shares of common stock for the purpose of share exchange with UD INFO Corp. (UD). The Company issued 9,864 thousand shares of common stock, as the consideration for this share exchange transaction, in exchange for 4,932 thousand shares of common stock of UD (approximately equal to 68.54% of the outstanding shares of common stock of UD). Every 2 newly-issued shares of common stock of the Company was exchanged for 1 share of common stock of UD. The abovementioned share exchange and the effective date was on August 1, 2022.

2) In order to seek opportunities for strategic alliances with domestic and international partners and enrich the necessary working capital in response to develop long-term operations, the Company’s shareholders’ meeting held on May 31, 2022 resolved to raise capital through private placement. The effective date of capital increase was on November 17, 2022 and the relevant statutory registration procedures have been completed on December 2, 2022. Details were summarized as follows:

   a) Shares issued: 11,000 thousand shares of common stock

   b) Issue price: $33 (dollars) per share

   c) Total proceeds received by the Company: $363,000

   d) Investor of the private placement: Acer Inc.

   e) Rights and obligations: All the rights and obligations of shares of common stock through the private placement (the “Private Placement Shares”) shall be the same as those of shares of common stock issued and outstanding. However, except for selling to specific investors defined in Article 43-8 of the Securities and Exchange Act, the Private Placement Shares cannot be resold during a three-year period from delivery date. After three years from delivery date, according to the Securities and Exchange Act and related regulations, the Company shall obtain a letter issued by Taiwan Stock Exchange Corporation (“TWSE”) acknowledging that the Private Placement Shares have met the standards for TWSE listing before it may file with FSC for retroactive handling of public issuance procedures. Thereafter, the Company can apply for listing in TWSE of Private Placement Shares.

   f) Others: The Company recognized capital surplus of $253,000, resulting from the issuance price of Private Placement Shares in excess of common stock’s par value.

(ii) Capital surplus

		December 31, 2023	December 31, 2022
Paid-in capital in excess of par value	$	866,883	866,883
Employee stock options		12,901	12,901
Treasury stock transactions		3,781	3,781
Restricted stock to employees		26,499	26,499
Changes in equity of associates accounted for using equity method		15,761	14,258
	$	925,825	924,322

Pursuant to the Company Act, any realized capital surplus is initially used to cover an accumulated deficit, and the balance, if any, could be transferred to common stock as stock dividends based on the original shareholding ratio or distributed as cash dividends based on a resolution approved by the shareholders. Realized capital surplus includes the premium derived from the issuance of shares of stock in excess of par value and donations from shareholders received by the Company. In accordance with the Regulations Governing the Offering and Issuance of Securities by Securities Issuers, distribution of stock dividends from capital surplus in any one year shall not exceed 10% of paid-in capital.

(iii) Retained earnings

1) Legal reserve

If a company has no accumulated deficit, it may, pursuant to a resolution approved by the shareholders, distribute its legal reserve to its shareholders by issuing new shares or by distributing cash for the portion in excess of 25% of the paid in capital.

2) Special reserve

In accordance with the requirements issued by the FSC, a portion of earnings shall be allocated as special reserve during earnings distribution. The Company shall make allocation of special reserve for the amount of the current-period total net reduction of other shareholders’ equity. An equivalent amount of special reserve shall be allocated from the after-tax net profit in the period, plus items other than the after-tax net profit in the period that are included in the undistributed current-period earnings and the undistributed prior-period earnings. A portion of the undistributed prior-period earnings shall be reclassified to special earnings reserve (which does not qualify for earnings distribution) to account for cumulative changes to the net reduction of other shareholders’ equity pertaining to prior periods. The amounts of subsequent reversals pertaining to the net reduction of other shareholders’ equity shall qualify for additional distributions.

3) Earnings distribution

The Company's Articles of Incorporation stipulate that at least 10% of annual net income, after deducting accumulated deficit, if any, must be retained as legal reserve until such retention equals the amount of paid in capital. In addition, a special reserve shall be set aside in accordance with applicable laws and regulations. The remaining balance, together with the unappropriated earnings from the previous years, after retaining a certain portion of it for business considerations, can be distributed as dividends to shareholders. If dividends are distributed by issuing new shares, the distribution shall be approved by the shareholders' meeting. If dividends are distributed in the form of cash, a resolution shall be adopted by a majority vote at a meeting of the board of directors attended by more than two-thirds of the total number of director; and in addition thereto a report of such distribution shall be submitted to the shareholders' meeting. Except for the distribution of capital surplus and legal reserve in accordance with applicable laws and regulations, the Company cannot distribute any earnings when there are no retained earnings.

Since the Company operates in an industry experiencing rapid change and development, earnings are distributed in consideration of the current year's earnings, the overall economic environment, related laws and decrees, as well as the Company's long term development and stability in its financial position. The Company has adopted a balance dividend policy, in which a cash dividend comprises at least 10% of the total dividend distribution.

The cash dividends appropriation of 2022 and 2021 earnings were approved by the Company's Board of Directors on February 21, 2023 and February 23, 2022, respectively. The resolved appropriation were as follows:

	2022		2021	
	Dividends per share (in dollars)	**Amount**	**Dividends per share (in dollars)**	**Amount**
Dividends per share:				
Cash dividends	$ 3.30	**404,871**	2.89	**294,272**

(iv) Other equity items (net after tax)

1) Foreign currency translation differences

	2023	2022
Balance at January 1	$ (39,687)	(74,366)
Foreign exchange differences arising from translation of foreign operations	(3,747)	34,679
Balance at December 31	**$ (43,434)**	**(39,687)**

2) Unrealized gains (losses) on financial assets measured at fair value through other comprehensive income

		2023	2022
Balance at January 1	$	(47,702)	(51,415)
Share of other comprehensive income of subsidiaries		(16)	(154)
Unrealized gains from investments in equity instruments measured at fair value through other comprehensive income		1,668	3,867
Balance at December 31	$	(46,050)	(47,702)

3) Unearned compensation cost

		2023	2022
Balance at January 1	$	-	(8,941)
Compensation cost arising from restricted stock issued to employees		-	8,941
Balance at December 31	$	-	-

(p) Share-based payment－Restricted stock to employees

For the years ended December 31, 2023 and 2022, the Company had the following share-based payment arrangements:

	Restricted stock to employees
Grant date	2021.01.06
Number of shares granted (thousand shares)	926
Contract term	2 years
Vesting conditions	(Note 2)
Qualified employees	(Note 1)

Note 1: Full-time employees who conformed to certain requirements

Note 2: The employees who were granted restricted stock are entitled to purchase the shares of restricted stock at the exercise price of $0. The total share of the restricted stocks issued was determined by achievement of the Company's operation objective for the year 2020. The vesting period of the restricted stock is 1～2 years subsequent to the grant date, and the restricted shares of stock will be vested by taking the individual employee's performance conditions into consideration. When the vesting conditions are met, the restricted stock received by the employees shall be transferred from an escrow account to the employee's security account. During the vesting period, the restricted stock could not be sold, pledged, transferred, gifted, or disposed of in any other forms, excluding inheritance; nevertheless, the rights of a shareholder (such as attendance, proposing, speaking, voting and election at the shareholders' meeting) are the same as those of the Company's shareholders but are executed by the custodian who will act based on law and regulations. The Company will take back the restricted stock from its employees and retire those shares when the vesting conditions are not met.

