Apacer

Stock Code: 8271

Apacer Technology Inc.

2022 Annual Report

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1. Spokesperson
   Name: Lai Zi-Wen
   Title: CFO
   Tel.: (02) 2267- 8000
   E-mail: public@apacer.com
   Deputy spokesperson: Chang Chia-Kun
   Title: President
   Tel.: (02) 2267- 8000
   E-mail: public@apacer.com

2. Addresses and phone no. of headquarters and factory
   Headquarters
   Address: 1F, No. 32, Zhongcheng Rd., Tucheng Dist., New Taipei City 236
   Tel.: (02)2267- 8000
   Factory
   Address: 2, 3F, No. 32, Zhongcheng Rd., Tucheng Dist., New Taipei City 236
   Tel.: (02)2267- 8000

3. Stock transfer agency
   Name: KGI Securities Co. Ltd., Stock Administration
   Address: 5F, No. 2, Sec. 1, Chongqing S. Rd., Zhongzheng Dist., Taipei City
   Website: https://www.kgi.com.tw
   Tel.: (02) 2389- 2999

4. CPA(s) certifying the financial reports of the most recent FY
   Name: Philip Tang, Shih Wei-Ming
   Accounting firm(s): KPMG Taiwan
   Address: 68F, No. 7, Sec. 5, Xinyi Rd., Taipei City
   Website: www.kpmg.com.tw
   Tel.: (02) 8101- 6666

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

I. Letter to Shareholders

Dear Shareholders:

During the past year, the Russo-Ukrainian War has disrupted food exports, led to price fluctuation and caused tight energy supplies, bringing new challenges to the international order. Meanwhile, the economic loss due to disasters and inflation, stemming from climate change, has impacted the consumer demands and resulted in the economic downturn. There has been a high level of uncertainty in the overall industry since the end of the second quarter; business operations have faced greater difficulties owing to various events.

With the resilient operational structure developed through the experience in the rapidly changing industry, Apacer has timely adjusted the strategies in response to the aforementioned emergencies. In addition to the existing three main kinds of business momentum: **focusing on key fields, deploying future technology, and promoting digital transformation of the business**, which have produced satisfactory outcomes, we came up with the fourth momentum—**forming alliances with the strategic partners**—in 2022, entering into an alliance with UD info Corp., and inviting Acer to establish partnership with us through private placement. Thanks to the four kinds of momentum, the Company's EPS of the year hit a historical high again.

The consolidated operating revenue in FY 2022 was TWD 8.8 billion; the consolidated gross operating profit was TWD 1.69 billion; the consolidated net profit after tax was TWD 580 million, and the earnings per share after tax was TWD 5.23. We briefly present the operating performance in FY 2022 and the operational plan for FY 2023 as follows:

1. Consolidated operating performance in FY 2022:

Unit: TWD 1,000

Item	2022	2021	Difference
Operating revenue	8,797,035	8,682,393	114,642
Gross operating profit	1,688,414	1,452,884	235,530
Net operating profit	694,122	573,060	121,062
Net non-operating income (expense)	19,353	4,213	15,140
Net profit after tax	576,991	485,781	91,210
Net profit attributable to shareholders of the parent company	559,126	485,788	73,338
Non-controlling interests	17,865	(7)	17,872
Earnings (Loss) per share after tax (in TWD)	5.23	4.81	0.42

2. Operating performance and research results in FY 2022:

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

(1) Apacer won the EE Awards Asia for the first time with a single technology.

(2) The Company has been invited to the Taiwan Global Brands evaluation for five consecutive years, and received the "Emerging Brands" award.

(3) We won the "Golden Award" under the category of Corporate Sustainability Report of TCSA.

(4) Apacer got the first place of the Elite in Manufacturing Award under the 2022 Digital Transformation "Dingge Awards".

(5) The Company has been continuously included in the list of top-10 global module manufacturers with our operating revenue.

To put ESG into action and fulfill the brand value of "Becoming Better Partners", Apacer has already appointed a chief corporate governance officer within the period specified by the regulations, and launched the greenhouse gas inventory project; the certification is expected to be obtained in 2024. With a view to taking care of the employees and enhancing their sense of belonging in the Company, we took out pandemic insurance for all the employees before the COVID-19 outbreak, allowing them to go through the tough time without worries. Also, we organized activities such as second-hand toy collection, second-hand item exchange, Apacer Thank You Day, smallholder coffee tree adoption, product donation to social welfare organizations, etc. to bring influence to more aspects.

As of the end of 2022, Apacer has received or filed a total of 235 patents and applications in Taiwan and other countries. For the Company's core business—DRAM, the DDR5 products of the latest specification for both the industrial control and consumers have been put into mass production, while the SSD products of PCIe Gen4x4 specification have been available. We have not only accordingly met the gaming and consumer demands, but also provided corresponding products for the vertical market applications. In addition, we have an industrial control product series that passed the US FIPS (Federal Information Processing Standard) 140-2, thereby becoming one of the few certified companies in the industry. As for the industrial IoT trend, we have launched the independently developed AI+AOI optical inspection software and customized database management system for the smart automated inspection requirements. The products have been applied by the manufacturers in the panel industry and the biotech and pharmaceutical industry so far; our next target is to expand the application scope to the food and beverage industry.

3. Operational plan for FY 2023:

(1) Operational strategy

Apacer will stick to the brand spirit of "Access the Best" and be devoted to the actions for "Becoming Better Partners" and ESG, creating the sustainable competitiveness of our brand, and achieving the vision of becoming the top manufacturer in the integration of IT-enabled information services with digital storage as the core technology.

(2) Development strategies

Based on the four kinds of business momentum as the strategic indicators, Apacer will make continuous efforts for the digital transformation and the deployment of future technology, and work with the strategic partners to focus on the deployment and market development in the field of high-value industrial applications. Also, we will seek partners that have mutual benefits with Apacer to create alliances for an extended value chain.

(3) Core policies on production and sale

Apacer has developed a strategy adjustment mechanism for operating risks, resilient supply chain management, diverse and integrated operating system, and other outstanding operational and management abilities. To enhance the operating performance, we will keep on developing new products to increase the market share of our brand. The system data will also be collected for analysis in the aspects of manufacturing, procurement and inventory, and marketing to bolster the quality of decision-making and create synergy.

In 2023, the economic situation of the market is generally expected to recover in the second half of the year. In the face of the tough future challenges, Apacer will continue to promote the four kinds of business momentum, devoting ourselves to the deployment in the fields of IoT, cloud computing, reinforcement of national defense, information and communication, gaming, and smart automated inspection, while fostering the collaboration with the strategic partners for more channels, greater brand exposure and better expansion of overseas markets. At the same time, we will carry on the planning of ESG actions based on the core value of "Becoming Better Partners", and look forward to sharing the sustainable operation results with all the stakeholders.

Chairman 

Managerial officer 

Accounting Manager 

II. Company Profile

1. Founding date

   April 16, 1997

2. 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.

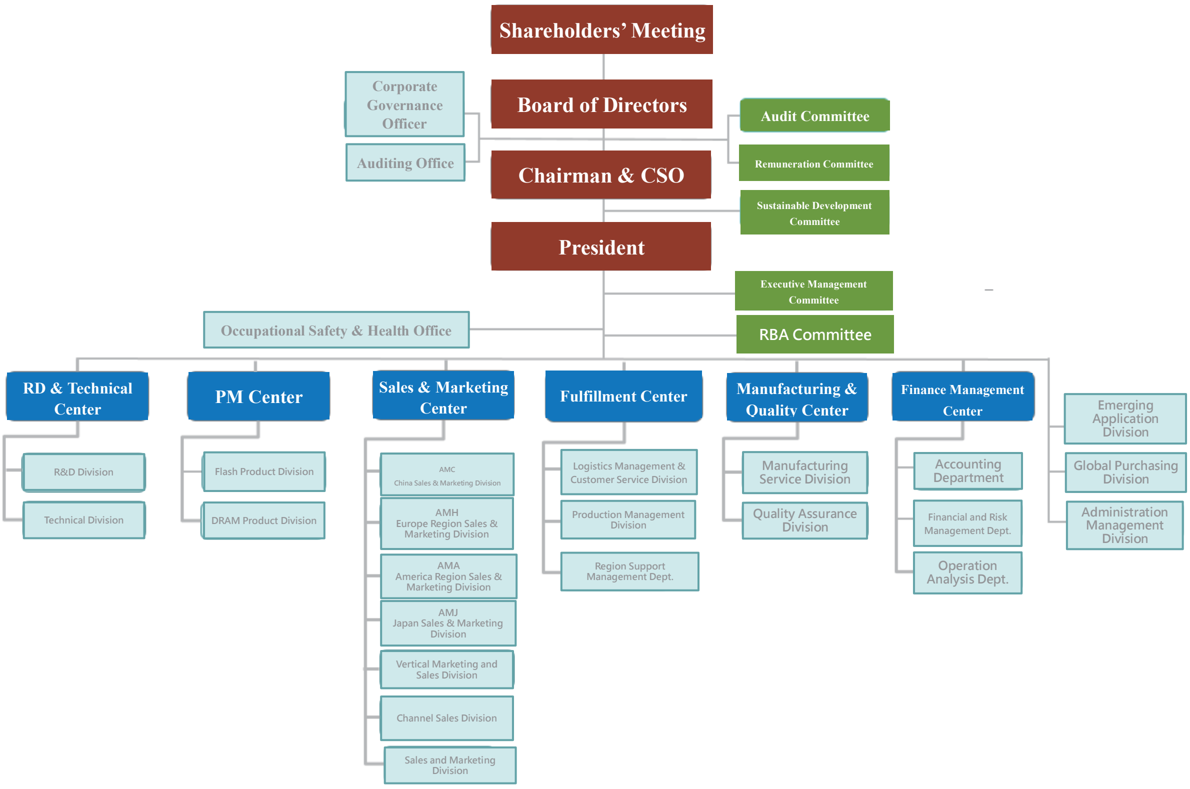
	August	We participated in the Australasian Gaming Expo in Sydney for the third time, and introduced the latest 3D NAND SLC-liteX technology. The XR-DIMM passed the RTCA DO-160G test for airborne equipment, becoming the first of its kind to be dual-certified globally.
	October	We became the first manufacturer 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 has 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 aggressively 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 achieves 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 takes the lead in the industry to offer the DDR5 industrial memory module under the JEDEC 1.0 mass production version.
	May	Apacer released AS2280Q4U M.2 Gen4x4 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	The Company, along with ADLINK, integrated the rugged edge computing solutions and accelerated the development of AI Applications.

III. Corporate Governance

1. Organizational system

(1) Organizational structure



(2) 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.
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.

Division	Tasks
	(4) Specialized technical services and certification of product technologies.
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.
Sales & Marketing 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) Understanding new application areas and collection of customer demands in all channels and application areas. (4) Handling major customer complaints and coordination with the R&D unit in responding to customer product analysis reports. (5) Coordination with product units over the positioning/packaging of product solutions and promotion, planning and implementation of informative events.
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 planning of market business in line 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.
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 data security/protection. (3) Assistance in consultation regarding the information technologies of the Company. (4) Matters related to legal affairs, patents and trademarks of the Company. (5) Matters related to the management of contracts and seals of the Company. (6) Planning and formulation of the Company's remuneration policies, HR strategies, and management systems for general and factory affairs. (7) Establishment of welfare resource systems. (8) Establishment and implementation of management regulations.

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

(1) Directors and supervisors

March 31, 2023

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 70-74 years old	3 years	2001.04.30	1,525,633	1.50%	1,525,633	1.24%	450,268	0.37%	0	0.00%	Apacer Technology Inc., Chairman and CSO 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	4.65%	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 JoiiUp Technology Inc., 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%	312,642	0. 25%	145,558	0.12%	0	0.00%	Apacer Technology Inc., President Apacer Memory America Inc., President Baruch College CUNY of M.B.A. NYU Polytechnic School of M.E.E.	Apacer Technology 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	2015.06.15	0	0.00%	0	0.00%	0	0.00%	0	0.00%	Wistron NeWeb Corporation, Chairman and CEO Wistron Corp., Senior Vice President Acer Inc., Portable Computer Business Group, General Manager, Senior Vice General Manager Entrepreneur Class, National Chengchi University B.S., Department of Electrical Engineering, Tatung University	AOPEN Inc., Representative of Legal Person as Director Raydium Semiconductor Corporation, Independent Director aEnrich Technology Corp., Director Apacer Technology Inc., 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
Director	Republic of China	George Huang	2021.07.14	Male 70-74 years old	3 years	2018.05.30	1,207,041	1.19%	1,207,041	0.98%	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	2018.05.30	10,050,000	9.87%	12,554,580	10.23%	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	3 years	2018.05.30	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	0.06%	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	None	None	None
Independent Director	Republic of China	Philip Peng	2021.07.14	Male 65-69 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	None	None	None
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 M.B.A., University of Connecticut	Wiwynn Corporation, Independent Director Apacer Technology Inc., Independent Director Macroblock Inc., Independent Director AU Optronics Corp., Independent Director	None	None	None

(2) Major shareholders of the corporate shareholders:

March 26, 2022

Name of corporate shareholders	Major shareholders of the corporate shareholders
Phison Electronics Corp.	Investment account of KIOXIA Corporation in escrow at First Commercial Bank (10.06%) Fubon Life Insurance Co., Ltd. (2.9%) Pan Jian-Cheng (2.31%) Yang Jun-Yong (2.31%) Taiwan Life Insurance Co., Ltd. (1.83%) Ouyang Zhi-Guang (1.76%) Yuanta Taiwan High-yield Leading Company Fund Account (1.42%) Chenghe Investment Co., Ltd. (1.21%) Investment account of Norges Bank in escrow at Citibank (1.20%) Wu Han-Wei (1.17%)

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

March 26, 2022

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%

(4) Information on supervisors and directors

A. Professional qualification of directors and supervisors, 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., 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. ● 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 enphants Co. Ltd., Director; Motech Industries Inc., Director.	-	1

Qualifications / Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
	● 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. ● Experience: SmartStar Technology Inc., Chairman; Acer Inc., Senior Vice President/CFO; Apacer Technology Inc., Independent Director; AU Optronics Corp., Independent Director; Wistron Corp., 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	1

Qualifications / Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
	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.	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: M.B.A., University of Connecticut ● 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

B. Diversification and independence of the Board of Directors

(A) Diversification of the Board of Directors:

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

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

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

The structure of the Company's Board of Directors shall be determined by choosing an appropriate number of 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.