(i) The movements in number of restricted stock issued to employees (in thousands) were as follows:

	2023	2022
Balance at January 1	463	926
Vested	(463)	(463)
Balance at December 31	-	463

The fair value of the restricted stock to employees was $38.6 (in dollars) per share, which was determined by reference to the closing price of the Company's common stock traded on the Taiwan Stock Exchange at the grant date. For the years ended December 31, 2023 and 2022, the compensation cost for the restricted shares of stock amounted to $0 and $8,941, respectively.

(ii) Employee compensation cost

Expenses resulting from share-based payment transactions are as follows:

	2023	2022
Compensation cost from restricted stock issued to employee	$ -	8,941

(q) Earnings per share ("EPS")

(i) Basic earnings per share

	2023	2022
Net income attributable to shareholders of the Company	$ 553,046	559,126
Weighted-average number of ordinary shares outstanding (in thousands)	122,682	106,846
Basic earnings per share (in dollars)	$ 4.51	5.23

(ii) Diluted earnings per share

	2023	2022
Net income attributable to shareholders of the Company	$ 553,046	559,126
Weighted-average number of ordinary shares outstanding (in thousands)	122,682	106,846
Effect of dilutive potential common stock (in thousand):		
Remuneration to employees	1,392	2,195
Restricted stock to employees	-	463
Weighted-average number of ordinary shares outstanding (including effect of dilutive potential common stock)	124,074	109,504
Diluted earnings per share (in dollars)	$ 4.46	5.11

(r) Revenue from contracts with customers

(i) Disaggregation of revenue

		2023	2022
Major products:			
Flash memory cards	$	3,944,306	4,647,218
Memory modules		2,606,675	3,475,422
Others		76,682	101,915
	$	6,627,663	8,224,555

(ii) Contract balances

		December 31, 2023	December 31, 2022	January 1, 2022
Notes and accounts receivable (including related parties)	$	732,880	738,368	1,308,119
Less: loss allowance		(21,417)	(21,821)	(5,148)
	$	711,463	716,547	1,302,971

		December 31, 2023	December 31, 2022	January 1, 2021
Contract liabilities (presented under other current liabilities)	$	26,858	49,801	35,738

For details on notes and accounts receivable and its loss allowance, please refer to note 6(d).

The amounts of revenue recognized for the years ended December 31, 2023 and 2022 that were included in the contract liability balances at January 1, 2023 and 2022, were $49,731 and $35,603, respectively.

(s) Remuneration to employees and directors

The Company’ s article of incorporation requires that earnings shall first to be offset against any deficit, then, a minimum of 4% will be distributed as remuneration to its employees and no more than 1.4% to its directors. Employees who are entitled to receive the abovementioned employee remuneration, in shares or cash, include the employees of the subsidiaries of the Company who meet certain specific requirement.

For the years ended December 31, 2023 and 2022, the Company estimated its remuneration to employees amounting to $70,405 and $83,479, respectively, and the remuneration to directors amounting to $10,119 and $10,683, respectively. The abovementioned estimated amounts are calculated based on the net profits before tax of each period (excluding the remuneration to employees and directors), multiplied by a certain percentage of the remuneration to employees and directors. The estimations are recognized as operating expenses. If the actual amounts differ from the estimated amounts, the differences shall be accounted as changes in accounting estimates and recognized as profit or loss in following year.

The abovementioned estimated remuneration to employees and directors is the same as the amount approved by the Board of Directors and will be paid in cash. Related information is available on the Market Observation Post System website of the Taiwan Stock Exchange.

(t) Non-operating income and loss

(i) Interest income

		2023	2022
Interest income from bank deposits	$	27,669	5,219

(ii) Other gains and losses, net

		2023	2022
Foreign currency exchange gains	$	3,488	42,354
Losses on financial assets and liabilities at fair value through profit or loss		(4,216)	(37,511)
Gains on disposal of property, plant and equipment		776	48
Impairment loss on non-financial assets		(46)	(303)
Others		7,024	7,744
	$	7,026	12,332

(iii) Finance costs

		2023	2022
Interest expense from bank loans	$	11,867	5,622
Interest expense from lease liabilities		476	595
	$	12,343	6,217

(u) Financial instruments

(i) Categories of financial instruments

1) Financial assets

		December 31, 2023	December 31, 2022
Financial assets at fair value through profit or loss	$	593	-
Financial assets at fair value through other comprehensive income		35,034	29,616
Financial assets measured at amortized cost:			
Cash and cash equivalents		541,914	797,322
Notes and accounts receivable (including related parties)		711,463	716,547
Other financial assets (including current and non-current)		1,301,875	1,200,005
Subtotal		2,555,252	2,713,874
Total	$	2,590,879	2,743,490

2) Financial liabilities

	December 31, 2023	December 31, 2022
Financial liabilities at fair value through profit or loss	$ 70	1,012
Financial liabilities measured at amortized cost:		
Short-term borrowings	61,410	92,145
Notes and accounts payable (including related parties)	1,095,629	625,614
Other payables (including related parties)	387,557	410,555
Lease liabilities (including current and non-current)	13,420	19,127
Subtotal	1,558,016	1,147,441
Total	**$ 1,558,086**	**1,148,453**

(ii) Fair value information

1) Financial instruments not measured at fair value

The Company considers that the carrying amounts of financial assets and financial liabilities measured at amortized cost approximate their fair values.

2) Financial instruments measured at fair value

The fair value of financial assets and liabilities at fair value through profit and loss and financial assets at fair value through other comprehensive income are measured on a recurring basis.

The table below analyzes financial instruments that are measured at fair value subsequent to initial recognition, grouped into Levels 1 to 3 based on the degree to which the fair value is observable. The different levels have been defined as follows:

a) Level 1: quoted prices (unadjusted) in active markets for identified assets or liabilities.

b) Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e., as prices) or indirectly (i.e., derived from prices).

c) Level 3: inputs for the assets or liabilities that are not based on observable market data (unobservable inputs).

	December 31, 2023				
		Fair Value			
	Carrying amount	Level 1	Level 2	Level 3	Total
Financial assets at fair value through profit or loss－current:					
Derivatives－foreign currency forward contracts	$ 593	-	593	-	593
Financial assets at fair value through other comprehensive income－non-current:					
Domestic unlisted stocks	$ 35,034	-	-	35,034	35,034
Financial liabilities at fair value through profit or loss－current:					
Derivatives－foreign currency forward contracts	$ 70	-	70	-	70

	December 31, 2022				
		Fair Value			
	Carrying amount	Level 1	Level 2	Level 3	Total
Financial assets at fair value through other comprehensive income－non-current:					
Domestic unlisted stocks	$ 29,616	-	-	29,616	29,616
Financial liabilities at fair value through profit or loss－current:					
Derivatives－foreign currency forward contracts	$ 892	-	892	-	892
Derivatives－foreign exchange swaps	120	-	120	-	120
	$ 1,012	-	1,012	-	1,012

(iii) Valuation techniques used in fair value measurement

1) Non-derivative financial instruments

The fair value of financial instruments traded in active liquid markets is determined with reference to quoted market prices.