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

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

The 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	Finance	✓	✓	✓	✓	✓

(B) Independence of the Board of Directors:

a. Number and qualifications of the independent directors

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

Independent Director Qualification 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
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

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

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

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

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

March 31, 2023

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
Chairman and CSO	Republic of China	Austin Chen	Male	2012.06.13	1,525,633	1.24%	450,268	0.37%	0	0.00%	Apacer Technology Inc., Chairman and CSO 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
President	Republic of China	Chang Chia-Kun	Male	2014.04.01	312,642	0.25%	145,558	0.12%	0	0.00%	Apacer Technology Inc., President Apacer Memory America Inc., President Baruch College CUNY of M.B.A. NYU Polytechnic School of M.E.E.	Apacer Technology 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
Senior Vice President	Republic of China	Chen Ming-Ta	Male	2022.08.01	1,990,040	1.62%	400,000	0.33%	0	0.00%	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	30,885	0.03%	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

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
Vice President	Republic of China	Huang Mei-Hui	Female	2018.08.01	78,491	0.06%	0	0.00%	0	0.00%	Apacer Technology Inc., Vice President of the Sales & Marketing Center Apacer Technology Inc., Senior Head of the Sales & Marketing Center Apacer Technology Inc., Head of the Vertical Market Application BU Apacer Technology Inc., Head of the Asia-Pacific and Taiwan Sales & Marketing Division B.B.A., Department of Business Administration, Tunghai University	UD info Corp., Representative of Legal Person as Director	None	None	None
Vice President	Republic of China	Luo Xue-Ru	Female	2018.08.01	81,552	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	0.1%	15,340	0.01%	0	0.00%	Apacer Technology Inc., CTO of the RD & Technical Center Apacer Technology Inc., Senior Head of the RD & Technical Center Apacer Technology Inc., Senior Manager of the R&D Division Apacer Technology Inc., Manager of the Hardware Development Department M.S., Department of Mechanical Engineering, National Taiwan University of Science and Technology	—	None	None	None

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
CFO	Republic of China	Lai Zi-Wen	Female	2013.07.14	54,048	0.04%	0	0.00%	0	0.00%	Apacer Technology Inc., 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	112,701	0.09%	0	0.00%	0	0.00%	Apacer Technology Inc., Senior Head of the PM Center Apacer Technology Inc., Senior Manager of the Global Purchasing Division Funtwist Technology Inc., Purchasing Assistant Manager SANDISK TAIWAN LIMITED, Purchasing Assistant Manager FIU of Management Bachelor	—	None	None	None
Senior Head	Republic of China	Yu Yao-Tse	Male	2022.01.01	18,547	0.02%	0	0.00%	0	0.00%	Apacer Technology Inc., Senior Head of the Manufacturing & Quality Center Apacer Technology Inc., Head of the Manufacturing & Quality Center Apacer Technology Inc., Senior Manager of the Manufacturing Service Division Apacer Technology Inc., Senior Manager of the Quality & Customer Service Division Apacer Technology Inc., Manager of the After-Sales Service Department Micro-Star International Co., Ltd., Assistant Manager of the After-Sales Service Department B.B.A., Department of Business Administration, Royal Roads University	—	None	None	None

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held by spouse or minor children		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
Accounting Assistant Manager	Republic of China	Huang Yi-Cheng	Male	2022.02.23	11,582	0.01%	0	0.00%	0	0.00%	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	JoiiUp Technology Inc., Supervisor	None	None	None

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

A. 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	-	-	8,978,001	8,978,001	410,000	410,000	11,388,001 2.04%	11,388,001 2.04%	28,550,537	28,550,537	108,000	108,000	9,582,500	-	9,582,500	-	49,629,038 8.88%	49,629,038 8.88%	-
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	-	-	1,704,858	1,704,858	210,000	210,000	5,764,858 1.03%	5,764,858 1.03%	-	-	-	-	-	-	-	-	5,764,858 1.03%	5,764,858 1.03%	-
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 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

B. 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	
-	-	-	-	-	-	-	-	-	-	-

Salary Range Table

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	-	-

C. 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>President</td><td>Chang Chia-Kun</td><td rowspan="5">11,790,000</td><td rowspan="5">12,871,125</td><td rowspan="5">432,000</td><td rowspan="5">432,000</td><td rowspan="5">26,193,967</td><td rowspan="5">26,198,967</td><td rowspan="5">9,830,350</td><td rowspan="5">-</td><td rowspan="5">10,894,000</td><td rowspan="5">-</td><td rowspan="5">48,246,317
8.63%</td><td rowspan="5">50,396,092
9.01%</td><td rowspan="5">-</td></tr>
<tr><td>Senior Vice President</td><td>Chen Ming-Ta (Note 1)</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 Senior Vice President, Chen Ming-Ta, was inaugurated on August 1, 2022.

Salary Range Table

Salary range for the President and Vice President of Apacer	President and Vice President name	
	Apacer	All companies in financial report
Less than 1,000,000 dollars	Chen Ming-Ta (Note 1)	-
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 (Note 1)
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	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

Note 1: The Senior Vice President, Chen Ming-Ta, was inaugurated on August 1, 2022.

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

Unit: TWD

<table>
<tr><th></th><th>Title</th><th>Name</th><th>Share amount</th><th>Cash amount</th><th>Total</th><th>The total amount in net income after tax (%)</th></tr>
<tr><td rowspan="11">Managerial officer</td><td>Chairman and CSO</td><td>Austin Chen</td><td rowspan="11">0</td><td rowspan="11">20,452,000</td><td rowspan="11">20,452,000</td><td rowspan="11">3.66%</td></tr>
<tr><td>President</td><td>Chang Chia-Kun</td></tr>
<tr><td>Senior Vice President</td><td>Chen Ming-Ta (Note 1)</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>
<tr><td>CTO</td><td>Li Jun-Chang</td></tr>
<tr><td>CFO</td><td>Lai Zi-Wen</td></tr>
<tr><td>Senior Head</td><td>Yin Hua-Jun</td></tr>
<tr><td>Senior Head</td><td>Yu Yao-Tse (Note 2)</td></tr>
<tr><td>Accounting Assistant Manager</td><td>Huang Yi-Cheng (Note 3)</td></tr>
</table>

Note 1: The Senior Vice President, Chen Ming-Ta, was inaugurated on August 1, 2022.
Note 2: The Senior Head, Yu Yao-Tse, was inaugurated on January 1, 2022.
Note 3: The Accounting Assistant Manager, Huang Yi-Cheng, was inaugurated on February 23, 2022.

E. 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 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	Ratio of total remuneration in 2021 to net income after tax	Ratio of total remuneration of all the companies in the consolidated statements in 2021 to net income after tax
Directors and independent directors	3.07%	3.07%	3.17%	3.17%
President and Vice President	8.63%	9.01%	5.92%	5.92%

(A) 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.

(B) 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.

(C) 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.

3. Corporate governance

(1) Information on the operation of the Board of Directors

The Board of Directors held 7 meetings in 2022. The presence and attendance of the directors are described below:

Title	Name	Actual number of persons present (attended)	Number of meetings attended by proxy	Actual attendance rate (%)	Remarks
Chairman	Austin Chen	7	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Director	Teddy Lu	7	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Director	Chang Chia-Kun	7	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Director	Haydn Hsieh	7	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Director	George Huang	7	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Director	Phison Electronics Corp. Representative: Weng Wen-Jie	6	1	85.7%	Inaugurated on July 14, 2021 for another consecutive term.
Independent Director	Max Wu	7	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Independent Director	Philip Peng	7	0	100%	Inaugurated on July 14, 2021 for another consecutive term.
Independent Director	Cathy Han	7	0	100%	Inaugurated on July 14, 2021.

Other matters to be specified:

1. 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:
   (1) 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.
   (2) 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.
2. 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
2022.02.23	1st meeting in 2022	Proposal for distribution of the remuneration for employees and directors in FY 2021 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.
2022.06.02	3rd meeting in 2022	Proposal for share exchange based on acquisition of shares of UD info Corp. by issuing new shares for capital increase as the consideration was adopted.	Since the director, Phison Electronics Corp., was a stakeholder in the proposal, the representative of the juristic person, Mr. Weng Wen-Jie, recused himself from the voting. The proposal was approved by a resolution of the rest of the directors after consultation with the independent directors.
2022.07.28	4th meeting in 2022	Proposal for adjustment of the salary for managers 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.

2022.12.14	7th meeting in 2022	Proposal for distribution of the performance bonus for managers 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.
2022.12.14	7th meeting in 2022	Proposal for distribution of the employee remuneration for managers 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.
2022.12.14	7th meeting in 2022	Proposal for distribution of the Employee Stock Ownership Trust for managers in FY 2023 was adopted.	The proposal was approved by a resolution of the directors, excluding Austin Chen and Chang Chia-Kun, who did not participate in the discussion and voting due to personal interests, present at the meeting of the Board of Directors after consultation with the independent directors.

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

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, 2022	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.

4. 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 2022, 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 periodic 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 2022 were 75.

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

The Audit Committee held 6 meetings in 2022. 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	6	0	100%	Inaugurated on July 14, 2021 for another consecutive term
Member	Philip Peng	6	0	100%	Inaugurated on July 14, 2021 for another consecutive term
Member	Cathy Han	6	0	100%	Inaugurated on July 14, 2021

The annual work focuses of the Audit Committee:

1. 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.
2. 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:

1. 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:
   (1) 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**
2022.02.23	1st meeting in 2022	The business report and self-prepared financial statements of FY 2021 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2022.02.23	1st meeting in 2022	Proposal to issue the "Declaration on the Internal Control System" of FY 2021 was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2022.02.23	1st meeting in 2022	Proposal for transfer of the Company's accounting officer was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2022.02.23	1st meeting in 2022	Lai Ming-Yang, the CPA of WeTec International CPAs, was commissioned to serve as an independent expert of the Company, and a resolution concerning his remuneration was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2022.02.23	1st meeting in 2022	Proposal for amendment to the "Procedures for Acquisition or Disposal of Assets" was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2022.04.19	2nd meeting in 2022	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 resolution concerning their remuneration were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2022.06.02	3rd meeting in 2022	Proposal for share exchange based on acquisition of shares of UD info Corp. by issuing new shares for capital increase as the consideration was adopted.	Approved by all of the Audit Committee members	Since the director, Phison Electronics Corp., was the stakeholder, the representative of the juristic person, Mr. Weng Wen-Jie, recused himself from the voting. The proposal was approved by the rest of the directors.
2022.07.28	4th meeting in 2022	The quarterly consolidated financial statements for the second quarter of FY 2022 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2022.10.30	5th meeting in 2022	The internal audit plan of FY 2023 was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present

2022.11.03	6th meeting in 2022	Proposal for issuance of new shares for cash capital increase by way of private placement was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present

(2) 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.

2. 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.

3. 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):

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

Date	Audit Committee meeting	Communications with the chief internal auditor	Results
2022.02.23	1st meeting in 2022	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.
2022.04.19	2nd meeting in 2022	Review of the internal audit report	Acknowledged with no other suggestions.
2022.07.28	4th meeting in 2022	Review of the internal audit report	Acknowledged with no other suggestions.
2022.10.30	5th meeting in 2022	Review of the internal audit report	Acknowledged with no other suggestions.

(2) Communication of the independent directors with the CPAs

Date	Audit Committee meeting	Communications with the CPAs	Results
2022.02.23	1st meeting in 2022	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. Competent authorities' concerns	Acknowledged with no other suggestions.
2022.10.30	5th meeting in 2022	1. Independence 2. Responsibility of the reviewer for the review of interim financial report 3. Review scope and method 4. Review findings 5. Annual audit plan 6. Competent authorities' concerns 7. Important updates of laws and regulations	Acknowledged with no other suggestions.

(3) 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	
1. 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
2. Shareholding structure and shareholders' equity				No difference
(1) Does your company have an internal procedure and act accordingly for handling shareholders' suggestions, doubts, disputes, and lawsuits?	V		(1) 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.	
(2) Does your company have lists of the major shareholders who actually control the company and the persons who have ultimate control of the major shareholders?	V		(2) 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.	

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
(3) Does your company have a firewall mechanism in place to control the risks between the company and its affiliates?	V		(3) We have established the internal “Regulations Governing the Transactions among Related Parties, Specific Companies, and Group Enterprises”, “Subsidiary Management Regulations”, “Procedures for Endorsements/Guarantees”, “Procedures for Loaning Funds to Others”, and “Procedures for Acquisition or Disposal of Assets” to establish appropriate risk control mechanism and firewall. The auditors supervise the implementation on a regular basis.	
(4) Does your company have internal regulations to prohibit insiders of the company from using undisclosed information in the market to trade securities?	V		(4) 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.	
3. Responsibilities of the Board of Directors and its formation (1) Are a policy of diversification and specific management objectives established and implemented by the Board of Directors?	V		(1) 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: A. 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. B. 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	

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			made it possible for us to effectively implement the above-mentioned strategies for management and future development. C. Since the Company puts great emphasis on the diversity of the Board of Directors, we require that the members thereof shall possess at least three different professional backgrounds and work experience in two different industries and that at least a female director shall be appointed to achieve the management objectives for diverse formation of the Board of Directors. 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. D. Implementation of diversification policy for the composition of the Board of Directors:	No difference

Core items for diversification / Name of director	Basic qualifications		Professional background	Industrial experience				
	Nationality	Gender		Accounting and financial	Business management	Venture investment	Engineering technology	Leadership and decision-making
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:	Malaysia	Male	Accounting	✓		✓	✓	✓

Weng Wen-Jie								
Max Wu	Republic of China	Male	Engineering		✓	✓	✓	✓
Philip Peng	Republic of China	Male	Management, finance	✓	✓	✓	✓	✓
Cathy Han	Republic of China	Female	Finance	✓	✓	✓	✓	✓

Item	Description: Yes	Description: No	Description: Summary	Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
(2) Does your company voluntarily establish other functional committees similar to the Remuneration Committee and Audit Committee set up pursuant to the relevant laws and regulations?		V	(2) In addition to the Remuneration Committee and the Audit Committee, we have established 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 have also formed the Sustainable Development Committee to report its implementation and results to the Chairman and President on a regular basis.	Assessment of the necessity for additional functional committees with reference to the business operation status and scale in the future.
(3) 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	V		(3) 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.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
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?			In 2022, 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 21, 2023 and the meetings of functional committees.	
(4) Does your company assess the independence and competency of the CPAs on a regular basis?	V		(4) 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 April 18, 2023 and submitted to the Board of Directors for approval. Important assessment items are listed below: A. There is no direct or material indirect financial interest or significant close business relationship between the CPAs and any member of the audit team. B. None of the CPAs and audit team members is currently, or was within the recent two years, a director, supervisor, or managerial office of the Company, or receives or received a fixed salary for performing routine work. C. None of the CPAs and audit team members has any inappropriate interest with the Company. D. The names of the CPAs are not used by others. E. 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. F. The audit team members are the spouses, direct relatives by blood, direct relatives by marriage, or collateral relative by blood within the second degree of kinship of the Company's directors, supervisors, responsible persons or managerial officers.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			G. 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 5 aspects—profession, 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 our financial statements. The latest assessment was approved by the Audit Committee on April 18, 2023 and submitted to the Board of Directors for approval.	
4. 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 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	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 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 2022 includes the following matters: 1. 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. 2. Assisting with the meeting procedure of the Board of Directors and the shareholders and compliance matters of the resolutions. 3. Assisting in the communication between the independent directors, chief internal auditor and CPAs at Audit Committee meetings. 4. Maintaining investor relations.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
of the Board of Directors and shareholders' meetings)?			5. Publishing important information related to the material resolutions of the Board of Directors and shareholders' meetings in accordance with the relevant laws. 6. 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, 2022 to ensure the fulfillment of the Ethical Corporate Management Best Practice Principles. 7. 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, 2022 to ensure the fulfillment of the Sustainable Development Best Practice Principles. 8. Other matters referred to in the Articles of Incorporation or contracts.	
5. 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
6. Does your company commission a professional registrar to deal with matters related to the shareholders' meeting?	V		We have commissioned KGI Securities Co. Ltd., Stock Administration, to handle these affairs.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
7. Disclosure of information				No difference
(1) Does your company have a website to disclose the financial and corporate governance information of the company?	V		(1) Apacer website: (https://www.apacer.com/). We disclose information about our business, financial status, and implementation of corporate governance on our website.	
(2) Does your company adopt other information disclosing methods (such as building an English website, designating a person for collection and disclosure of information, implementing a spokesperson system, and publishing the process of investor conferences on the website)?	V		(2) 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 President, 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.	
(3) Does your company publish and file its annual financial report within two months after the end of a fiscal year? Does your company publish and file the Q1, Q2 and	V		(3) 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 2022 financial report was published and filed on February 24, 2023, and our 2022 Q1, Q2 and Q3 financial reports and monthly operating performance were published and filed before the required time limit.	

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
Q3 financial reports and monthly operating performance before the required time limit?				
8. 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		1. 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. 2. 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. 3. 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.	No difference

Item	Description: Yes	Description: No	Description: Summary	Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
			4. Rights of stakeholders: Stakeholders can communicate with us and give us advices. 5. Continuing education of directors:	

Title	Name	Course date	Organizer	Course	Education hours	Does the course meet requirements?
Chairman	Austin Chen	2022/06/30	Taiwan Corporate Governance Association	ESG Reporting Trends and Commercial Meaning of the Information Disclosure Thereof	3	Yes
		2022/08/30	Taiwan Corporate Governance Association	Discussion on the Assessment and Implementation of Investment in Mergers and Acquisitions from the Perspective of Law	3	Yes
Director	Chang Chia-Kun	2022/04/12	Securities and Futures Institute	Technological Development and Business Models of Blockchain	3	Yes
		2022/08/19	Taiwan Corporate Governance Association	Case Studies of Competition for Business Management Rights	3	Yes
Director	Teddy Lu	2022/08/11	Taiwan Corporate Governance Association	Carbon Management Trends and Response Measures for Net-Zero	3	Yes
		2022/11/10	Taiwan Corporate Governance Association	Analysis of Digital Investigation into Major Financial Crimes	3	Yes
Representative of legal person as director	Weng Wen-Jie	2022/12/21	Securities and Futures Institute	How Should Directors and Supervisors Supervise the Corporate Risk Management and Crisis Management	3	Yes
		2022/11/10	Securities and Futures Institute	Opportunities and Challenges during the Next Decade	3	Yes
Director	George Huang	2022/12/06	Taiwan Corporate Governance Association	How to Interpret Financial Statements to Ensure Business Operations	3	Yes
		2022/12/16	Securities and Futures Institute	Introduction to and Case Studies of Insider Short-Term Trading	3	Yes
Director	Haydn Hsieh	2022/06/30	Taiwan Corporate Governance Association	ESG Reporting Trends and Commercial Meaning of the Information Disclosure Thereof	3	Yes
		2022/09/30	Taiwan Corporate Governance Association	2030/2050 Green Industrial Revolution	3	Yes

Item	Description: Yes	Description: No	Description: Summary							Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
					2022/09/30	Taiwan Corporate Governance Association	Principles of PR Response to Law-Related Corporate Events	3	Yes	
			Independent Director	Max Wu	2022/08/11	Taiwan Corporate Governance Association	Information on the Content of ESG Report	3	Yes	
					2022/08/11	Taiwan Corporate Governance Association	Carbon-Related Issues and Strategies for Companies	3	Yes	
			Independent Director	Philip Peng	2022/03/10	QIC, Georgeson and Taiwan Stock Exchange Corporation	Discussion on the Supervision of Independent Directors and BoD from the International Perspective	1	Yes	
					2022/05/12	Taiwan Stock Exchange Corporation, Alliance Advisors and Taiwan Corporate Governance Association	International Twin Summit	2	Yes	
					2022/04/20	Taiwan Corporate Governance Association	Discussion on Legal Responsibilities of Corporate Directors from the Perspective of Intellectual Property Rights Management	3	Yes	
					2022/09/30	Taiwan Corporate Governance Association	2030/2050 Green Industrial Revolution	3	Yes	
					2022/09/30	Taiwan Corporate Governance Association	Principles of PR Response to Law-Related Corporate Events	3	Yes	
					2022/10/26	Taiwan Corporate Governance Association	Group and Corporate Governance	3	Yes	
			Independent Director	Cathy Han	2022/09/30	Taiwan Corporate Governance Association	2030/2050 Green Industrial Revolution	3	Yes	
					2022/09/30	Taiwan Corporate Governance Association	Principles of PR Response to Law-Related Corporate Events	3	Yes	
					2022/08/03	Taiwan Corporate Governance Association	Trends and Challenges of Information Security Governance	3	Yes	
					2022/11/08	Taiwan Corporate Governance Association	Trends and Risk Management of Digital Technology and AI	3	Yes	
					2022/10/26	Taiwan Corporate Governance Association	Group and Corporate Governance	3	Yes	

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			6. 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	2022/06/30	Taiwan Corporate Governance Association	ESG Reporting Trends and Commercial Meaning of the Information Disclosure Thereof	3
		2022/08/30	Taiwan Corporate Governance Association	Discussion on the Assessment and Implementation of Investment in Mergers and Acquisitions from the Perspective of Law	3
President	Chang Chia-Kun	2022/04/12	Securities and Futures Institute	Technological Development and Business Models of Blockchain	3
		2022/08/19	Taiwan Corporate Governance Association	Case Studies of Competition for Business Management Rights	3
CFO	Lai Zi-Wen	2022/11/18	Taiwan Corporate Governance Association	The Business Merger and Acquisition Process: A Discussion on the Key Issues of Mergers and Acquisitions Integration	3
		2022/11/25	Taiwan Corporate Governance Association	Analysis of the Legal Restrictions and Decisions on the Shareholding of Directors and Supervisors	3
		2022/12/02	Taiwan Corporate Governance Association	Definition of and Changes to the Functions of Directors under the ESG Trends	3
		2022/12/06	Taiwan Corporate Governance Association	How to Interpret Financial Statements to Ensure Business Operations	3
		2022/12/20	Taiwan Corporate Governance Association	Nip it in the Bud - Importance of Corporate Risk Management	3
		2022/12/22	Taiwan Corporate Governance Association	Offensive and Defensive Strategies of Hostile Takeovers and the Responsibilities of Company Responsible Person	3
Accounting Officer	Huang Yi-Cheng	2022/07/11-19	Accounting Research and Development Foundation	Education Program for the Beginning Accounting Managers of Issuers, Securities Firms and Exchanges	30

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			7. 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 2022 was reported to the Board on December 14, 2022. For more information, please visit the website of the Company. (https://www.apacer.com/zh/Investor/Company/ApacerRiskcontrol) 8. 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. 9. 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 21, 2023.	
9. On the basis of the result of corporate governance evaluation released by TWSE's Corporate Governance Center in the most recent year, please describe the matters to which improvements have been made. Regarding the matters to which improvements have yet to be made, please list those which have been selected as priorities and the measures to be taken.	V		The improvements in 2022 are as follows: 1. Performance evaluation of the Board of Directors: The Company has carried out the 2022 self-evaluation of the Board of Directors. The results were reported in the first board meeting in 2023 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. 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.	No difference

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

A. Information of the members of the Remuneration Committee

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

March 31, 2023

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 supervisors and directors on pages 18-19 for the relevant details.	Please refer to the information on supervisors and directors on pages 18-19 for the relevant details.	2	Convener
Independent Director	Philip Peng			1	
Independent Director	Cathy Han			2	

B. 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:

(A) Establish and periodically review the Articles of Association of the Remuneration Committee, and submit correction suggestions.

(B) 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.

(C) Periodically evaluate the achievement of the directors and managerial officers' performance goals and determine the contents and amount of their individual remuneration.

C. Information on the operation of the Remuneration Committee

(A) Our Remuneration Committee is composed of three members.

(B) The term of the current members: July 14, 2021 - July 13, 2024

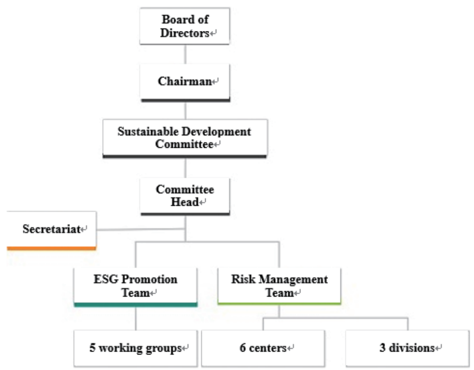
(C) The Remuneration Committee held four meetings (A) in the most recent FY, and the attendance of its members are described below:

Title	Name	Number of meetings attended (B)	Number of meetings attended by proxy	Attendance rate (%) (B/A)	Remarks
Convener	Max Wu	4	0	100%	
Member	Philip Peng	4	0	100%	
Member	Cathy Han	4	0	100%	
Other matters to be specified: 1. 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. 2. 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.					

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

Date	Meeting	Remuneration Committee Proposal	Remuneration Committee Resolution	The Company's action on the Committee's opinion
2022/02/23	1st meeting in 2022	Proposal for distribution of the remuneration for employees and directors in FY 2021	Approved by all of the Committee members present	Approved by all of the directors present
2022/07/28	2nd meeting in 2022	Proposal for adjustment of the salary for managers in FY 2022	Approved by all of the Committee members present	Approved by all of the directors present
2022/07/28	2nd meeting in 2022	Proposal for amendments to the Company's "Articles of Association of the Employee Stock Ownership Trust Management Committee" and "Regulations Governing the Management of Employee Stock Ownership Trust"	Approved by all of the Committee members present	Approved by all of the directors present
2022/07/28	2nd meeting in 2022	Proposal for transfer of the Company's managers	Approved by all of the Committee members present	Approved by all of the directors present
2022/10/30	3rd meeting in 2022	Proposal for appointment of the Company's chief corporate governance officer	Approved by all of the Committee members present	Approved by all of the directors present
2022/10/30	3rd meeting in 2022	Proposal for amendment to the Company's "Articles of Association of the Remuneration Committee"	Approved by all of the Committee members present	Approved by all of the directors present
2022/12/14	4th meeting in 2022	Proposal for distribution of the performance bonus for managers in FY 2022	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.
2022/12/14	4th meeting in 2022	Proposal for distribution of the employee remuneration for managers in FY 2022	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.
2022/12/14	4th meeting in 2022	Proposal for distribution of the Employee Stock Ownership Trust 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.
2022/12/14	4th meeting in 2022	Work plan for the Remuneration Committee in 2023	Approved by all of the Committee members present	(Omitted)

(5) 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	
1. 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		1. 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 President act respectively as the head 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 structure is as follows. https://www.apacer.com/zh/Csr/Pages/sustainability  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 President's Office 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.

<table>
<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></td><td></td><td></td><td>The board of directors follows the development direction of the competent authority's blueprint and takes care of the interests of all shareholders to achieve the company's sustainable development goals. Therefore, the board of directors draws up the blueprint for sustainable development (please refer to P6 of the 2021 Sustainability Report) and strategies, thereby requesting the sustainable development committee to The group formulates annual work goals and implementation projects, and regularly holds quarterly meetings to review work implementation progress, effectiveness, and resource investment amount.
Following the sustainable development strategy blueprint, the Sustainable Development Committee conducts questionnaires or interviews on issues of concern to all stakeholders at the end of each year, and produces 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 in an irregular manner.
Regular review meetings are held with the head 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 2022 are as follows: (Report date:2022/12/14)
<table><tr><th>Reports</th><th>Results of implementation</th></tr><tr><td>Key ESG awards</td><td>1. Corporate Governance - The 8th Corporate Governance Appraisal_Top 6%~20% of the participating companies
2. Best Taiwan Global Brands_Certification of the “Emerging Brands” award
3. Corporate Sustainability Report of TCSA_Golden Award
4. Dingge Awards - Comprehensive Digital Transformation_First place of the Elite Award
5. Taiwan Excellence Awards
6. EETimes EE Awards Asia</td></tr></table></td><td></td></tr>
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<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
<tr><td></td><td></td><td></td><td><table>
<tr><td></td><td>7. Sports Administration, Ministry of Education_iSports certification
8. Health Promotion Administration, Ministry of Health and Welfare_Healthy workplace certificate
9. HR ASIA_Best Companies to Work for in Asia</td></tr>
<tr><td>Risk management</td><td>Material risks, current control system and response strategies</td></tr>
<tr><td>Key ESG work items</td><td>1. Report on the progress of greenhouse gas verification
2. Report on the effectiveness of employee care actions
3. Report on the work items and effectiveness of local care
4. Report on the work items and effectiveness of corporate governance</td></tr>
</table></td><td></td></tr>
<tr><td>2. 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>1. We have established the Sustainable Development Committee and conducted assessment on the risks of the environmental, social and corporate governance issues related to our operations based on the materiality principle, and we have formulated relevant management policies including the internal audit system, whistleblowing system, climate change risk management and operating risk management. We have set up a corresponding organizational structure to perform regular review and reduce the likelihood of risk occurrence.
This disclosure material covers the Company's sustainable development performance on the major premises from January to December 2022. The risk assessment boundary is based on the scope of the Company, including our existing premises in Taiwan, China, Japan, India, Europe and America. Corresponding measures established according to the risk issues with significant impact on our business are as described below:</td><td>We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies.</td></tr>
</table>

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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></td><td></td><td></td><td><table>
<tr><th>Material risk assessment item</th><th>Description</th></tr>
<tr><td>Supply chain management - Slow-moving materials</td><td>1) We reduce the materials that have not been requested for a long time.
2) The purchase orders/quantity are postponed or canceled.</td></tr>
<tr><td>Information security</td><td>1) We make simultaneous improvements in the information security management aspect and the technology aspect.
2) We continuously provide our information personnel with educational training in the knowledge and skills related to information security.
3) The internal SOP mechanism for material information is adopted.</td></tr>
<tr><td>Customer credit</td><td>We enhance the unsecured credit risk management.</td></tr>
</table></td><td></td></tr>
<tr><td>3. Environmental issues
(1) Does your company establish environmental management systems suitable for your industrial characteristics?</td><td>V</td><td></td><td>(1) The Company has established an environmental management system which received the ISO 14001 certification in 2005. On 4/22/2020, the system passed the ISO 14001:2015 external verification, and the effective period of the updated version of the certification is from 4/30/2020~4/29/2023. We regularly 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 see our Corporate Sustainability Report (https://www.apacer.com/zh/Csr/Pages/apacer-csr-report).</td><td>We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies.</td></tr>
</table>

Item of Implementation	Status of implementation: Yes	No	Summary	Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
(2) 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?	V		(2) 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.	
(3) Does your company assess the current and future risks and opportunities which climate change potentially brings to the company and take measures in response to climate-related issues?	V		(3) 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. The important risks and opportunities are as described below.	

Risk/ opportunity	Description	Potential financial impact	Response strategies
Risk	Increasingly tightened restriction of environmental laws and regulations	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.	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.
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	Consider the equipment with low power consumption first with maintaining the quality as the principle when

Item of Implementation	Status of implementation			Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			(see nested table below)	

		would bring us a higher operating cost and a lower revenue.	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.

For more information about the climate change risk management, please refer to pages 42-45 of the 2021 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	
(4) 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		(4) We regularly maintain the greenhouse gas inventory, make statistics of water consumption and total waste weight (which are disclosed in the annual Corporate Sustainability Report), and implement measures for energy saving and carbon reduction, including prohibiting the use of disposable chopsticks, simplifying the process, 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 pages 46-50 of the Corporate Sustainability Report. (https://www.apacer.com/zh/Csr/Pages/apacer-csr-report)	
4. Social issues (1) Does Apacer have management policies and procedures in accordance with relevant regulations and international human rights conventions? (2) Does your company establish and implement reasonable employee benefit measures (including remuneration, leave	V V		(1) 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 employees 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. (2) 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	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	
and other benefits)? Is the operating performance or results properly reflected in the remuneration for employees?			Assistance Program" was accordingly introduced and won the 2018 Work-Life Balance Award from the Ministry of Labor. As of the end of 2022, 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 2.1% 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.	
(3) Does your company provide a safe and healthy work environment to its employees and provide them with safety and health education?	V		(3) We provide a safe and healthy work environment that has been certified by ISO 45001 (certification valid until April 17, 2023). In addition, we conduct annual health examinations, and all new and current employees must receive safety and health training.	
(4) Does your company have effective programs for the development and training of employees' career skills?	V		(4) 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 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	

Item of Implementation	Status of implementation			Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			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.	
(5) With respect to the issues such as customer health and safety, customer privacy, marketing and labeling of products and services, does your company conform to the relevant regulations and international standards and establish the relevant rights protection policies and complaint procedures for the consumers or customers?	V		(5) The Company ensures the quality of its products and services are in accordance with government regulations and industrial standards. Regarding the marketing, labeling and customer privacy for products and services, we follow the relevant regulations and international standards and strictly prohibit deceit, misguidance, fraud or any other act that damages the trust or rights of customers.	
(6) 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		(6) 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. A. 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,	

Item of Implementation	Status of implementation			Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			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. B. 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 pages 57-59 of the 2021 Corporate Sustainability Report. C. 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".	
5. 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		We adopt the GRI Standards published by the Global Reporting Initiative (GRI) for sustainability reporting. Our reports are prepared based on the GRI Standard Core Option and in accordance with the four reporting principles and six report quality principles required by the GRI Standards. The materiality, inclusivity, responsiveness and impact under the AA1000 Accountability Principles Standard (2018) are also taken as the basis for the preparation of the reports.	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	
6. 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.				
7. 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/Csr/Pages/apacer-csr-report				
8. If your company’s CSR reports have been verified by any relevant verifying agency, please describe in detail: Our 2021 Corporate Sustainability Report has been certified by the British Standards Institution (BSI). However, as of the date on which the annual report was printed, our 2022 Corporate Sustainability Report was still in the review process of the BSI. In addition, we have implemented an ISO 14001 environmental management system to reduce the consumption of resources, and also received validation under the ISO 45001 to provide a healthy and safe work environment. Regarding quality control, we have received the certifications of ISO 9001 quality management system and IECQ QC 080000 hazardous substances process management system. We have not only ensured product quality but also implemented green production processes and followed the international RoHS standards.				