Except for the abovementioned financial instruments traded in an active market, the fair value of other financial instruments are based on the valuation techniques or the quotation from counterparty. The fair value using valuation techniques refers to the current fair value of other financial instruments with similar conditions and characteristics, or using a discounted cash flow method, or other valuation techniques which include model calculating with observable market data at the reporting date.

The fair value of the unlisted stock held by the Company is estimated by using the market approach and is determined by reference to valuations of similar companies, third-party quotation, and recent financing and operating activities. The significant unobservable inputs is primarily the liquidity discounts. No quantitative information is disclosed due to that the possible changes in liquidity discounts would not cause significant potential financial impact.

2) Derivative financial instruments

The fair value of derivative financial instruments is determined using a valuation technique, with estimates and assumptions consistent with those used by market participants and that are readily available to the Company. The fair value of foreign currency forward contracts and foreign exchange swaps is computed individually by using the valuation technique.

(iv) Transfers between levels of the fair value hierarchy

There were no transfers among fair value hierarchies for the years ended December 31, 2023 and 2022.

(v) Movement in financial assets included in Level 3 of fair value hierarchy

		2023	2022
Balance, beginning of year	$	29,616	25,749
Purchased		3,750	-
Gains recognized in other comprehensive income, and presented in unrealized gains on financial assets measured at fair value through other comprehensive income		1,668	3,867
Balance, end of year	$	35,034	29,616

(v) Financial risk management

The Company is exposed to credit risk, liquidity risk, and market risk (including currency risk, interest rate risk, and other market price risk). The Company has disclosed the information on exposure to the aforementioned risks and the Company’s policies and procedures to measure and manage those risks as well as the quantitative information below.

The Company’s management monitors and reviews financial activities in accordance with procedures required by relevant regulations and internal controls. Internal auditors undertake both regular and ad hoc reviews of risk management controls and procedures, the results of which are reported to the Company’s Board of Directors.

The Company’s Board of Directors is responsible for developing and monitoring the Company’s risk management policies. The Company’s risk management policies are established to identify and analyze the risks faced by the Company, to set appropriate risk limits and controls, and to monitor adherence to the controls. Risk management policies and systems are reviewed regularly to reflect changes in market conditions and the Company’s operations.

(i) Credit risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty of a financial instrument fails to meet its contractual obligations, and arises principally from the Company’s cash and cash equivalents, derivative instruments, receivables from customers and time deposits classified as other financial assets. As of December 31, 2023 and 2022, the Company’s maximum exposure to credit risk amounted to $2,590,879 and $2,743,490, respectively.

The Company maintains bank deposits and enters into derivative transactions with various reputable financial institutions; therefore, the exposure related to potential default by those counter-parties is not considered significant.

In order to reduce credit risk of accounts receivable, the Company has established a credit policy under which each customer is analyzed individually for creditworthiness for the purpose of setting the credit limit. Additionally, the Company continuously evaluates the credit quality of its customers and utilizes its insurance to minimize the credit risk. As of December 31, 2023 and 2022, the Company has insured credit insurance that cover accounts receivable amounting to $381,740 and $246,712, respectively. When the debtors are in default, the Company will receive 90% of the credit insurance.

The Company believes that there is no significant concentration of credit risk due to the Company's large number of customers and their wide geographical spread.

(ii) Liquidity risk

Liquidity risk is the risk that the Company will encounter difficulty in settling its financial liabilities by delivering cash or other financial assets. The Company manages liquidity risk by monitoring regularly the current and mid- to long-term cash demand, maintaining adequate cash and banking facilities, and ensuring compliance with the terms of the loan agreements. As of December 31, 2023 and 2022, the Company had unused credit facilities of $1,594,985 and $1,829,440, respectively.

The table below summarizes the maturity profile of the Company's financial liabilities based on contractual undiscounted payments.

	Carrying amount	Contractual cash flows	Within 1 year	More than 1 year
December 31, 2023				
Non-derivative financial liabilities:				
Short-term borrowings	$ 61,410	(61,755)	(61,755)	-
Notes and accounts payable (including related parties)	1,095,629	(1,095,629)	(1,095,629)	-
Other payables (including related parties)	387,557	(387,557)	(387,557)	-
Lease liabilities	13,420	(13,714)	(9,489)	(4,225)
Derivative financial instruments:				
Foreign currency forward contracts：				
Inflow	-	4,057	4,057	-
Outflow	70	(4,127)	(4,127)	-
December 31, 2022				
Non-derivative financial liabilities:				
Short-term borrowings	$ 92,145	(92,531)	(92,531)	-
Notes and accounts payable (including related parties)	625,614	(625,614)	(625,614)	-
Other payables (including related parties)	410,555	(410,555)	(410,555)	-
Lease liabilities	19,127	(19,657)	(9,428)	(10,229)
Derivative financial instruments:				
Foreign currency forward contracts：				
Inflow	-	102,995	102,995	-
Outflow	892	(103,887)	(103,887)	-
Foreign exchange swaps:				
Inflow	-	92,025	92,025	-
Outflow	120	(92,145)	(92,145)	-

The Company does not expect that the cash flows included in the maturity analysis would occur significantly earlier or at significantly different amounts.

(iii) Market risk

Market risk is the risk that changes in market prices, such as foreign exchange rates, interest rates, and equity prices, will affect the Company's income or the value of its financial instruments. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimizing the return.

The Company utilizes derivative financial instruments to manage market risk. All such transactions are carried out within the guidelines set by the Company's Board of Directors.

1) Foreign currency risk

The Company utilizes foreign currency forward contracts and foreign exchange swaps to hedge its foreign currency exposure with respect to its sales and purchases. The maturity dates of derivative financial instruments the Company entered into were less than six months and did not conform to the criteria for hedge accounting. These financial instruments help to reduce, but do not eliminate, the impact of foreign currency exchange rate movements.

The Company's exposure to foreign currency risk arises from cash and cash equivalents, notes and accounts receivable (including related parties), notes and accounts payable (including related parties), other payables (including related parties), other financial assets －current and loans and borrowings that are denominated in a currency other than the functional currency of the Company. At the reporting date, the carrying amounts of the Company's significant monetary assets and liabilities denominated in a currency other than the functional currency of the Company and their respective sensitivity analysis were as follows:

(Amounts in Thousands of New Taiwan Dollars)

	December 31, 2023				
	Foreign currency (in thousands)	**Exchange rate**	**NTD (in thousands)**	**Change in magnitude**	**Pre-tax effect on profit or loss (in thousands)**
Financial assets					
Monetary items					
USD	$ 25,239	30.705	774,963	1%	7,750
CNY	20,502	4.328	88,733	1%	887
JPY	20,850	0.217	4,524	1%	45
Financial liabilities					
Monetary items					
USD	29,003	30.705	890,537	1%	8,905
CNY	3,137	4.328	13,577	1%	136
JPY	988	0.217	214	1%	2

	December 31, 2022				
	Foreign currency (in thousands)	**Exchange rate**	**NTD (in thousands)**	**Change in magnitude**	**Pre-tax effect on profit or loss (in thousands)**
Financial assets					
Monetary items					
USD	$ 23,828	30.715	731,877	1%	7,319
CNY	14,083	4.422	62,275	1%	623
JPY	21,550	0.233	5,021	1%	50
Financial liabilities					
Monetary items					
USD	18,381	30.715	564,572	1%	5,646
CNY	110	4.422	486	1%	5

As the Company deal in diverse foreign currencies, gains and losses on foreign exchange were summarized as a single amount. The aggregate of realized and unrealized foreign exchange gains for the years ended December 31, 2023 and 2022 were $3,488 and $42,354, respectively.