(6) 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	
1. Development of ethical management policies and programs				
(1) 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		(1) 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.
(2) 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	V		(2) 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	
"Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies"? (3) 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		(3) 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.
2. Implementation of ethical management (1) 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		(1) 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.
(2) 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	V		(2) 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	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.

Item for evaluation	Description: Yes	Description: No	Description: Summary	Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
conduct prevention programs and the supervision and implementation thereof?			of ethical management in 2022 were reported at the board meeting on December 14, 2022 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 ● 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	
(3) 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		(3) 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.
(4) 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	V		(4) 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	
audit the compliance with the unethical conduct prevention programs? Or are audits conducted by commissioned CPAs?				
(5) Does your company regularly hold internal and external education and training sessions regarding ethical management?	V		(5) Our regulations governing ethical management have been included as part of the internal education and training for employees. In November 2022, 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 498. In August 2022, 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, it was attended by 49 suppliers in the year.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
3. Functioning of the whistleblowing system				
(1) 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		(1) We have the "Whistleblowing System", which clearly specifies the 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.
(2) Does your company establish standard operating procedures for investigation of matters reported by	V		(2) The "Whistleblowing System" includes relevant investigation procedures, subsequent defect improvement measures and mechanisms for confidentiality.	In compliance with the Ethical Corporate Management Best

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
whistleblowers, measures to be taken following the conclusion of investigation and relevant mechanisms for confidentiality?				Practice Principles for TWSE/GTSM Listed Companies.
(3) Does your company take any measures to protect whistleblowers from improper treatment as a result of their whistleblowing?	V		(3) 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.
4. 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?	V		The Company has disclosed the "Ethical Corporate Management Best Practice Principles" and the "Procedures for Ethical Management and Guidelines for Conduct" on the official website. Also, we turn the relevant results into quantitative data for continuous analysis and assessment of the implementation of ethical management policies, in order to enhance the effectiveness of our corporate ethical management.	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.
5. 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.				
6. 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, 2022, we have not received any report regarding violation of the relevant codes and conduct guidelines.				

(7) 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/)

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

A. 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, Specific Companies, and Group Enterprises".

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.

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

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

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

A. Declaration on the Internal Control System

Apacer Technology Inc.

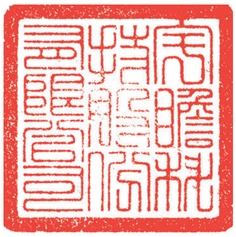
Declaration on the Internal Control System

Date: February 21, 2023

Based on the result of self-inspection of Apacer's internal control system in 2022, we hereby declare the following:

1. The Company acknowledges that the Board of Directors and managers are responsible for the establishment, implementation and maintenance of the internal control system, and has established such 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.
2. 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.
3. 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.
4. The Company has adopted the aforementioned judgment items to examine the effectiveness of the design and implementation of our internal control system.
5. Based on the result of the examination, we determined that, until December 31, 2022, 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.
6. 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.

7. This Declaration was adopted by the Board of Directors during the meeting on February 21, 2023. 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 

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

(10) 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.

(11) Important resolutions of the shareholders' meeting and board meetings during the most recent FY as of the date on which the annual report was printed:

A. Important resolutions of the shareholders' meeting

Date of meeting	Meeting resolutions	Status of implementation
2022.05.31	Proposal to ratify the business report and financial statements of FY 2021 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. The changes were registered on December 2, 2022.
	Proposal for amendment to the "Procedures for Acquisition or Disposal of Assets" was adopted.	The proposal was adopted without revision.

B. Important resolutions of the board meetings

Term of the Board of Directors	Time	Proposal
1st meeting in 2022	2022.02.23	1. Proposal for distribution of the remuneration for employees and directors in FY 2021 was adopted. 2. The business report and self-prepared financial statements of FY 2021 were adopted. 3. Proposal for distribution of the profit of FY 2021 was adopted. 4. Proposal to issue the "Declaration on the Internal Control System" of FY 2021 was adopted. 5. Proposal for transfer of the Company's accounting officer was adopted. 6. Proposal for amendment to the "Procedures for Acquisition or Disposal of Assets" was adopted. 7. Proposal for amendment to the "Corporate Governance Best Practice Principles" was adopted. 8. Proposal for amendment to the "CSR Best Practice Principles" was adopted. 9. Proposal to convene the regular shareholders' meeting in FY 2022 was adopted.
2nd meeting in 2022	2022.04.19	1. 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 resolution concerning their remuneration were adopted. 2. The quarterly consolidated financial statements for the first quarter of FY 2022 were adopted. 3. Proposal to issue common stocks through private placement for cash capital increase was adopted. 4. Proposal for update of the matters related to the 2022 shareholders' meeting on May 31, 2022 was adopted.

Term of the Board of Directors	Time	Proposal
3rd meeting in 2022	2022.06.02	1. Proposal for share exchange based on acquisition of shares of UD info Corp. by issuing new shares for capital increase as the consideration was adopted.
4th meeting in 2022	2022.07.28	1. Proposal for transfer of the Company's managers was adopted. 2. Proposal to exempt newly appointed managers from non-compete restrictions was adopted. 3. Proposal for adjustment of the salary for managers in FY 2022 was adopted. 4. Proposal for amendments to the Company's "Articles of Association of the Employee Stock Ownership Trust Management Committee" and "Regulations Governing the Management of Employee Stock Ownership Trust" was adopted. 5. The quarterly consolidated financial statements for the second quarter of FY 2022 were adopted
5th meeting in 2022	2022.10.30	1. Proposal for appointment of the Company's corporate governance officer was adopted. 2. Proposal for amendment to the Company's "Articles of Association of the Remuneration Committee" was adopted. 3. The quarterly consolidated financial statements for the third quarter of FY 2022 were adopted. 4. The internal audit plan of FY 2023 was adopted.
6th meeting in 2022	2022.11.03	1. Proposal for issuance of new shares for cash capital increase by way of private placement was adopted.
7th meeting in 2022	2022.12.14	1. The strategic development and operational plans of FY 2023 were adopted. 2. Proposal for distribution of the performance bonus for managers in FY 2022 was adopted. 3. Proposal for distribution of the employee remuneration for managers in FY 2022 was adopted. 4. Proposal for distribution of the Employee Stock Ownership Trust for managers in FY 2023 was adopted. 5. Proposal for amendment to the "Management Procedures for Handling Material Insider Information and Prevention of Insider Trading" was adopted. 6. Proposal to apply for extending contracts with financial institutions concerning the credit line and transaction limit for hedging financial products in FY 2023 was adopted.
1st meeting in 2023	2023.02.21	1. Proposal for distribution of the remuneration for employees and directors in FY 2022 was adopted. 2. The business report and self-prepared financial statements of FY 2022 were adopted. 3. Proposal for distribution of the profit of FY 2022 was adopted. 4. Proposal to issue the "Declaration on the Internal Control System" of FY 2022 was adopted. 5. Proposal to exempt the independent director, Cathy Han, from non-compete restrictions was adopted. 6. Proposal for amendment to partial provisions of the "Sustainable Development Best Practice Principles" was adopted. 7. Proposal for decision on the date and relevant matters of the 2023 shareholders' meeting was adopted.

Term of the Board of Directors	Time	Proposal
2nd meeting in 2023	2023.04.18	1. 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, competency and resolution concerning their remuneration were adopted. 2. The quarterly consolidated financial statements for the first quarter of FY 2023 were adopted. 3. Proposal to issue common stocks through private placement for cash capital increase was adopted. 4. Proposal for establishment of the "Non-assurance Services Pre-approval Policy" was adopted. 5. Proposal for amendment to the "Corporate Governance Best Practice Principles" was adopted. 6. Proposal for update of the matters related to the 2023 shareholders' meeting on May 29, 2023 was adopted.

(12) 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.

(13) 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.

4. Information on CPA's professional fees

(1) 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	FY2022	3,770	1,775	5,545	-

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

(2) 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

(3) 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.

5. 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)

(1) On the predecessor CPAs:

<table>
<tr><td>Date of change</td><td colspan="3">April 15, 2021</td></tr>
<tr><td>Reasons and description of change</td><td colspan="3">In line with the needs for adjusting the positions of the CPAs at KPMG Taiwan, and starting from Q1 of FY 2021, the original CPA team consisting of Philip Tang and Grace Chen was replaced by the team consisting of Philip Tang and Shih Wei-Ming.</td></tr>
<tr><td rowspan="3">The commissioner or CPA terminates or declines the commission</td><td>Parties
Circumstance</td><td>CPA</td><td>Commissioner</td></tr>
<tr><td>Commission was terminated on his/her initiative</td><td>N/A</td><td>N/A</td></tr>
<tr><td>(Extension of) Commission was declined</td><td>N/A</td><td>N/A</td></tr>
<tr><td>Opinions and reasons for audit reports issued during the most recent two years, excluding those issued without reservations</td><td colspan="3">None</td></tr>
<tr><td rowspan="7">Any differences in opinions with the issuers?</td><td rowspan="5">Yes</td><td></td><td>Accounting principles or practice</td></tr>
<tr><td></td><td>Disclosure of financial reports</td></tr>
<tr><td></td><td>Scope or steps of audits</td></tr>
<tr><td></td><td>Other</td></tr>
<tr><td></td><td></td></tr>
<tr><td>None</td><td colspan="2">V</td></tr>
<tr><td colspan="3">Description</td></tr>
<tr><td>Other matters for disclosure</td><td colspan="3">None</td></tr>
</table>

(2) On the successor CPAs:

Accounting firm	KPMG Taiwan
Name of CPA	Philip Tang, Shih Wei-Ming
Date of commissioning	April 15, 2021
Matters regarding which the successor CPAs were consulted, and which were related to the accounting treatment or accounting principles of specific transactions; matters regarding which the successor CPAs were consulted, and which were related to the opinions that might be issued on financial reports; results of these matters	None
Written opinions of the successor CPAs on matters regarding which the predecessor CPAs have expressed dissenting opinions	None

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

6. 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.

7. 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	2022		2023, as of March 31	
		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 concurrent President	Chang Chia-Kun	-	-	115,817	-
Director	Teddy Lu	-	-	-	-
Director	Haydn Hsieh	-	-	-	-
Director	George Huang	-	-	-	-
Director	Phison	2,504,580	-	-	-
Independent Director	Max Wu	-	-	-	-
Independent Director	Philip Peng	-	-	-	-
Independent Director	Cathy Han	-	-	-	-
Senior Vice President	Chen Ming-Ta (Note 1)	1,990,040	-	-	-
Vice President	Luo Rong-Fa	15,443	-	15,442	-
Vice President	Huang Mei-Hui	33,606	-	35,606	-
Vice President	Luo Xue-Ru	30,885	-	41,813	-
CTO	Li Jun-Chang	27,024	-	27,024	-
CFO	Lai Zi-Wen	27,024	-	27,024	-
Senior Head	Yin Hua-Jun	34,746	-	34,745	-
Senior Head	Yu Yao-Tse (Note 2)	8,721	-	8,721	-
Accounting Assistant Manager	Huang Yi-Cheng (Note 3)	5,791	-	5,791	-

Note 1: The Senior Vice President, Chen Ming-Ta, was inaugurated on August 1, 2022.

Note 2: Mr. Yu Yao-Tse’s position was adjusted to manager in January 2022.

Note 3: Mr. Huang Yi-Cheng’s position was adjusted to manager in February 2022.

(2) Information on share transfer:

Name	Reason for share transfer	Date of transfer	Party receiving the shares	Relationship between the party receiving the shares and the Company, directors, supervisors and shareholders holding more than 10 percent of the shares	Number of shares (shares)	Transaction price (TWD)
Chang Chia-Kun	Gifting	2022/01/10	Chen Li-Mei	Spouse	115,818	-

(3) Information on share pledge: None.

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

March 31, 2023 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	10.23%	-	-	-	-	-	-	-
Acer Inc.	11,000,000	8.97%	-	-	-	-	-	-	-
Teddy Lu	5,699,906	4.65%	-	-	-	-	-	-	-
Shanlin Investment Co., Ltd.	3,750,000	3.06%	-	-	-	-	-	-	-
Chen, Ming-Ta	1,990,040	1.62%	400,000	0.33%	-	-	-	-	-
Chuang,Chung-Li	1,740,000	1.42%	-	-	-	-	-	-	-
Austin Chen	1,525,633	1.24%	450,268	0.37%	-	-	-	-	-
George Huang	1,207,041	0.98%	-	-	-	-	-	-	-
J.P. MORGAN SECURITIES PLC Investment Account	1,141,030	0.93%	-	-	-	-	-	-	-
Wang, Hsin-Chieh	1,120,000	0.91%	-	-	-	-	-	-	-

9. 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 30, 2023 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	11.48%	-	-	750,000	11.48%
UD info Corp.	4,931,960	68.54%	-	-	4,931,960	68.54%

Note 1: Amount of contribution USD 500,000.
Note 2: Amount of contribution RMB 4,985,714.

IV. Financing

1. Capital and share

(1) Capital sources

A. Capital sources

As of April 30, 2023
Unit: Share/1,000s of TWD

Year/Month	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.
2022/09	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

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.

B.Type of shares

Unit: Share

Type	Authorized capital stock				Remarks
	Outstanding shares		Unissued shares	Total	
	Issued	Private placement			
Common stock	111,688,266	11,000,000	77,311,734	200,000,000	

C.Information on general declaration systems: None

(2) Structure of shareholders

March 31, 2023

Structure / Number	Government agency	Financial institution	Other corporate bodies	Individual	Foreign institutions	Total
Shareholders (persons)	0	0	250	41,261	99	41,610
No. of shares held (share)	0	0	29,774,436	82,181,063	10,732,767	122,688,266
Shareholding ratio (%)	0.00%	0.00%	24.27%	66.98%	8.75%	100%

(3) Ownership distribution

March 31, 2023

Share	Shareholders	No. of shares held (share)	Shareholding ratio (%)
1 to 999	28,678	899,025	0.73%
1,000 to 5,000	10,675	20,628,681	16.81%
5,001 to 10,000	1,226	9,751,720	7.95%
10,001 to 15,000	318	4,081,510	3.33%
15,001 to 20,000	212	3,916,194	3.19%
20,001 to 30,000	168	4,304,790	3.51%
30,001 to 40,000	76	2,758,235	2.25%
40,001 to 50,000	60	2,798,108	2.28%
50,001 to 100,000	105	7,230,876	5.89%
100,001 to 200,000	37	5,288,732	4.31%
200,001 to 400,000	23	6,649,041	5.42%
400,001 to 600,000	14	6,787,034	5.53%
600,001 to 800,000	6	3,899,090	3.18%
800,001 to 1,000,000	1	940,000	0.77%
1,000,001 or more	11	42,755,230	34.85%
Total	41,610	122,688,266	100.00%

(4) Major shareholders

March 31, 2023

Share / Major shareholder	No. of shares held (share)	Shareholding ratio (%)
Phison Electronics Corp.	12,554,580	10.23%
Acer Inc.	11,000,000	8.97%
Teddy Lu	5,699,906	4.65%
Shanlin Investment Co., Ltd.	3,750,000	3.06%
Chen, Ming-Ta	1,990,040	1.62%
Chuang,Chung-Li	1,740,000	1.42%
Austin Chen	1,525,633	1.24%
George Huang	1,207,041	0.98%
J.P. MORGAN SECURITIES PLC Investment Account	1,141,030	0.93%
Wang, Hsin-Chieh	1,120,000	0.91%

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

Unit: TWD/1,000 shares

Item			2021	2022	2023, as of March 31
Market price per share (Note 1)	Maximum		58.80	53.30	53.80
	Minimum		37.20	34.60	40.95
	Average		44.64	42.12	46.43
Net value per share	Before allocation		30.36	33.94	31.65
	After allocation		27.47	28.71	-
Earnings per share	Weighted average shares		100,898	106,846	122,663
	EPS (before adjustment)		4.81	5.23	1.05
	EPS (after adjustment)		4.81	5.23	-
DPS	Cash dividend		2.89	3.30	-
	Accumulated unpaid dividend	From retained earnings	-	-	-
		From capital reserves	-	-	-
	Accumulated unpaid dividend		-	-	-
ROI analysis	PE (Note 2)		9.28	8.05	-
	PD (Note 3)		15.45	12.76	-
	Cash dividend yield % (Note 4)		6.47	7.83	-

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)Ｘ100%.