2) Interest rate risk

The Company’s bank loans carried floating interest rates. To manage the interest rate risk, the Company periodically assesses the interest rates of bank loans and maintains good relationships with financial institutions to obtain lower financing costs. The Company also strengthens the management of working capital to reduce the dependence on bank loans, as well as the risk arising from fluctuation of interest rates.

If interest rates had been 100 basis points (1%) higher/lower, with all other variables held constant, pre-tax income for the years ended December 31, 2023 and 2022 would have been $614 and $921, respectively, lower/higher, which mainly resulted from the borrowings with floating interest rates.

3) Other market price risk

The Company has long-term investments in unlisted stocks, which the Company does not actively participate in trading. The Company anticipates that there is no significant market risk related to the investments.

(w) Capital management

In consideration of the industry dynamics and future developments, as well as external environment factors, the Company maintains an optimal capital structure to enhance long-term shareholder value by managing its capital in a manner to ensure that it has sufficient and necessary financial resources to fund its working capital needs, research and development expenses, dividend payments, and other business requirements for continuing operations and to reward shareholders and take into consideration the interests of other shareholders. The Company monitors its capital through reviewing the liability-to-equity ratio periodically.

The Company’s liability-to-equity ratios at the end of each reporting period were as follows:

	December 31, 2023	December 31, 2022
Total liabilities	$ 1,697,300	1,320,964
Total equity	$ 4,308,361	4,164,188
Liability-to-equity ratio	39.40%	31.72%

The Company increased its notes and accounts payable (including related parties) due to the increase of stock level. It also resulted in the increasing of liability-to-equity ratio.

(x) Investing and financing activities not affecting current cash flow

(i) For issuance of additional common shares in exchange for other company’s common shares on August 1, 2022, please refer to note 6(f).

(i) For acquisition of right-of-use assets under operating lease for the years ended December 31, 2023 and 2022, please refer to note 6(h).

(ii) Reconciliation of liabilities arising from financing activities was as follows:

	January 1, 2023	Cash flows	Non-cash changes Acquisition	December 31, 2023
Short-term borrowings	$ 92,145	(30,735)	-	61,410
Lease liabilities	19,127	(10,249)	4,542	13,420
	$ 111,272	(40,984)	4,542	74,830

	January 1, 2022	Cash flows	Non-cash changes Acquisition	December 31, 2022
Short-term borrowings	$ 251,979	(159,834)	-	92,145
Lease liabilities	26,796	(9,040)	1,371	19,127
	$ 278,775	(168,874)	1,371	111,272

7. Related-party transactions:

(a) Name and relationship with related parties

The following are the entities that have had transactions with the Company during the periods covered in the parent-company-only financial statements and the Company’s subsidiaries.

Name of related parties	Relationship with the Company
Apacer Memory America Inc. (AMA”)	The Company’s subsidiary
Apacer Technology B.V. (AMH”)	The Company’s subsidiary
Kingdom Corp. Limited (AMK”)	The Company’s subsidiary
Apacer Technology Japan Corp. (AMJ”)	The Company’s subsidiary
Apacer Technologies Private Limited (ATPL”)	The Company’s subsidiary
Apacer Technology (BVI) Inc. (ACYB”)	The Company’s subsidiary
UD INFO Corp. (UD”)	The Company’s subsidiary (Note)
Apacer Electronic (Shanghai) Co., Ltd (AMC”)	ACYB’s subsidiary
Shenzhen Kylinesports Technology Co. (“AMS”)	AMK’s subsidiary
Phison Electronics Corporation (“Phison”)	The Company’s director
JoiiUp Technology Inc. (“JoiiUp”)	The Company’s associate
OTO Photonics Inc. (“OTO”)	The Company’s other related party
Directors, general manager and vice general managers	The Company’s key management personnel

Note: As disclosed in note 6(f), UD has become the Company’s subsidiary on August 1, 2022.

(b) Significant related-party transactions

(i) Revenue

	2023	2022
Subsidiaries	$ 1,430,121	1,901,161
The Company’s key management personnel (the Company’s director)	2,628	8,412
	$ 1,432,749	1,909,573

The sales prices and payment terms of sales to related parties are not different from those with third-party customers. The payment terms of 30～90 days calculated from the delivery date shows no significant difference between related parties and third-party customers. The Company does not receive any collateral for the receivables from related parties. The Company has not recognized a specific allowance for doubtful receivables after assessment.

(ii) Purchases

	2023	2022
Subsidiaries	$ 1,716	2,585
The Company’s key management personnel—Phison (the Company’s director)	1,047,711	1,073,281
Other related parties	439	432
	$ 1,049,866	1,076,298

There are no significant differences between the purchase prices for related parties and those for third-party vendors. The payment terms of EOM 45～60 days shows no significant difference between related parties and third-party vendors.

(iii) Receivables

Account	Related-party categories	December 31, 2023	December 31, 2022
Accounts receivable from related parties	Subsidiaries:		
	AMC	$ 77,702	60,729
	AMH	29,582	57,224
	AMK	23,140	17,378
	AMA	13,651	30,804
	Others	8,953	14,601
	The Company’s key management personnel (the Company’s director)	558	377
		$ 153,586	181,113

(iv) Payables

Account	Related-party categories	December 31, 2023	December 31, 2022
Accounts payable to related parties	The Company’s key management personnel－Phison (the Company’s director)	$ 352,333	134,255
	Other related parties	14	135
	Subsidiaries	-	413
Other payables to related parties	Subsidiaries	1,913	1,437
	The Company’s key management personnel (the Company’s director)	245	146
		$ 354,505	136,386

(v) Operating expenses

The operating expenses related to the after-sale service provided by related parties and sundry purchases were as follows:

Account	Related party categories	2023	2022
Operating expenses	Subsidiaries	$ 4,499	3,387
	The Company's key management personnel (the Company's director)	353	440
	Associates	50	50
	Other related parties	-	3
		$ 4,902	3,880

(c) Compensation for key management personnel

	2023	2022
Short-term employee benefits	$ 77,832	78,344
Post-employment benefits	432	432
Share-based payments	-	3,875
	$ 78,264	82,651

8. Pledged assets: None

9. Significant commitments and contingencies:

(a) Significant unrecognized commitments

	December 31, 2023	December 31, 2022
Unused letters of credit	$ 15,000	-

(b) As of December 31, 2023 and 2022, the Company had outstanding letters of guarantee amounting to $12,000 for the purpose of the payment of customs duties.