(6) Dividend policy and implementation status

A. Apacer's dividend policy

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

(A) Pay taxes.

(B) Make up losses of previous years.

(C) Appropriate 10% as legal earnings reserve, except when the legal reserve of the Company has already reached the total capital.

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

(E) 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.

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

The distribution of earnings in 2022 was approved by the Board of Directors on February 21, 2023. A cash dividend of TWD 404,871,278 will be distributed to the shareholders.

(7) The influence of the Accumulated unpaid dividend proposed at the current shareholders' meeting on the operation performance and EPS of the Company: N/A

(8) Remunerations for employees and directors

A. 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".

B. 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.

C. Information on the distribution of the remuneration to employees and directors in 2022 approved by the Board of Directors

Unit: TWD

Disclosed Information	Amount
Remuneration to be distributed to employees - Cash	$83,479,000
Remuneration to be distributed to employees - Shares	-
Remuneration to be distributed to directors	$10,682,859
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 dividends to employees and remunerations to directors	5.23 (basic) 5.11(diluted)

Note: Information related to the distribution of profit in 2022 can be accessed through the Market Observation Post System.

D. Actual distribution of the remuneration to employees and directors in 2021:

Distribution of the remuneration to employees and directors in 2021 was adopted at the Board of Directors meeting on February 23, 2022. The approved distribution was not different from the estimate. The details are described below:

Unit: TWD

Profit distribution for FY 2021	Actual distribution	Book estimation	Difference
Remuneration distributed to employees - Cash	62,103,000	62,103,000	-
Remuneration distributed to employees - Shares	-		
Remuneration distributed to directors and supervisors	8,926,460	8,926,460	-

E. Names of the top-10 employees receiving the highest remuneration from the profit of 2021 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	-	15,820,000	15,820,000	3.26%
President	Chang Chia-Kun				
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				

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

2. Status of corporate bonds

N/A

3. Status of preferred stock

N/A

4. Status of overseas depositary receipts

N/A

5. Status of employee stock option certificates

(1) 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.

(2) 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.

6. Status of employee restricted stock

(1) 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:

April 30, 2023

Type of employee restricted stock	1st issuance of employee restricted stock in 2021
Effective date and total shares	July 7, 2020 1,200,000 common shares
Issuance date	January 6, 2021
Number of issued employee restricted shares	926,539 shares
Number of employee restricted shares that may be issued	0 shares
Issue price	TWD $0 (Issuance as a bonus)
Ratio of number of issued employee restricted shares to the total issued shares	0.9%
Vesting conditions of employee restricted stock	Fulfillment of both the performance and service conditions: 1. Company performance The most recent year before expiry of the first vesting period of the Company will be based on the consolidated financial statements audited and certified by the CPAs. The Company's earnings per share (EPS) shall meet any of the following conditions: (1) Where the EPS in 2020 is more than or equal to that in 2019, the maximum amount of distributable employee restricted stock is limited to 100% of the shares issued under Article 2 of the Rules. (2) Where the EPS in 2020 is less than that in 2019 and is more than or equal to 75% of that in 2019, the minimum amount of distributable employee restricted stock is 75% of the shares issued under Article 2 of the Rules, and is calculated based on the rate of achievement of the company performance. For example, if the rate of achievement of the company performance is 90%, the amount of distributable shares is 90% of the shares issued under the said Article 2. (3) Where the EPS in 2020 is less than 75% of that in 2019, the vesting conditions is deemed not fulfilled. 2. Employee performance The personal and job performance of any employee who has been granted restricted stock award shares shall fulfill the personal performance criteria set by the Company during the period until expiry of the vesting period. Failure to fulfill the personal performance criteria will be deemed as non-fulfillment of the vesting conditions. 3. Years of service After achievement of the company and employee performance, the maximum percentages of shares that may vest in series for the year based on the conditions of employee service are as follows:

	(1) For any full-time employee who has provided service for at least one year following the date of allotment and remains on the job, and has not violated the employment contract, work rules or requirements of the Company, the calculation is based on 50% of the number of distributable shares. (2) For any full-time employee who has provided service for at least two years following the date of allotment and remains on the job, and has not violated the employment contract, work rules or requirements of the Company, the calculation is based on 50% of the number of distributable shares.
Restricted rights of employee restricted stock	Restriction on the rights of shares before fulfillment of the vesting conditions (1) Before fulfillment of the vesting conditions, a holder of the employee restricted stock is entitled to participate in stock dividends, dividends and cash capital increase. (2) Before fulfillment of the vesting conditions, the employee restricted stock shall not be disposed through sale, pledge, transfer, giving to others as gifts, setting or through any other ways. (3) Before fulfillment of the vesting conditions, a custodian is commissioned to present, propose, make statements, exercise voting rights and other matters related to shareholders' equity at the Company's shareholders' meetings on behalf of employees.
Custody of employee restricted stock	The employee restricted stock shall be immediately consigned to the custodian designate by the Company for custody upon the issuance. The Company or the representative assigned thereby shall sign the reverent trust contracts with the custodian on behalf of the employees to allow the custodian to act for them in handling the relevant trust affairs discretionarily. Before fulfillment of the vesting conditions, the employees shall not ask the custodian to return the employee restricted stock with any reasons or through any ways.
Handling procedure for employees' non-fulfillment of the vesting conditions after allotment or subscription of employee restricted shares	1. Handling procedure for employees' non-fulfillment of the vesting conditions If any employee, after having been granted employee restricted shares, has failed to fulfill the vesting conditions, his/her shares are recovered and canceled by the Company without compensation. 2. If any employee voluntarily resigns, is involuntarily unemployed, retires, or voluntarily asks for transfer to any affiliated company, the Company shall recover and cancel the shares granted that are not yet fully entitled to be received without compensation. 3. If any employee is approved for leave without pay, the employee can be entitled to the shares granted that are not yet fully entitled to be received when he/she goes back to the original post. However, the distributable shares of the year in which the employee goes back to his/her original post shall be calculated based on the percentage of his/her service period. 4. In case of any employee's disability or death caused by occupational disasters, or his/her death, the shares that are not yet fully entitled to be received are handled as follows: (1) If the employee is disabled due to an occupational disaster and thus is unable to provide service, all the vesting conditions for the shares granted that are not yet fully entitled to be received are deemed to be fulfilled on the effective date of the employee's separation from service. However, it is still subject to the restriction of vesting conditions in Article 4 of the Rules in the current year. (2) If the employee dies due to an occupational disaster or due to any other reasons, all the vesting conditions for the shares granted that are not yet fully entitled to be received are deemed to be fulfilled on the date of the employee's death. His/her heir shall complete necessary legal procedures and provide relevant supporting documents to apply for receiving the shares or disposed equities inherited thereby. However, it is still subject to the restriction of vesting conditions in Article 4 of the Rules in the current year.
Number of recovered or purchased employee restricted shares	0 shares
Number of employee restricted shares from which the restriction has been removed	926,539 shares
Number of employee restricted shares from which the restriction has not been removed	0 shares
Ratio of number of employee restricted shares from which the restriction has not been removed to the total issued shares (%)	0%
Effect on shareholders' equity	There is unlikely to be any material impact to the current shareholders' equity.

(2) 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
Managerial officer	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										
	Manager	Huang Mei-Hui										

7. Status of new share issuance in connection with mergers or acquisitions or with acquisitions of shares of other companies:

(1) The following shall be disclosed for the issuance of new shares in connection with mergers or acquisitions or with acquisitions of shares of other companies in the most recent year as of the date on which the annual report was printed:

The assessment opinion of the lead securities underwriters, Horizon Securities Corp., of the most recent quarter is hereby presented below:

Apacer Technology Inc. (hereinafter referred to as “Apacer” or “this company”) proposed to acquire the common shares of UD info Corp. (hereinafter referred to as “UD info”) by issuing new shares for capital increase in 2022. The proposal was reported to the Taiwan Stock Exchange Corporation and took effect with the Letter Tai-Zheng-Shang-Yi-Zi No. 1111802820 on July 6, 2022. The reference date of the share exchange was August 1, 2022, and the application for alteration for the new share issuance has been approved by the Ministry of Economic Affairs on September 1, 2022. Complying with Article 9, Paragraph 1, Subparagraph 8 of the “Regulations Governing the Offering and Issuance of Securities by Securities Issuers”, Apacer asked us to provide an assessment opinion as to the effect on the finances, business, and shareholders’ equity of Apacer as of Q1 2023 resulting from the acquisition of shares of UD info based on issuance of new shares.

A. Effect on the finances

Instead of paying cash consideration, Apacer issued 9,863,920 new shares in exchange for the 4,931,960 common shares issued by UD info, so the existing fund allocation and financial operations of this company were not impacted. After the share exchange, UD info has become a subsidiary of this company since August 2022. To comply with the period for listed companies to report revenues and financial statements, the two parties have made progressive adjustments for the differences, so that the financial and accounting systems as well as operating models of both sides could gradually become consistent with each other. Apacer focuses on memory module and flash memory as the main businesses, with the product application covering industrial control, medical care, industrial IoT, networking servers, automated optical inspection, storage devices, flash drives, memory cards and gaming peripherals. As for UD info, they focus on the field of customized industrial control and has a wide range of product application in the industries of automotive, aerospace, healthcare, communication, monitoring and entertainment; the overall gross profits and operation are fine. From the August 1 to December 31, 2022, UD info had contributed the net income of TWD 56,600,000 to the Group and fully reflected the investment benefits in the financial statements of Apacer Technology. Forming the strategic alliance can help combine the respective application fields of product technology and customers which the two parties have advantage in, expand the product applications and market share of the group, and increase the scope and scale of the group’s operation; the net profit attributable to shareholders of the parent company in Apacer’s consolidated financial statements can thereby be higher. Thus, there has been a beneficial effect on the finances.

B. Effect on the business

As the products of Apacer and UD info have significant complementary effect, the combination of two companies can ensure greater completeness for Apacer's product portfolio. Therefore, this company has been verifying UD info's products through the product development procedure in a progressive manner, which will facilitate its development of prospective customers in the future. In addition, since there are too many types of industrial control products and the requirements for the module specifications and functions vary from customer to customer, Apacer's existing products are not able to satisfy all the customers. The types of products Apacer focuses on are different from those of UD info; if this company develops product lines for all types, a great deal of time and R&D human resources will have to be devoted to the development, testing and verification of products. As a result, the two parties have jointly implemented the technical cooperation plan under which the customized products and services of UD info can be enhanced, the prospective customers can be developed, and Apacer can reach other customers with the products of special specifications developed through UD info's technologies.

The new products UD info developed with Apacer's support are expected to be launched in second half of 2023; the scale of server business and the possibility in the European and US market are likely to be increased accordingly and bring greater operating performance.

C. Effect on the shareholders' equity

This company issued 9,863,920 new shares in exchange for the 4,931,960 common shares issued by the private company, UD info; such shares accounted for 8.83% of the total of this company's previously issued shares and new shares issued this time (111,688,266 shares). Although this company's outstanding common shares have increased due to the share exchange, this company directly received around 68.54% of shares of UD info and included it as a subsidiary of the group. Also, the collaboration and interaction between the two parties can be fostered correspondingly, which helps bolster the group's competitiveness in the market, expand the group's business scale, and further stimulate the continuous growth in the revenue and profit. From the August 1 to December 31, 2022, UD info had contributed the revenue of TWD 313,826,000 and the net income of TWD 56,600,000 to the Group. Its operating results have contributed to the company's consolidated comprehensive income statement, thus, there has had positive benefits in terms of shareholders' equity.

D. Benefits of transfer achieved or not

This company acquired the 4,931,960 common shares of UD info through the issuance of new shares. It has included UD info as a subsidiary of its group since August 1, 2022, and the application for alteration for the new share issuance has been approved by the Ministry of Economic Affairs on September 1, 2022. After the share exchange, both parties have progressively implemented the cooperation plan. As the combination of their respective technical strengths is helpful to the expansion of the product applications and market share of the group, a beneficial effect on the finances, business and shareholders' equity of this company is expected. The benefits of the share exchange have gradually been achieved.

(2) For the issuance of new shares in connection with mergers or acquisitions or with acquisitions of shares of other companies and approved by the Board of Directors in the most recent year as of the date on which the annual report was printed, the implementation status and the basic information of the company (or companies) to be merged or acquired or whose shares are to be acquired shall be disclosed:

A. Implementation status of issuance of new shares in connection with mergers or acquisitions or with acquisitions of shares of other companies and approved by the Board of Directors in the most recent year as of the date on which the annual report was printed:

The Company's Board of Directors approved on June 2, 2022 to issue new shares for capital increase for the share exchange based on acquisition of shares of UD info Corp. (hereinafter referred to as "UD info"). 9,863,920 common shares were issued for capital increase in exchange for the 4,931,960 common shares issued by UD info; the par value was TWD 10 per share, and the amount totaled TWD 98,639,200. The proposal has been approved by the Taiwan Stock Exchange Corporation with the Letter Tai-Zheng-Shang-Yi-Zi No. 1111802820 on July 6, 2022, and the application for alteration has been approved by the Ministry of Economic Affairs with the Letter Jing-Shou-Shang-Zi No. 11101154500 on September 1, 2022. September 15, 2022 was set as the date for the issuance of new shares for capital increase.

B. Basic information of the company whose shares are to be acquired

Unit: TWD for earnings per share and TWD 1,000 for the rest

<table>
<tr><td colspan="2">Name of Company</td><td>UD info Corp.</td></tr>
<tr><td colspan="2">Company address</td><td>3F-4, No. 8, Ln. 609, Sec. 5, Chongxin Rd., Sanchong Dist., New Taipei City, Taiwan</td></tr>
<tr><td colspan="2">Responsible person</td><td>Chen Ming-Ta</td></tr>
<tr><td colspan="2">Amount of paid-up capital</td><td>71,962</td></tr>
<tr><td colspan="2">Main business items</td><td>Development, manufacturing and sales of products related to industrial application and embedded memory</td></tr>
<tr><td colspan="2">Main products</td><td>Flash memory, memory module</td></tr>
<tr><td rowspan="8">Financial information in the most recent year</td><td>Total assets</td><td>690,761</td></tr>
<tr><td>Total liabilities</td><td>328,021</td></tr>
<tr><td>Total shareholders' equity</td><td>362,740</td></tr>
<tr><td>Operating revenue</td><td>736,897</td></tr>
<tr><td>Gross operating profit</td><td>232,103</td></tr>
<tr><td>Operating profit (loss)</td><td>167,369</td></tr>
<tr><td>Income for the current period</td><td>132,980</td></tr>
<tr><td>Earnings per share</td><td>18.48</td></tr>
</table>

8. Implementation status of financing plans:

(1) 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 March 31, 2023, the funds raised from the private placement of securities in 2022 were all utilized by the Company; the planned benefits have been achieved.

(2) Implementation status:

With respect to fund 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.

V. Overview of Business Operation

1. Business activities

(1) Business scope

A. Major business

(A) Memory module

(B) Flash memory

(C) Others

B. Operating proportion

Unit: TWD 1,000

Product	2022	
	Sales amount	**Sales percentage**
Flash memory	5,090,288	57.86%
Memory module	3,604,832	40.98%
Other	101,915	1.16%
Total	8,797,035	100.00%

C. 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

(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) SDHC / SDXC UHS-I U1 Card, high speed U3 V30 SDHC / SDXC, UHS-II U3 V90 SDXC Card

(N) microSDHC UHS-I U1 Card, high speed UHS-I U3 V30 A1 and A2 microSDHC / SDXC Card, microSD V30 A1 Gaming Card

(O) USB 2.0 & USB 3.2 Gen 1 Flash Drive, USB3.2 Gen 1 Type-C Portable Flash Drive
(P) 2.5” SATAIII, mSATA, M.2 and PCIe interface SSD
(Q) External SSD
(R) USB 3.2 Gen 1 Portable Hard Drive and Drop-resistant Portable Hard Drive of Military Specifications
(S) Military PCIe U.2 SSD
(T) Enterprise SATA3.0 M.2, 2.5” SSD /PCIe U.2, M.2, E1.S SSD
(U) USB3.0 SSD Module
(V) Anti-vulcanization DDR4 Memory Module (Server DIMM/Ultra DIMM/Rugged SODIMM)
(W) Rugged DDR4 XR-DIMM Module
(X) High speed DDR4 2666 wide-temperature memory module
(Y) 32-Bits DDR4 SODIMM Module
(Z) DDR4 2933/3200 memory module
(AA) High speed DDR4 2933/3200 wide-temperature memory module
(BB) DDR4 32GB UDIMM/SODIMM ECC DIMM ECC SODIMM memory module
(CC) Rugged DDR4 XR-LRDIMM Module
(DD) DDR5 4800 UDIMM/SODIMM/ECC DIMM/ECC SODIMM memory module
(EE) Luminance meter / Light meter / Stroboscope
(FF) 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)
(GG) Smart healthcare solutions (smart environmental safety management system, smart personal safety protection system, LINE AI smart service cloud management system)
(HH) 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)

D. New products to be developed

(A) DDR5 5600 UDIMM/SODIMM/ECC DIMM/ECC SODIMM memory module
(B) DDR5 4800 REG DIMM server memory module
(C) DDR5 wide-temperature memory module

(D) USB3.2 Gen2 USB

(E) Storage SSDs used by servers: PCIe U.2, U.3 SSD / BGA SSD / M.3 module / EDSFF module

(F) Gen5 PCIe SSD RGB

(G) PCIe Gen5x4 SSD、USB3.2 Gen2x2 portable SSD

(H) All-In-One water cooling Dual Pump Solution

(I) Micro LED optical inspection system

(J) Luminance / Light 2-in-1 inspection device

(K) UV optical testing device

(L) IR optical testing device

(2) Overview of the industry

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

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

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

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

(A) Overview of the DRAM market

a. Market size

In the report provided by the research and survey agency Gartner on November 28, 2022, the revenue of the global semiconductor industry in 2022 was estimated to be up to USD 618 billion with a growth at 4%. In 2023, the revenue is expected to drop from USD 623 billion to 596 billion, declining by 3.6% in comparison with 2022.

As Gartner pointed out, the short-term prospect of the semiconductor industry had worsened, and the global economy were aggravated rapidly while the consumer demand reduced. These might bring negative impact on the global semiconductor market in 2023. Gartner also indicated that the current semiconductor market was being polarized between a consumer-driven market and a enterprise-driven market. The consumer market was weak mainly because that the inflation and rate rise caused decline in disposable income of consumers. Moreover, consumers took fields such as travel and entertainment into consideration first when spending their money.

Though the macro economy declined, the enterprise-driven markets including corporate network, computing, industry, medicine and commercial transportation were comparably resilient. Gartner pointed out that the advantage of the enterprise-driven markets comparing with other markets came from strategic investments of companies, which enhanced the basic work-from-home structure and business expansion plan as well as continuing the strategy of digitalization.

Gartner indicated in the report that the overall revenue of the memory industry in 2022 was estimated to remain stable due to the weak demand in the memory market, inventory increase and the pressure of price reduction by customer requirements. However, the revenue in 2023 might reduce by 16.2%. The worsening economic prospect had a negative impact on smartphones, personal computers and consumer electronics, causing oversupply in the DRAM (dynamic random-access memory) market. The revenue of the DRAM industry in 2022 expectedly declined by 2.6% to USD 90.5 billion, and the revenue in 2023 might further drop by 18% to USD 74.2 billion.

According to the statistics made by another market research agency IC Insights, though there was the pressure of inventory correction in H2 2022, the size of the global semiconductor market reached USD 636 billion, creating an all-time record again. However, the size of the global semiconductor market will be only USD 604.2 billion with a yearly reduction of 5% in 2023 due to the impact of the significant increase in global inflation and the macroeconomic uncertainty as well as the apparent decline in the memory price.

As the report points out, the size of the global semiconductor market reached USD 614.7 billion with a yearly growth of 25% in 2021 thanks to the global digital transformation drove by the COVID-19 pandemic. The market condition in H1 2022 was active, but inventory adjustments occurred in H2. Overall, the size still reached USD 636 billion with a growth of 3% YoY, creating an all-time record again. IC Insights expects that the output value of the OSD (optoelectronic, sensors and discrete device) market will grow by 8% from last year to USD 112.7 billion this year. On the other hand, the output value of the integrated circuit (IC) market is expected to reach USD 523.3 billion with a growth of 3% YoY. Both markets will reach a historical high.

The production chain of chips has entered the stage of destocking due to the weak sales of consumer electronics caused by the global inflation. Thus, IC Insights estimates that the inventory adjustment will extend to H1 of the next year, and the size of the global semiconductor market in 2023 will reduce by 5% in comparison with this year to USD 604.2 billion. Compared with this year, the OSD market will have an outstanding performance and slightly increase to USD 112.8 billion. Nonetheless, due to the impact of the memory price sharply dropping and the demand turning weak, the output value of the IC market will fall 6% YoY to USD 491.4 billion as a result.

The market research agency believes that the inventory adjustment caused the business cycle of the semiconductor market to speed up and go downward to the bottom, but the industry will rise again after the periodic fall in 2023. Not only the introduction of new products will drive demand, new applications such as automotive electronics, AI, HPC (high performance computing) and industrial automation will facilitate the demand for chips as well. In addition, the trend of increasing silicon content in new-generation electronics remains. It is expected that the market will enter another cycle of growth from 2024 to 2026, and the market size will increase to USD 843.6 billion at a 6.5% CAGR in 2026.

The revenue of the DRAM industry in 4Q22 was USD 12.281 billion, declining by 32.5% in comparison with the previous quarter. The decline rate was higher than that in 3Q22. The revenue dropped for over 30% in a single quarter, almost exceeding the 36% drop rate at the end of 2008 during the financial crisis. The main reason of the revenue decline was the rapid fall of the ASP. Since 3Q22, the purchase momentum of customers has rapidly decreased and caused a prompt rise in the inventory level of suppliers. As a result, suppliers were more active in bargaining to strive for the shipment share in 4Q22. The server DRAM had the most significant drop rate. In order to increase the shipment volume of the data center, suppliers conducted cross-quarter binding of bargaining with the CSPs, causing a 23% to 28% decrease in the DDR4 in a single quarter. For the DDR5, the drop rate even increased to between 30% and 35%. Overall, the most significant drop in prices occurred in 4Q22.

Regarding the DRAM revenue, the three major DRAM manufacturers experienced apparent revenue decline, but they had slightly different decline rates. Of all manufacturers, Samsung continued to be the no. 1 and had the lowest decline rate. During the price war in 4Q22, Samsung held the most active attitude in bargaining. Therefore, when demand declined, their shipment increased instead of reducing. Their revenue reached USD 5.54 billion with a reduction of 25.1% in comparison with the previous quarter, and their market share reached 45.1%. Ranked second, SK Hynix had a revenue of USD 3.398 billion with a 35.2% decline, and their market share by revenue fell to 27.7%. Micron, whose revenue was USD 2.829 billion, was still ranked no. 3. They presented the financial statements earlier than the other manufacturers, which caused a higher drop rate in shipments. As a result, they had the most significant revenue decline among all manufacturers, making their market share by revenue fall to 23%. (Fig. 1)

Impacted by the dramatic revenue decline, the operating profit margin of all manufacturers rapidly narrowed. The operating profit margin of Samsung in 3Q22 dropped from 38% to 14% while that of SK Hynix fell from 33% to 6%. As for Micron, their operating profit margin reduced from 31% to 6.1%. (Fig. 2)

Unit: Millions of US$

Ranking	Company	Revenue			Market Share	
		4Q22	3Q22	QoQ (%)	4Q22	3Q22
1	Samsung	5,540	7,400	-25.1%	45.1%	40.7%
2	SK Hynix	3,398	5,242	-35.2%	27.7%	28.8%
3	Micron	2,829	4,809	-41.2%	23.0%	26.4%
4	Nanya	254	362	-30.0%	2.1%	2.0%
5	Winbond	104	150	-30.3%	0.8%	0.8%
6	PSMC	23	38	-39.5%	0.2%	0.2%
	Others	133	186	-28.5%	1.1%	1.0%
Total		12,281	18,187	-32.5%	100%	100%

Note 1: 3Q22—USD 1 = KOW 1,341; USD 1 = TWD 30.4

Note 2: 4Q22—USD 1 = KOW 1,359; USD 1 = TWD 31.3

Source: TrendForce Corp., February 2023

Fig. 1 2022 Q4 DRAM brand ranking by operation income

Company	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Samsung	34%	46%	53%	50%	48%	50%	38%	14%
SK hynix	29%	38%	47%	45%	39%	43%	33%	6%
Micron	26%	38%	42%	41%	40%	42%	31%	6.1%
Nanya	17%	31%	38%	37%	31%	30%	8%	-19%

Source: TrendForce Corp., February 2023

Fig. 2 2022 Q4 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.

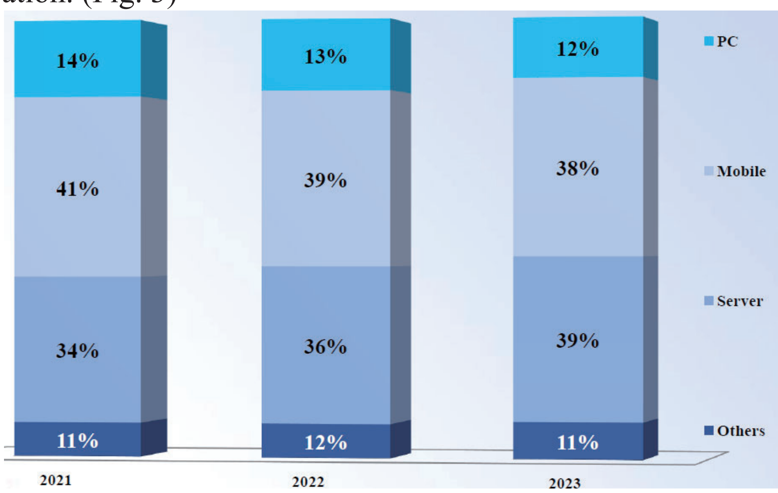
Commodity DRAM is the standard DRAM with PC related products as the major applications, such as DTs and NBs. Some low-end tablet PCs also use Commodity DRAM for price considerations.

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 application is expected to become the largest segment of global DRAM shipment by 2023, surpassing mobile devices.

Specialty DRAM is a special niche product and has the widest application range especially in the electronic consumer goods including smart TVs, digital set-top boxes, game consoles, and smart speakers. In-vehicle and industrial wide-temperature memories are also the application territories of Specialty DRAM. As the technologies and equipment for IoT gradually mature, the demand for niche memory products with a small capacity will continue to increase.

Mobile DRAM is a mobile application primarily used in mobile device products. Most of the Mobile DRAM series use LPDDR3 and LPDDR4 to meet the low power requirements of mobile device products. Smartphones and middle to high end tablets are the major applications of the Mobile DRAM. Some notebooks use this memory to meet their low power requirements. Most of the Apple MacBook series use Mobile DRAM instead of Commodity DRAM.

Mobile devices have played a role that drives the growth of the global semiconductor market in recent years, and their built-in functions have become more diversified. In addition, many brands of smartphones have emphasized the performance of the multi-camera function, therefore increasing the demand for low-power features. As a result, Mobile DRAM used in mobile devices has seen its demand rise greatly, and it, along with Server DRAM, have become the two mainstream products for DRAM application. (Fig. 3)



Source: inSpectrum, February 2022

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 Yole’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 USD 167 billion, accounting for 28% of the whole semiconductor industry. Meanwhile, the size of the automotive memory market was USD 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.

Currently, automotive memory is used in four components in the vehicle application: in-vehicle Infotainment, ADAS, Telematics, and D-cluster. In addition to the in-vehicle Infotainment system remaining the major application of DRAM by 2024, TrendForce expects that the DRAM bit consumption in the vehicle application 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. (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 the autonomous vehicles are upgraded to Level 3, or with more integrated AI functions, they must be able to integrate the 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.

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) The sharp drop in prices in H2 2022 forced DRAM manufacturers to impose 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. Moreover, the annual bit supply only increased by 10% due to the DRAM production slowdown and narrowed from the growth of 15% to 20% in 2022.

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. If the market remains in a bad condition in the future, it cannot be excluded that the industry will continue to control the output until H2 2023. Afterwards, SK Hynix also announced that their capital expenditure in 2023 will reduce by 50% in comparison with 2022. With production reduction trending in the industry, Samsung held their own opinion against all odds. They maintained additional investments and increased production capacity; they even became more aggressive in 4Q22, providing the customers with space for more active bargaining. This was to compress the percentage of other peer competitors in the supply market. Samsung showed an open attitude for the first time in the 4Q22 financial meeting. They said that they will adjust the production line and improve equipment as well as slashing the bit supply output since 1Q23. However, they did not indicate the rate of the output reduction.

Though Samsung will continue their strategy of increasing investments in 2023, they maintain a relatively “self-restraining” intension. It is expected that they will not significantly increase the production output until the end of 2023. By contrast, Micron’s production volume will expectedly continue falling until Q2. When the market condition becomes steadier at the end of the year, their production volume might return to the same level as H1 2022, preventing their operation from being affected by the loss caused by the price reduction of the inventories.

(b) DRAM process transition schedule

Regarding production process techniques, 1Ynm and 1Znm are still the main production processes of Samsung. They account for, in total, 70% of the production. This year, it is expected that the focus will move to 1Znm, which will have a proportion of about 45%. The proportion of 1alpha nm is still increasing due to the contribution of P1L. As of the end of the last year, its production percentage was estimated to be 6%. Though P3L, a new factory, also contributes to the output this year, the production percentage will increase to only 16% because Samsung has slowed down the process transition. For 1beta nm, it is still at the R&D stage and might have the chance to be introduced at the end of this year at the earliest. The delivery progress of DDR5 samples is also delayed to H1 of this year due to the transition slowdown of 1alpha nm. The DDR5 will enter the mass production stage in H2 this year, and its production percentage will reach 19% at the end of the year. This means that Samsung has the slowest DDR5 progress among the three major manufacturers.

For process planning, SK Hynix still focuses on 1Ynm and 1Znm, both having a joint percentage of 66% in the production. They have actively increased the production capacity of 1alpha nm. At the end of last year, it accounted for more than 20% of the production. This year, because SK Hynix has slowed down the process transition and narrowed the output, the proportion of 1alpha nm will drop from 35% to 30% at the end of the year. However, 1alpha nm products will still replace 1Ynm as the mainstream product. 1beta nm is also planned to be put into production in a small quantity in M16 at the end of this year. Thus, still at an early stage of production, it has not contributed much to the output. The 1alpha nm DDR5 has been developed in an active manner and mass produced since the second half of last year. Its production percentage this year has reached nearly 40%. As for the next-generation production process 1beta nm, the production will take place in M16 in the second half of the year, but only in a small quantity. It will account for around 1% of the overall production.

In terms of process transition, Micron has been successful in the R&D progress of the most advanced 1Znm and 1alpha nm, having a joint percentage of more than 70% in the production. Because the reduction in production mainly affects the processes below 1Znm, 1alpha nm has become the major production process, and its production percentage has been driven to nearly 50%. For the planning of 1beta nm, it was first put into production in the MMJ (the Japan plant). However, its introduction has been slowed down. The OMT (the Taiwan plant) will start the production in the middle of this year, and the estimated production percentage is 16%. The DDR5 products will be mass produced through this process in H2. Looking into the long-term blueprint, the R&D of

1gamma nm will take place in the U.S. due to the need of using EUV machines. After the yield is improved, it will be introduced to the OMT for mass production. Hence, we plan to send a second EUV into the OMT in order to prepare for the new production in the future.

25nm, with a production capacity of around 24K, is the most advanced process of PSMC. It will account for over 60% of PSMC's production at the end of this year. Another mainstream process is 38nm, which has a higher drop rate due to the canceling of orders by customers. Its percentage will drop to 34% this year. Originally, there was a 20nm process (miniaturized from the 25nm process), but it was officially terminated because Micron's authorization was long overdue. Nonetheless, PSMC is developing the 19nm process by themselves, and they expect to roll the process out in 2024.