10. Significant loss from disaster: None

11. Significant subsequent events: None

12. Others:

Employee benefits, depreciation and amortization expenses categorized by function were as follows:

	2023			2022		
	Cost of revenue	**Operating expenses**	**Total**	**Cost of revenue**	**Operating expenses**	**Total**
Employee benefits:						
Salaries	159,869	457,658	617,527	155,492	452,147	607,639
Insurance	15,360	29,315	44,675	13,432	26,703	40,135
Pension	5,955	13,833	19,788	5,600	13,245	18,845
Remuneration to directors	-	15,969	15,969	-	16,533	16,533
Others	8,683	21,656	30,339	8,474	24,286	32,760
Depreciation	20,217	22,892	43,109	18,660	22,944	41,604
Amortization	3,189	6,858	10,047	3,101	6,680	9,781

For the years ended December 31, 2023 and 2022, the information on the number of employees and employee benefit expense of the Company is as follows:

	2023	**2022**
The number of employees	**494**	**477**
The number of non-employee directors	**7**	**7**
Average employee benefits	**$ 1,463**	**1,488**
Average employee salaries	**$ 1,268**	**1,293**
Average employee salaries adjustment rate	**(1.93)%**	**9.76%**
Remuneration to supervisors	**$ -**	**-**

The Company compensation policies (including compensation to the directors, managers and employees) are as follows:

The Board of Directors is authorized by the Company’s Articles of Incorporation to determine the compensation recommended by the Remuneration Committee for the directors with reference to the extent of his/her involvement in and value of his/her contribution to the operation of the Company and industry norms in Taiwan. In addition, when there is profit in any fiscal year, based on the percentage of the profit as remuneration to directors stipulated in the Company’s Articles of Incorporation and the criteria for allocation subject to the Company’s policy, the amount of remunerations for each director must be recommended by the Remuneration Committee to the Board of Directors for approval.

The appointment, discharge and compensation of the Company’s executive officers shall be subject to the Company’s policy. The Company set the compensation policy for its executive officers by referencing industry norms in Taiwan, as well as their education, experience, responsibility and performance.

In order to achieve the purpose of attracting talents, retaining and training talents for a long term, the Company set the compensation policy for its employees by referencing to the industry norms in Taiwan, as well as their education, experience, responsibility and performance to provide employees with competitive salaries, as well as various reward systems to motivate employees.

13. Additional disclosures:

(a) Information on significant transactions:

In accordance with the requirements of the Regulations Governing the Preparation of Financial Reports by Securities Issuers, the Company discloses the following information on significant transactions for the year ended December 31, 2023:

(i) Financing provided to other parties: None

(ii) Guarantee and endorsement provided to other parties: None

(iii) Marketable securities held at the reporting date (excluding investments in subsidiaries and associates):

(In Thousands of Shares / Thousands of Units)

Investing Company	Marketable Securities Type and Name	Relationship with the Securities Issuer	Financial Statement Account	December 31, 2023				Note
				Shares/ Units	Carrying Value	Percentage of Ownership	Fair value	
The Company	Stock: Formosa Golf and Country Club Corp.	-	Financial assets at fair value through other comprehensive income－non-current	3.6	10,011	0.01%	10,011	-
The Company	Stock: Koson Technology Inc.	-	Financial assets at fair value through other comprehensive income－non-current	150	3,750	14.85%	3,750	-
The Company	Stock: OTO Photonics Inc.	-	Financial assets at fair value through other comprehensive income－non-current	3,772	21,273	11.30%	21,273	-
AMS	Stock: Futurepath Technology (Shenzhen) Co., Ltd.	-	Financial assets at fair value through other comprehensive income－non-current	31.5	137	0.03%	137	-

(iv) Marketable securities for which the accumulated purchase or sale amounts for the year exceed $300 million or 20% of the paid-in capital: None

(v) Acquisition of real estate which exceeds $300 million or 20% of the paid-in capital: None

(vi) Disposal of real estate which exceeds $300 million or 20% of the paid-in capital: None

(vii) Total purchases from and sales to related parties which exceed $100 million or 20% of the paid-in capital:

			Transaction Details				Transactions with Terms Different from Others		Notes/Accounts Receivable or (Payable)		
Company Name	**Related Party**	**Nature of Relationship**	**Purchases/ (Sales)**	**Amount**	**% of Total Purchases/ (Sales)**	**Payment Terms**	**Unit Price**	**Payment Terms**	**Ending Balance**	**% of Total Notes/Accounts Receivable or (Payable)**	**Note**
The Company	AMA	The Company’s subsidiary	(Sales)	(280,677)	(4) %	OA30	-	-	13,651	2 %	-
The Company	AMK	The Company’s subsidiary	(Sales)	(144,083)	(2) %	OA30	-	-	23,140	3 %	-
The Company	AMH	The Company’s subsidiary	(Sales)	(495,465)	(7) %	OA30	-	-	29,582	4 %	-
The Company	AMC	The Company’s subsidiary	(Sales)	(436,272)	(7) %	M60	-	-	77,702	11 %	-
The Company	Phison	The Company’s director	Purchases	1,047,711	18 %	M45	-	-	(352,333)	(32) %	-
UD	Phison	The Company’s director	Purchases	286,018	80 %	M45	-	-	(43,410)	(82) %	-
AMA	The Company	AMA’s parent company	Purchases	280,677	100 %	OA30	-	-	(13,651)	(100) %	-
AMK	The Company	AMK’s parent company	Purchases	144,083	100 %	OA30	-	-	(23,140)	(100) %	-
AMH	The Company	AMH’s parent company	Purchases	495,465	100 %	OA30	-	-	(29,582)	(100) %	-
AMC	The Company	AMC’s parent company	Purchases	436,272	98 %	M60	-	-	(77,702)	(100) %	-

(viii) Receivables from related parties which exceed $100 million or 20% of the paid-in capital: None

(ix) Transactions about derivative instruments: Please refer to note 6(b)

(b) Information on investees:

(In Thousands of Shares)

Investor	Investee	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2023			Net Income (Loss) of the Investee	Investment Income (Loss)	Note
				December 31, 2023	December 31, 2022	Shares	Percentage of Ownership	Carrying Value			
The Company	AMA	USA	Sales of memory modules and storage memory devices	610	610	20	100.00%	319,691	23,993	23,993	-
The Company	ACYB	British Virgin Islands	Investment and holding activity	18,542	18,542	2,636	100.00%	51,325	7,028	7,028	-
The Company	AMJ	Japan	Sales of memory modules and storage memory devices	2,918	2,918	0.2	100.00%	20,213	752	752	-
The Company	ATPL	India	Auxiliary sales of memory modules and storage memory devices	915	915	29	100.00%	1,536	113	113	-
The Company	AMK	Hong Kong	Sales of memory modules and storage memory devices	20,917	20,917	5,000	100.00%	13,029	1,088	1,088	-
The Company	AMH	Netherlands	Sales of memory modules and storage memory devices	130,469	130,469	80	100.00%	77,556	10,684	10,684	-
The Company	JoiiUp	Taiwan	Cloud services and software development	7,500	7,500	750	10.35%	1,351	(5,758)	(596)	-
The Company	UD	Taiwan	Manufacture and sales of memory modules and storage memory devices	380,815	380,815	4,932	68.54%	447,904	176,618	112,593	-

(c) Information on investment in Mainland China:

(i) Name and main businesses and products of investee companies in Mainland China:

Investee Company Name	Main Businesses and Products	Total Amount of Paid-in Capital	Method of Investment (Note 1)	Accumulated Outflow of Investment from Taiwan as of January 1, 2023	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2023	Net Income (Loss) of Investee	% of Ownership of Direct or Indirect Investment	Investment Income (Loss)	Carrying Value as of December 31, 2023	Accumulated Inward Remittance of Earnings as of December 31, 2023
					Outflow	Inflow						
Apacer Electronic (Shanghai) Co., Ltd. (AMC)	Sales of memory modules and storage memory devices	15,352 (USD 500 thousand)	Type 2	15,352 (USD 500 thousand)	-	-	15,352 (USD 500 thousand)	7,015	100.00 %	7,015 (Note 2)	48,073	-
Shenzhen Kylinesports Technology Co. (AMS)	Sales of gaming products	22,967 (USD 748 thousand)	Type 2	18,362 (USD 598 thousand)	-	-	18,362 (USD 598 thousand) (Note 5)	(1,457)	99.00 %	(1,442) (Note 3)	11,145	-

Note 1: Method of investments:
Type 1: Direct investment in Mainland China.
Type 2: Indirect investment in Mainland China through a holding company established in a third country.
Type 3: Others.

Note 2: Investment income or loss recognized based on the financial statements audited by the auditors of the Company.

Note 3: Investment income or loss recognized based on the unaudited financial statements of investee companies.

Note 4: The above amounts were translated into New Taiwan dollars at the exchange rate of US$1=NT$30.705.

Note 5: The amount of AMK reinvestments amounting to US$134 thousand was excluded.

(ii) Limits on investments in Mainland China:

Investor	Accumulated Investment in Mainland China as of December 31, 2023	Investment Amounts Authorized by Investment Commission, MOEA	Upper Limit on Investment Authorized by Investment Commission, MOEA
The Company	33,714 (USD1,098 thousand)	37,829 (USD1,232 thousand)	2,585,017

(iii) Significant transactions with investee companies in Mainland China:

Please refer to section "Information on significant transactions" for detail description.

(d) Major shareholders:

Shareholding / Major Shareholder's Name	Shares	Percentage
Phison Electronics Corporation	12,554,580	10.23%
Acer Inc.	11,710,000	9.54%

14. Segment information:

Please refer to the consolidated financial statements for the years ended December 31, 2023 and 2022 for disclosure of segment information.

Seven. Review and analysis of the financial status and financial performance and risk issues

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: TWD 1,000

Item \ Year	2023	2022	Difference	
			Amount	%
Current assets	4,994,176	4,598,725	395,451	8.60
Long-term investments	36,522	30,213	6,309	20.88
Property, plant and equipment	915,689	917,402	(1,713)	(0.19)
Right-of-use assets.	41,516	46,445	(4,929)	(10.61)
Intangible assets	225,324	245,556	(20,232)	(8.24)
Other assets	158,285	183,695	(25,410)	(13.83)
Total assets	6,371,512	6,022,036	349,476	5.08
Current liabilities	1,819,180	1,609,246	209,934	13.05
Non-current liabilities	90,261	108,881	(18,620)	(17.10)
Total liabilities	1,909,441	1,718,127	191,314	11.14
Share capital	1,226,882	1,226,882	-	-
Capital reserve	925,825	924,322	1,503	0.16
Retained earnings	2,245,138	2,100,373	144,765	6.89
Other equities	(89,484)	(87,389)	(2,095)	2.40
Treasury shares	-	-	-	-
Attributed to stockholders of the company	4,308,361	4,164,188	144,173	3.46
Non-controlling interests	153,710	139,721	13,989	10.01
Total equity	4,462,071	4,303,909	158,162	3.67
Changes of more than 20%, or more than TWD 10 million are described below: None				

II. Financial performance

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

Unit: TWD 1,000

Item / Year	2023	2022	Difference	
			Amount	%
Operating revenue	7,631,446	8,797,035	(1,165,589)	(13.25)
Gross operating profit	1,778,642	1,688,414	90,228	5.34
Operating income	710,534	694,122	16,412	2.36
Non-operating income and expenses	37,855	19,353	18,502	95.60
Net profit before tax	748,389	713,475	34,914	4.89
Net profit for the current period	604,712	576,991	27,721	4.80
Other comprehensive income for the period (net income after taxes)	(5,505)	54,844	(60,349)	(110.04)
Total consolidated income for the current period	599,207	631,835	(32,628)	(5.16)
Changes of more than 20%, or more than TWD 10 million are described below: 1. Increase in “non-operating income and expenses”: This was mainly due to the increase in interest income. 2. Decrease in "other comprehensive income for the period": This was mainly due to the recognition of losses from conversion differences in the financial statements of foreign operations and the re-measurement 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:

Our company is rooted in core technologies for storage and focuses on vertical industry applications, grasps consumer market trends, and develops an integrated ecosystem for services around information storage, reception, analysis, control, and sharing. We lead in the continuous development of solutions for the cloud and the Internet of Things. With the help of our solid production and marketing mechanisms and a comprehensive distribution system that serves regional markets with a full range of and diversified products and services, the Company expects to achieve its sales target for 2024.

III. Cash flow

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

Unit: TWD 1,000

Item \ Year	2023	2022	Difference	
			Amount	%
Operating activity	381,842	1,797,221	(1,415,379)	(78.75)
Investment activity	(228,771)	(917,456)	688,685	(75.06)
Financing activity	(507,342)	(144,074)	(363,268)	252.14

Changes of more than 20%, or more than TWD 10 million are described below:

1. The decrease in net cash inflow from operating activities was mainly due to the increase in the procurement scale as a result of adjustments to inventory level.
2. The decrease in net cash outflow 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 activities was mainly due to the fact that there was no cash capital increase in 2023.

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

(III) Cash flow analysis for the coming year:

Unit: TWD 1,000

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
1,061,474	427,012	(472,585)	1,015,901	-	-

IV. The effect upon financial operations of any major capital expenditures during the most recent fiscal 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: Our company will leverage its accumulated advantages of deep R&D in core technologies to develop potential applications in information reception, analysis, control, and sharing, and integrate these high-tech information services into an ecosystem to seize early opportunities in cloud business and the Internet of Things.

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 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 2023 would decrease or increase by NT$614 thousand.

2. Changes in exchange rates

The foreign exchange positions of our company are mainly in US Dollar. 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: TWD 1,000; %

Item / **Year**	**2023**
Consolidated net operating income (A)	7,631,446
Consolidated net operating profit (B)	710,534
Consolidated net gains (losses) from foreign exchange (C)	4,627
(C)/(A)	0.06%
(C)/(B)	0.65%

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. Our company has not lent out, endorsed, or guaranteed any third-party funding.
3. Transaction of derivatives: 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 2024 includes the following:

(1) Technology for high speed transmission

This year, we will continue to invest in the development of industrial SSDs for PCIe Gen4 high-speed transmission interfaces. We expect PCIe to become a mainstream standard transmission interface and 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 the subsequent and also the consumer SSD transmission interfaces, and more R&D resources will be invested in the development of SSD hardware, software and firmware architecture technology. We expect to invest TWD 55,000 thousand in R&D for this area in 2024.