The proportion of 20nm in Nanya's production has reached over 80%. Production in the new 1Anm process has started in small quantity, and the DDR4 8Gb is the main product at the early stage. After mass production, the next-generation product will be the DDR5 8Gb. DDR3 products will continue to be produced in the 20nm or 30nm process instead of the 1Anm. The next-generation 1Bnm is also in development; however, the new process is at an early production stage and cannot contribute much to the production capacity. It needs to wait until the construction of the new factory is completed to have an obvious increase in proportion. (Fig. 5.)

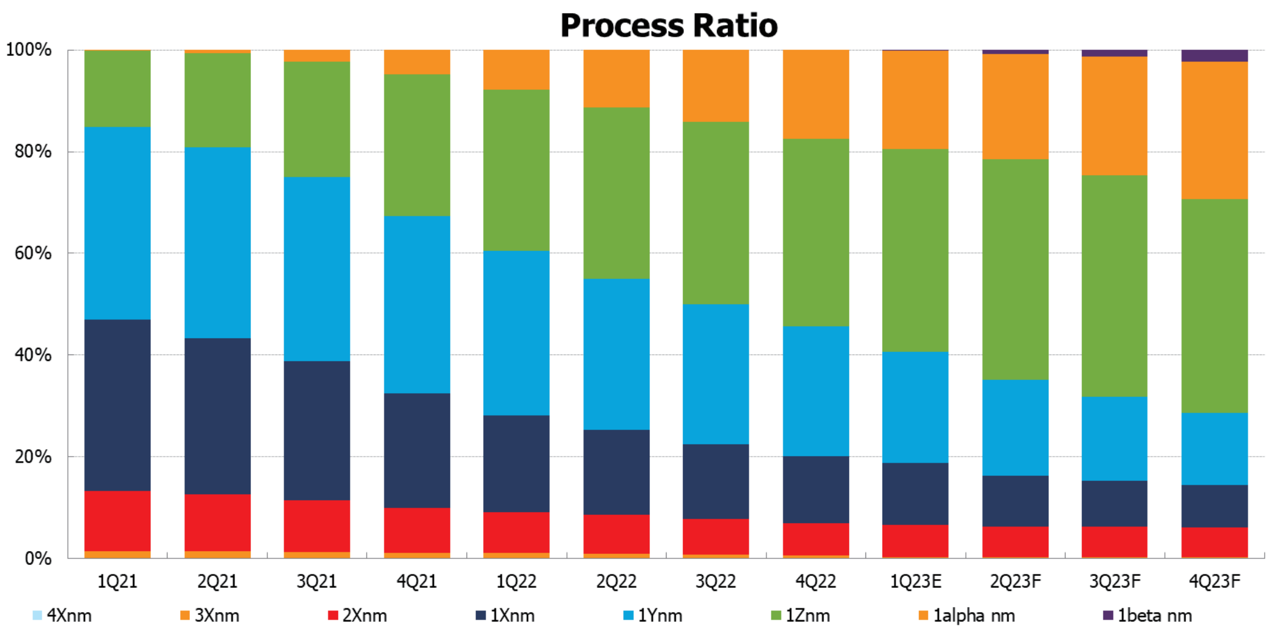
Winbond's main production process is still 25nm, which accounts for almost 50% of their production. 25S nm has entered trial production at Kaohsiung Plant, and its percentage rapidly rises to around 30% due to the sharp production reduction in old processes. The next-generation process 20nm will enter trial production in small quantities in the second half of the year.

CXMT focuses on mainstream products such as the DDR4 8Gb and the LPDDR4 8Gb while JHICC selects the Consumer DDR4 4Gb as the initial product. The positioning of the two companies is clear under the national policy. However, dark clouds are hanging over the semiconductor industry in China due to the new ban introduced by the U.S. Government, restrictions on equipment purchases and the departure of machine operators. The companies are thus facing challenges in production and process transition. All of CXMT's processes are 19nm, but they have received production approval for 17nm after they sent it to the US Department of Commerce for review again. To avoid being affected by geopolitics again, CXMT is actively developing an internal production line pursuant to the "anywhere but the US" strategy and increasing the percentage of Japanese and Korean equipment suppliers. Before the development of the production line is completed, the production growth rate is expected to be relatively lower. JHICC has a 25nm process and produces DDR4 4Gb products only. It is not easy for them to increase the production capacity under the ban issued by the US government. Hence, they have actively collaborated with Japanese and Korean equipment suppliers and maintained the operation of the existing machines as well as stimulating positive output growth for the next year by improving the yield. However, their market share will continue to drop considering that the process and the production capacity has not been expanded or increased. (Fig. 5 and Fig. 6)

Company	Current Generation	Under Transition	Next Generation
Samsung	1Ynm/1Znm	1Anm	1Bnm
SK Hynix	1Ynm/1Znm	1Anm	1Bnm
Micron	1Znm/1αnm	1βnm	1γnm
PSC	38nm/25nm	19nm	
Nanya	20nm	1Anm	1Bnm
Winbond	25nm	25Snm	20nm
CXMT	19nm	17nm	
JHICC	25nm		

Source: Compiled by Apacer in 2023

Fig. 5 Evolution of the DRAM process



Source: TrendForce Corp., February 2023

Fig. 6 DRAM process ratio

(c) 4Q22 changes in revenue share by products of DRAM manufacturers

In terms of revenue share by products, Samsung had been shipping server DRAM products actively, but the unit price still dropped sharply. As a result, the revenue share dropped from 33.6% in 3Q22 to 32%. The continuous low demand for mobile DRAM making the customers unwilling to stock products, which resulted in revenue decline again, falling from 33.5% in 3Q22 to 30.0%. Other products including PC, consumer and graphics DRAM had a slightly increased percentage of 38%.

In terms of revenue share by products, SK Hynix's server DRAM had a lower decline rate than other fields due to bundling. Still being the main source of revenue, its revenue share in 4Q22 slightly rose from 46.7% to 47.1%. On the other hand, the sales of mobile DRAM had not recovered, causing a decline of nearly 50% in the revenue from it. Thus, its revenue share continued to fall from 21.2% in 3Q22 to 15.9%, a percentage lower than the 20% level. The percentage of other products including PC, consumer and graphics DRAM increased to 37%.

In terms of revenue share by products, the share of Micron's server DRAM rose from 39.3% to 40.2%. Though the shipment of the product was compressed by Korean suppliers, its percentage still slightly increased due to a smaller decline than other applications. For the mobile DRAM, the trade of it was down because brand manufacturers continued to strive for destocking. As a result, its share consistently dropped from 28.1% in 3Q22 to 21.5%. Additionally, the percentage of PC, consumer and graphics DRAM increased to 38.3%.

For PSC, the revenue share by products did not have significant changes because of the low demand in each field. In 4Q22, the percentage of logic products in revenue remained at around 60%; the DRAM business (including OEM) accounted for 34% of the revenue whereas the NAND Flash business held 6%. The outlook of end products is still not optimistic as 2023 comes around. Under the impact of the inflation, the sales of consumer electronics can hardly have a high recovery rate.

Due to the simultaneous decrease in demand in every field, the revenue share by products did not have significant changes for Nanya Tech. The consumer DRAM was still their major product, having a proportion of 65% to 70%. The PC DRAM accounted for around 15% to 20% while the mobile DRAM maintained - at a level between 10% to 15%. Finally, the server DRAM accounted for only 4% of the revenue. The reason was that major suppliers had advantages in price and in process; thus, it was difficult for Nanya to compete with them in terms of shipment in a market where products were oversupplied.

For Winbond's revenue, the percentage of DRAM dropped quarter by quarter since 2Q22 and eventually fell to 35%. The decline in its performance in terms of revenue was relatively high due to the decrease in quantity and price. Winbond's major Flash product is the NOR Flash. Though its shipment has decreased, the market concerned has been relatively niche due to the reduction of NOR Flash suppliers. Thus, it had a low decline rate comparing with that of the DRAM, which further made its percentage continuously grew.

(B) Current status of the flash memory market

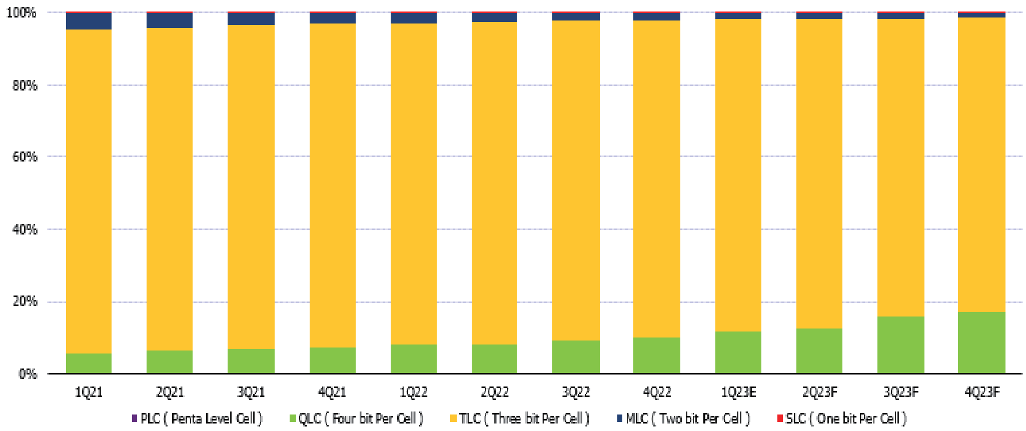
a. Market size

The pollution of the material occurring to Kioxia/WD in early 2022 resulted in tight supply and pushed up the price of quarterly contracts. Meanwhile, wars, pandemic control measures, high inflation and the rise in interest rates suppressed the capital expenditure if companies and further caused an obvious decrease in the demand for purchasing Enterprise SSDs. Moreover, smartphone related products had continuously reduced due to the economic slowdown. As for the momentum of subsequent orders for NBs, it was difficult to maintain the same growth rate as same period in the previous years. As a result, the overall inventory and purchase in the market fell short of expectations and the price of existing products had decreased since April 2022. In H2 2022, the Kioxia/WDC material pollution incident was no longer a factor that must be considered when making procurement policies. Instead, the demand for major applications slumped and made destocking the main focus in supply chains. Hence, the inventory level of manufacturers continued to worsen. Manufacturers began to offer huge discounts on the price as well as making bundles with model suppliers and end customers for long-term and special orders needed in the future. This further caused the sharp decrease in the contract price of products. The price of SLC/ MLC NAND chips in the 2D production process also started to fall due to the weak demand in overall and manufacturers' strong intention to offer discounts, though the decline rate was low compared to the large-capacity products in the 3D process. In terms of the price of wafers, it became the main focus of a price war because of the urgent need of expressing the high inventory pressure caused by customers' passive attitude in purchase, the significant reduction in market size, and the increasing production by manufacturers. In 2022, the annual contract price of 3D TLC wafers slumped for nearly 50%, and the product price severely declined. As a result, memory suppliers including Micron, SK Hynix and Kioxia finally decided to reduce production starting from 4Q22 and slow down the development progress of new processes. Looking forward to 2023, benefits brought by reduction in each manufacturer's production are expected to be seen gradually in Q2, and the decline in prices will continue to narrow. The total production value of NAND Flash products in 2023 will expectedly reach USD 46.399 billion with a decrease of 22.7% in comparison with 2022.

As for the supply, in 2023 the output of 3D NAND wafer production will be about 98% and the supply of 2D NAND Flash products will drop to 1.6%. In 2023, the TLC architecture will still be the key factor on the market with a proportion of more than 80%. The percentage of QLC in the output will gradually increase, so a proportion of nearly 16.5% is expected in 4Q23.

As estimated, 4 suppliers will march toward the NAND Flash technology with more than 200 layers in 2023. The percentage of the 92/96L has fallen below 10% and the 1XX/1YYL has become the core technology. In 2023, the percentage of the 1XX/1YYL is expected to be around 70% to 76%. The bit output in 2022 was 742,338M (8Gb equiv.) while a growth rate of about 17.2% to 870,182M (8Gb equiv.) is expected in 2023.

For product structure, SLC applications focus on demandable embedded SSDs for servers and industrial control and MCP high-performance applications of smart mobile devices, network communications products, set-top boxes, smart speakers and vehicle devices. Market demand is relatively stable. Kioxia, Micron, and Macronix, a Taiwan-based manufacturer, are providers of SLC. The percentage of SLC in the NAND Flash output by bit has dropped to no more than 0.1% due to the significant increase of the 3D output. MLC occupies 1.6%. Thanks to the increased output percentage of the 3D NAND Flash products, TLC will have a percentage of about 84% in 2023 as estimated. QLC is applied in the data centers that need high capacity and some consumer SSD products that need high capacity and low cost. It will have a proportion close to 16.5% at the end of 2023. (Fig. 7)



Source: TrendForce Corp., February 2023

Fig. 7 Global NAND Flash production analysis by product structure

According to the operating revenue of NAND Flash manufacturers in 4Q22:

Samsung actively took countermeasures against market downturns in 4Q22. With the advantage in the cost, they developed more customers and strongly promoted products with a large capacity to increase bit shipments. They succeeded in increasing the market share in this quarter; however, the average unit price sharply fell as a result, having an up to 20% drop QoQ. The revenue of the company's NAND Flash products in 4Q22 was USD 3.48 billion with a quarterly decline of up to 19.1%. However, they remained at a leading position in market share by revenue, which climbed to 33.8% in Q4. Looking forward to Q1 2023, Samsung expected that the shipment volume of NAND Flash products in bits will declined by under 10% QoQ, and that their performance will be slightly better than the market average. Considering that the market condition is still serious, they do not plan to reduce production at present. Samsung indicates that they will continue to observe changes in the macro economy and wait for the consumer electronic market to recover in H2 2023. For 176L products, the UFS 4.0 had been mass produced and shipped with new flagship smartphones hitting the market. Samples of the new PCIe Gen 4 Client SSD at Performance level was delivered, and the product entered the mass production stage at the end of 4Q22. In recent years, competitors have made significant progress in technology, challenging Samsung's leading position in the industry. Thus, as other companies in the industry reduce their production at present, Samsung tends to maintain the capital expenditure and investments in R&D and further creates more advantages in technology as well as production capacity.

Kioxia faced the problem of a sharp drop in both average unit price and bit shipments, which caused a revenue decline of up to 30.5% in 4Q22. The main reasons were the weak customer demand for PC and smartphone related products as well as the inventory adjustment implemented by the customers of the data center. In total, the company accounted for more than 10% of bit shipments in 4Q22, and the average unit price (in JPY) dropped by a rate around low twenties. Kioxia was able to stay at no. 2 in terms of market share with their revenue, which was USD 1.968 billion. In terms of progress in products, Kioxia has positioned the 162L (BISC 6) products in the process of transition. They currently plan to deliver Client SSD products for inspection in 2Q23, but not every product will be put into the 162L process. As the significant reduction in capital expenditure and production continues, the company focuses on planning and investing in the 23L (BICS 8) in the hope of optimizing the cost structure and maintaining the competitiveness of the product in the leading echelon in 2024.

In 4Q22, the bit shipment of Western Digital (WDC) rose by 20% each quarter, which balanced the loss caused by the price slump. The revenue of the NAND Flash department was USD 1.657 billion, falling only by 3.8% QoQ. The shipment of SSDs in the channel network in 4Q22 had rebounded, but the demand for commercial NBs turned weak and the customers of the server continued to destock parts and components. The aforementioned positive effect was offset as a result. Looking forward to 1Q23, WDC that bit shipments and the average unit price will fall due to weak demand, but shipments may return to normal growth in 3Q23. In addition, WDC has announced their follow-up on production reduction in early 2023. Then, they will make dynamic adjustments according to the recovery of demand. They expect to control the yearly growth of bit supply at a level of around 20%, which is slightly lower than the annual growth of bit demand. WDC is similar to Kioxia in terms of process. Their 236L (BICS 8) products have entered the stage of product commercialization, and they aim to introduce the products before 2023 ends. Further, the process for 162L (BICS 6) products will be turned into a process of transition.