(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 innovative SSD application technologies and products geared to customer and market needs in different fields. We expect to invest TWD 40,000 thousand in R&D for this area in 2024.

(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 are further developed, the new generation of DDR5 has been officially introduced. We will invest resources in the research, testing and development of the random dynamic memory devices of DDR5. We expect to invest TWD 25,000 thousand in R&D for this area in 2024.

(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$10,000 thousand in R&D for this area in 2024.

2. Estimated investments in R&D

Our R&D expenses in 2023 were NT$188,773 thousand. We expect to invest NT$176,544 thousand in research and development in 2024. Competition in the market for consumer and embedded storage and 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. We intend to annually increase our R&D expenditures as a proportion of total revenue as one of our key expenditures.

Looking into the future, the Company, while continuing to invest in the research and development of consumer products, will develop a stronger focus on the rapidly increasing demand from the industrial control market. We have served the industrial control memory and storage market for many years and have a deep understanding of customer needs there. Thus, we will assertively develop our R&D capabilities in embedded solid state disk storage modules and industrial IoT architecture technologies, gradually increase R&D in core technologies, hire more R&D engineers specialized in firmware, software, hardware, and mechanisms, and annually increase our investments in R&D personnel, tools, and testing hardware and software. This will enable us to develop and provide the industrial control market with diverse applications and customized services that are competitive, differentiated, and optimized.

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 firmware, hardware, mechanisms, and systems.
   (4) Capabilities in storage testing and verification as well as system technical support.

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

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 response measures

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 of concentrated procurement of or sales of goods, 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.

Eight. Special items

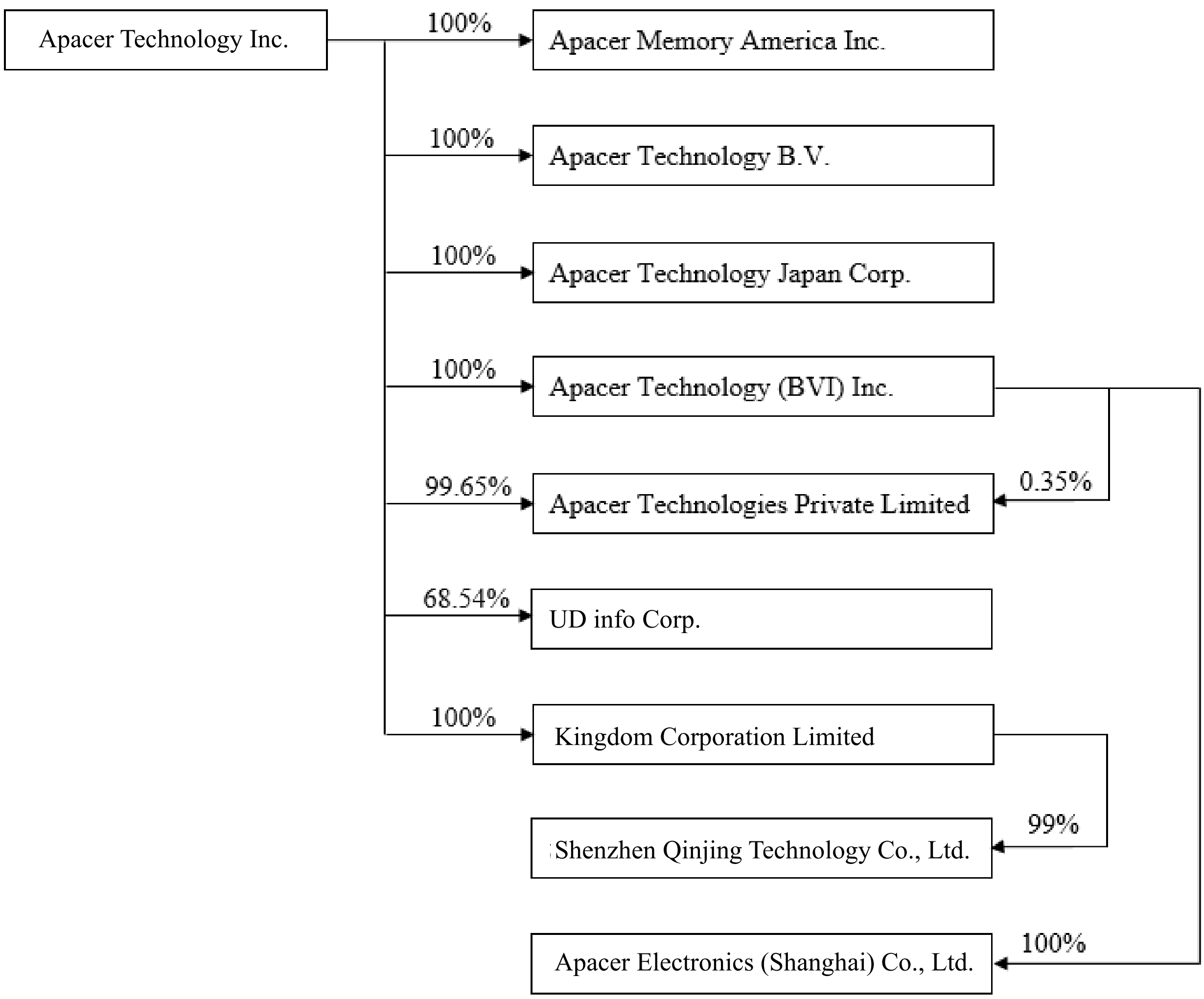
I. Information on affiliated companies

(I) Consolidated business report of affiliated companies

1. Overview of affiliated enterprises

(1)Organization chart of affiliated companies

December 31, 2023



(2)Basic information of each company

December 31, 2023

Company name	Date of establishment	Address	Amount of paid-up capital	Main business items
Apacer Memory America Inc.	1997.10.14	46732 Lakeview Blvd., Fremont, CA 94538	USD 20,000 (USD:TWD=1:30.705)	Sales of memory modules and storage memory devices
Apacer Technology (BVI) Inc.	1997.02.17	3rd Floor, J & C Building, Wickhams Cay 1, Road Town, Tortola, British Virgin Islands	USD 550,000 (USD:TWD=1:30.705)	Professional investment and foreign stock holding
Apacer Technology Japan Corp.	2000.07.21	Roppoto Fa Center, 1-9-1, Nagase, Mihama-Ku, Chiba-Shi,	JPY 10,000,000 (JPY:TWD=1:0.217)	Sales of memory modules and

Company name	Date of establishment	Address	Amount of paid-up capital	Main business items
		Chiba, Japan		storage memory devices
Apacer Technologies Private Limited	2007.02.06	1874, South End C Cross, 9th Block Jayanagar, Bangalore-560069, India	INR 1,387,022 (INR:TWD=1:0.369)	Assisting sales of memory modules and storage memory devices
Kingdom Corporation Limited	2001.01.02	Room 901, Yip Fung Building, No. 2-12, D'Aguilar Street, Cnetral, Hong Kong.	HKD 5,000,000 (HKD:TWD=1:3.930)	Sales of memory modules and storage memory devices
Apacer Technology B.V.	1998.02.17	Science Park Eindhoven 5051 5692 EB Son, The Netherlands	USD 79,513 (USD:TWD=1: 30.705)	Sales of memory modules and storage memory devices
Apacer Electronics (Shanghai) Co., Ltd.	2001.10.16	Room 605,building 3, No.188 Aona Road, Shanghai Pilot Free Trade Zone, China	USD 500,000 (USD:TWD=1: 30.705)	Sales of memory modules and storage memory devices
Shenzhen Qinjing Technology Co., Ltd.	2016.06.03	Room 2502-08, Block A, World Trade Plaza, Fuhong Road, Futian Avenue, Futian District, Shenzhen, China	RMB 5,000,000 (RMB:TWD=1: 4.328)	Sales of gaming products, gaming peripherals and consumer electronics
UD info Corp.	2014.04.08	3F.-4, No. 8, Ln. 609, Sec. 5, Chongxin Rd., Sanchong Dist., New Taipei City, Taiwan	NTD 71,961,800	Manufacturing and sales of memory modules and storage memory devices

(3) Information on the same shareholders involved with or controlling affiliated companies: None.

(4) Operating activities of the affiliated companies

The main business activities of the Company and the reinvested companies are the manufacturing, marketing and sales of memory modules and storage memory devices.

(5) Information on directors, supervisors, and president of the affiliated companies

December 31, 2023

Company name	Title	Name or representative	No. of shares held	
			Number of shares	Shareholding ratio
Apacer Technology (BVI) Inc.	Director	Apacer Technology Inc. Representative: Austin Chen	2,635,775 shares	100%
Apacer Memory America Inc.	Director	Apacer Technology Inc. Representative: Huang Jian-Zhong	20,000 shares	100%
Apacer Technology B.V.	Director	Apacer Technology Inc. Representatives: Chang Chia-Kun and Zheng Cui-Wen	79,513 shares	100%
Apacer Technology Japan Corp.	Director	Apacer Technology Inc. Representatives: Chang Chia-Kun, Luo Rong-Fa, Lin Xia-Yun	200 shares	100%
Kingdom Corporation Limited	Director	Apacer Technology Inc. Representatives: Lai Zi-wen, Luo Xue-ru, Quan Sen-yu	5,000,000 shares	100%
Apacer Electronics (Shanghai) Co., Ltd.	Director	Apacer Technology Inc. Representatives: Chang Chia-Kun, Lai Zi-wen, Quan Sen-Yu	Amount of contribution USD 500,000	100%

Company name	Title	Name or representative	No. of shares held	
			Number of shares	Shareholding ratio
Apacer Technologies Private Limited	Director	Apacer Technology Inc. Representatives: Lai Zi-Wen, Chen Zhu-Ming, Naveen	28,799 shares	100%
Shenzhen Qinjing Technology Co., Ltd.	Director	Apacer Technology Inc. Representatives: Lai Zi-wen, Quan Sen-yu, Zheng Cun-ben	Amount of contribution RMB 4,985,714	99%
UD info Corp.	Director and supervisor	Apacer Technology Inc. Directors: Chen Ming-Ta, Chang Chia-Kun, Huang Mei-Hui Supervisor: Lai Zi-Wen	4,931,960 shares	68.54%

2. Business status of the affiliated enterprises

Unit: TWD 1,000

Company name	Capital amount	Total assets	Total liabilities	Net worth	Operating revenue	Operating income	Current Net Profit/Loss (after tax)	Earnings per share (TWD)
Apacer Memory America Inc.	610	349,097	29,406	319,691	392,515	27,078	23,993	1,199.64
Apacer Technology (BVI) Inc.	18,542	51,325	-	51,325	-	(81)	7,028	2.63
Apacer Technology Japan Corp.	2,918	28,940	8,727	20,213	53,207	1,053	752	3,761.69
Apacer Technologies Private Limited	915	1,964	428	1,536	2,135	145	113	3.92
Kingdom Corporation Limited	20,917	37,173	24,144	13,029	156,376	2,863	1,088	0.20
Apacer Technology B.V.	130,469	125,234	47,678	77,556	581,989	10,807	10,684	134.37
Apacer Electronics (Shanghai) Co., Ltd.	15,352	136,139	88,066	48,073	495,453	6,802	7,015	-
Shenzhen Qinjing Technology Co., Ltd.	22,967	11,693	548	11,145	2,011	(1,606)	(1,442)	-
UD info Corp.	71,962	571,875	152,261	419,614	782,918	212,366	176,618	24.54

(II) Consolidated financial statements of the affiliated enterprises: Please refer to pages 178- 311.

(III) Affiliates reports: Not applicable.

II. Private placement of securities in the most recent FY as of the date on which the annual report was printed:

<table>
<tr><td>Item</td><td colspan="5">Private placement of securities in 2024
Issuance date (share distribution date): The shares have not yet been issued as of the publication date of the annual report
Number of shares: 6,041,000 shares</td></tr>
<tr><td>Type of securities privately placed</td><td colspan="5">Common stock</td></tr>
<tr><td>Date of adoption and amount approved by the shareholders’ meeting</td><td colspan="5">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.</td></tr>
<tr><td>The basis for determination of the price and its reasonableness</td><td colspan="5">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:
(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 TWD 60.50, TWD 59.77 and TWD 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 TWD 59.77.
(B) The simple arithmetic mean of the closing price of the ordinary shares for the 30 business days prior to the pricing date was TWD 57.64, , after deducting the ex-rights and ex-dividend of the free allotment of shares and adding back anti-exclusion and capital reduction.
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 TWD 48.00 per share or 80.31% of the reference price.</td></tr>
<tr><td>The method for selection of specific persons</td><td colspan="5">Subject to Article 43- 6 of the Securities and Exchange Act</td></tr>
<tr><td>Reasons for the necessity of the private placement</td><td colspan="5">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.</td></tr>
<tr><td>Full payment date</td><td colspan="5">March 1, 2024</td></tr>
<tr><td rowspan="2">Information on placees</td><td>Private placement target</td><td>Qualification</td><td>Subscription quantity (NTD)</td><td>Relationship with the Company</td><td>Involvement in the Company’s operations</td></tr>
<tr><td>Advantech Corporate Investment Ltd.</td><td>Article 43-6, Paragraph 1, Subparagraph 2 of the Securities and Exchange Act</td><td>289,968,000</td><td>None</td><td>None</td></tr>
<tr><td>Actual subscription (or conversion) price</td><td colspan="5">NT$48 per share</td></tr>
<tr><td>Discrepancy between the actual subscription (or conversion) price and the reference price</td><td colspan="5">The subscription price of this private placement was NT$ 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.</td></tr>
<tr><td>The effect of the private</td><td colspan="5">The Securities and Exchange Act has a restriction of three years on transfers of privately</td></tr>
</table>

placement on the shareholders' equity	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. Shares in the Company held or disposed of by subsidiaries during the most recent FY as of the date on which the annual report was printed:

None.

IV. Other necessary supplementary items:

None.

V. Matters that have a significant impact on shareholders' equity or the prices of securities as set forth in Subparagraph 2, Paragraph 3, Article 36 of the Securities and Exchange Act during the most recent FY as of the date on which the annual report was printed:

None.

Apacer Technology Inc.

Chairman: Austin Chen

Date of publication: April 2, 2024

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