The industry has been facing the most severe oversupply in the market in the last 13 years. Therefore, Micron's revenue in NAND Flash products sharply reduced to USD 1.103 billion with a 34.7% slump in 4Q22. Micron was thus ranked the last in market share by revenue. Micron's quarterly bit shipments also decreased by 16% and the average unit price dropped by a rate around low twenties in a quarter. However, their inventory increased significantly. Looking forward to 2023, Micron believes that the bit demand of NAND Flash products will increase YoY by around 20% or less, and the industry can only solve the issue of oversupply at the fastest speed by maintaining the same level of bit supply as 2022. Micron has been significantly decreasing the utilization of chip factories, reduced capital expenditure and slowed down the transition of 232L products. However, the 232L Client SSDs were shipped as expected in 4Q22. Because of PC customers' strong demand for QLC Client SSDs, their percentage in shipments in a single season hit a new high. In addition, Micron has finished the verification process regarding the 176L QLC Enterprise SSDs with major customers. The product will be shipped successfully. Micron expects that bit shipments will be gradually improved in 2023, and this will facilitate the recovery of revenue from the bottom.

Affected by the continuous destocking implemented by customers and fierce competition in price, the SK Group only had a revenue of USD 1.756 billion with a quarterly decrease of up to 30.9% in 4Q22. However, operators commonly faced the difficult market downturn. This allowed the SK Group to have a slight decrease in market share by 1.4% and maintain their position at no. 3. In terms of bit shipments, consumer electronics had a higher proportion in SK Hynix's product portfolio. Moreover, the introduction of new smartphones supported the demand partially and the shipment of Enterprise SSDs was better than expected. Therefore, the bit shipment exceeded the maximum value in financial forecasts, rising by 6.7% QoQ. Looking into 1Q23, the SK Group estimates that bit shipments will decrease QoQ. In addition to the impact of weak demand in the low season, customers remaining cautious in terms of purchase is also a main reason. The Group expects the pressure in inventory to hit a peak in 1Q23 and the demand to recover in H2. In the aspect of processes, SK Hynix will invest resources mainly into the development of 238L products regardless of the sharp drop in capital expenditure. Nonetheless, they will not actively increase the output proportion of the product. The mainstream process remains to be 176L. Compared with SK Hynix's strong effort in production reduction, Solidigm's production capacity remains full. Their 192L Client SSD products will be released in 3Q23 as expected, but the company's share in the output can hardly rise before the end of 2023 as the capital expenditure also decreases, according to estimation.

Solidigm had a revenue of only USD 2.539 billion in 3Q22 with a 29.8% quarterly decline, making them the most impacted major operator. Their rank in terms of revenue in NAND Flash products also fell to no. 3. Not only the continuous low demand for PC and smartphone related products, enterprises reducing expenditure and entering the cycle of inventory adjustment were also the main factors that impacted Solidigm's performance in the sales of server products, for which the demand was relatively steady. In total, bit shipments of the SK Group were lower than the guidelines in financial statements of the previous season with a decline of 11.1%. Furthermore, the average unit price sharply fell by over 20%. The proportion of the 176L process in the overall output rose and the UFS 4.0 products were introduced in 4Q22. In addition, Client SSDs were sold via Solidigm while new products were added in Q4 2022. Finally, the R&D of 238L products had been completed. These products is expected to be put into mass production in the middle of 2023, which is slightly later than the estimated time made in the previous quarter. In Q3 2022, the SK Group actively promoted the Enterprise SSD products with a large capacity in the hope of increasing bit shipments. However, this was not enough to make up for the impact of the overall shipment downturn. As a result, the Group was rather not optimistic about the bit shipment in 4Q22; and so the shipment only remained at the same level as 3Q22. Facing the out-of-balance between the supply and demand, SK Hynix has announced an annual reduction of over 50% in the capital expenditure in 2023 in the hope of getting the industry back on the right track in 2023 by reducing bit supply. (Fig. 8)

Company	Revenue		Market Share (%)	
	2022Q4	QoQ (%)	2022Q4	2022Q3
Samsung	3,480.0	-19.10%	33.8%	31.4%
Kioxia	1,968.0	-30.5%	19.1%	20.6%
SK Group (SK Hynix + Solidigm)	1,755.7	-30.9%	17.1%	18.5%
WDC	1,657.0	-3.8%	16.1%	12.6%
Micron	1,103.0	-34.7%	10.7%	12.3%
Others	323.6	-49.0%	3.1%	4.6%
Total	10,287.3	-25.0%	100%	100%

Unit: Millions of US$

Note 1: 2022 Q3 - USD 1 = KOW 1,340.8; USD 1 = JPY 138.3
Note 2: 2022 Q4 - USD 1 = KOW 1,359.4; USD 1 = JPY 141.4

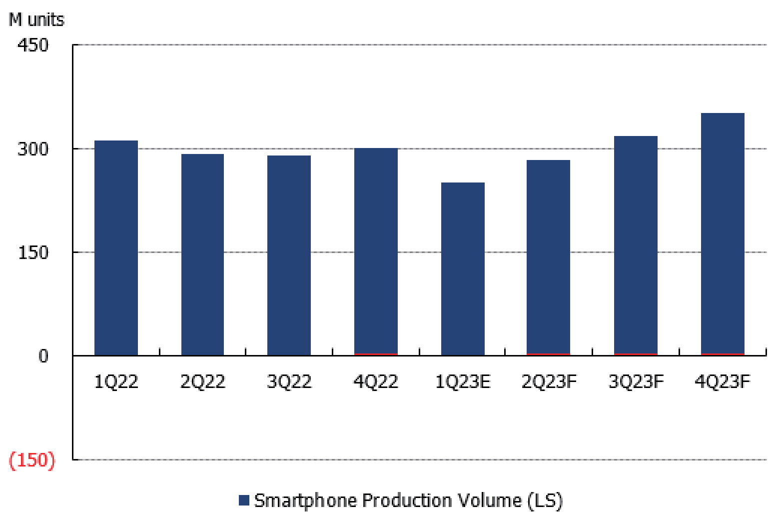
Source: TrendForce Corp., February 2023

Fig. 8 Q4 2022 global NAND 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.

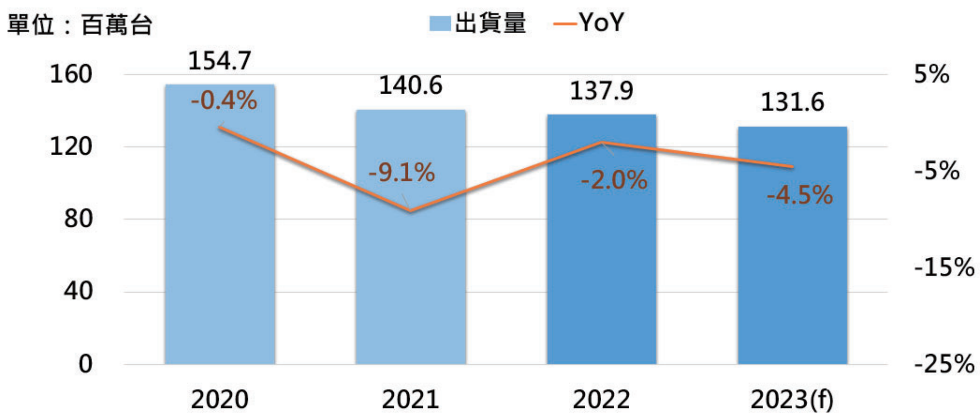
Smartphones: Global shipments of smartphones were 1.192 billion pieces in 2022 (Fig. 9) with a decline of 10.58% in comparison with 2021. The damage to the economy brought by the war and the strong rise of the US dollar can be seen in every market. There is no recovery momentum in the demand of Chinese, European and new markets, where damage is especially severe. In 3Q22, the restocking in high seasons was nowhere to be seen. The companies in the supply chain kept on clearing out inventory and held an extremely passive attitude toward the purchase of materials. However, the quantity of stock computers was much more than the number needed for a healthy inventory. On the other hand, 3Q22 was a high season for Apple to purchase materials. Consumers' expectation of the release of a new Apple smartphone compressed the intention to purchase high-level Android cell phones, making the market more depressed in overall. Thus, only 289 million smartphones were produced in 3Q22 in terms of production performance. There was even a decline of 0.9% QoQ compared to the traditional low season. In comparison with 2021, which had a higher base period, the decline rate even reached 11%. Looking at 2023, satellite and mobile network operators along with smartphone manufacturers actively deploy satellite communication for 5G smartphones. The 5G smartphones are expected to be shipped with a penetration rate that surpasses 60%. Moreover, brands are dedicated to reduce the price of foldable phones as well as making them thinner. With the improvement in key technologies with respect to panels, hinges and bearings along with the price reduction and specification update, the penetration rate of foldable phones may reach 1.8%. Further, smartphone manufacturers gradually cross the industrial boundary to compete and collaborate with automobile manufacturers by devoting themselves to the automobile-smartphone cooperative system and digital car keys. As a result, the penetration rate of applications concerning digital car keys will increase. With this and the post-pandemic recovery, in 2Q23, the outlook of the industry is positive and the inventory will return to a normal level. TrendForce estimates that the global shipment volume of smartphones will reach 1.202 billion with a 0.5% growth in 2023.



Source: TrendForce Corp., February 2023

Fig. 9 2022–2023F global smartphone shipment volume

Tablet: Impacted by the outbreak of the Russo-Ukrainian War, lockdowns in China, high inflation and the rise of the US dollars, the global economy declined in 2022. 35.46 million tablets were shipped in 4Q22, 42% of which were Apple's iPad. Moreover, around 80% of the shipped iPad were mainly 10.2" and 10.9" entry-level models and the 10.9" iPad Air. Non-Apple and white-box tablets accounted for 58% of the shipment with a volume of 19.49 billion in total. Samsung shipped 17.3% of these tablets, and the affordable smartphones of the Tab A series accounted for around 74% of Samsung tablet shipments due to their stable shipment volume. Lenovo's percentage in shipments fell to 8.7% even with the support of Singles' Day discounts and the advantage of PC channels in the Chinese market. Amazon's shipments fell to 6.6% due to a nearly 40% drop in the number of shipped 7" and 8" tablets as well as the high inventory in channels and slow destocking. Huawei provided discounts in physical and virtual channels (such as JD.com) on the Chinese Singles' Day and strove for plans with respect to specific education markets, maintaining their percentage in shipments at 4.3%. TCL's proportion in shipments rose to 2.7% mainly due to the release of new tables, which was combined with 5G-specific plans, in North America. In addition, Xiaomi and its sub-brand Redmi also had an increased shipment volume. According to the analysis made by DIGITIMES Research, 137.9 million tablets were shipped globally in 2022 with a decrease of 1.95% in comparison with 2021. In 2023, consumers will continue to suffer in terms of disposable income under the high inflation and interest rate. Brands also estimate their tablet shipments in a conservative manner. According to the comprehensive estimation on rands and supply chains made by DIGITIMES Research, the volume of global tablet shipments in 2023 might be 132 million, dropping by 4.5% compared to 2022. (Fig. 10)



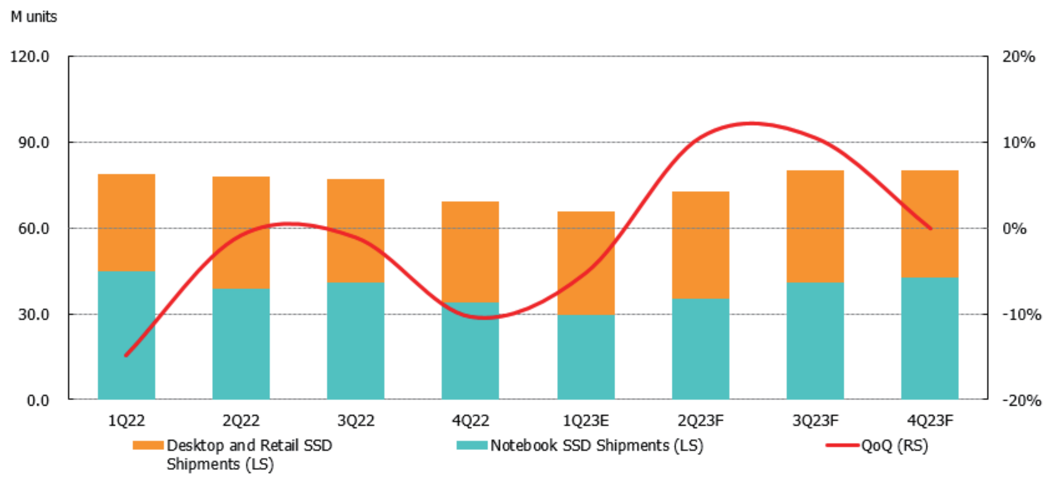
Source: DIGITIMES Research, January 2023

Fig. 10 2020–2023F global tablet shipment volume

Solid state disk (SSD): In Q4 2022, as the contract price of 512GB SSDs became close to that of 1TB HDDs, the sweet spot for SSDs to completely replacing HDDs had been quietly created. Thus, other than in some specific areas where HDD-equipped products might still be used, the percentage of SSD-equipped products of almost every NB brand rose to 93%. In 2023, the proportion of SSD-equipped NBs may further climb to 96% or more. In addition, manufacturers have further cut the price of 512GB SSDs in order to clear their inventory. As a result, the price of 512GB QLC SSD SSDs will be the same as 500GB HDDs in 2023. As SSDs have a higher price-performance ratio than HDDs, the percentage of 512GB SSDs in shipments may increase to 53%. The proportion of 1TB SSDs in shipments has soared because it has not been affected by the slump in prices. 1TB SSDs are the mainstream capacity for some gamers and high-level NBs (e.g. the Creator NB); other than that, the capacity of 512GB SSDs is enough to meet the needs of other NB designs. Hence, it is difficult for the installation of 1TB SSDs to significantly rise in consideration of the cost. In 2023, the proportion of 1TB SSDs in shipments is expected to be around 19%.

For product interfaces, the PCIe 4.0 interface is commonly supported by the platforms of Intel and AMD. Under this condition, the penetration rate of the PCIe 4.0 interface has been growing. Moreover, manufacturers have put more high-level QLC and Value PCIe 4.0 products into mass production, further increasing the shipment volume of PCIe 4.0 SSDs. According to TrendForce's survey, the manufacturers plan to mass produce PCIe 5.0 products in 2024. The production mainly focuses on high-level products, which means the penetration rate will hardly grow. A 6% proportion in shipments is expected in 2025.

As each manufacturer slows down the transition into 23XL products in 2023, the 176L SSDs will still be the mainstream of Client SSDs in H2 2023. Micron has started the mass production of 176L QLC SSDs, and SK Hynix will be the next company launching 176L products. Moreover, Solidigm might introduce 192L TLC SSD products in 2Q23 while Kioxia/WDC might release 162L SSDs in 3Q23 at the earliest. The mass production of QLC SSD products will have to wait until early 2024. Samsung has slightly delayed the mass production of 176L QLC SSDs. It is expected that the product will be sent to the customers for verification in Q2 2023. It is nearly impossible for the Chinese manufacturer YMTC to enter the non-Chinese NB brand market under the impact of bans in the US, so the consumer products of the company are unlikely to be seen in the supply chain for NB brand manufacturers in the future. (Fig. 11)



Source: TrendForce Corp., February 2023

Fig. 11 2020–2022F global Client SSD shipment volume

Products like Chromebooks and tablet-like NBs (such as Surface Pro, 2-in-1 NBs) experienced strong growth in 2021, but their shipment volume fell to 6.275 million with a quarterly decline of up to 50.59% in 3Q21. The fall continued afterwards. In 2022, 14.241 million Chromebooks were shipped. HP and Acer led the market share by sales in Q4, having a proportion of 28.5% and 19.9% respectively. In comparison with the low momentum in the consumer market concerning NBs, the momentum of Chromebooks has stopped decreasing and returned to the normal track before the pandemic outbreak in 2020. High-level Chromebooks are also dynamic in terms of sales; their sales are expected to grow in 2Q23, mainly driven by the needs of replacement in the education market. It usually takes more than 5 years to replace general NBs. On the other hand, Chromebooks for Education are mainly tender products with lower costs. Moreover, they have different materials than general NBs and the users are mostly pupils, who use NBs differently with adult consumers in average. These can shorten the time for replacing Chromebooks for Education. For instance, the Chromebooks purchased in 2020 have lasts for 3 years, meeting their replacement time. After the pressure of destocking end products is solved and the inventory gradually returns to a healthy level in 2023, the demand for Chromebooks is expected to be one of the first to recover in Q2. The traditional regular growth momentum might return to the market, and the shipment volume will slightly increase from 14.44 million in 2022 to 16.2 million. (Fig. 12)

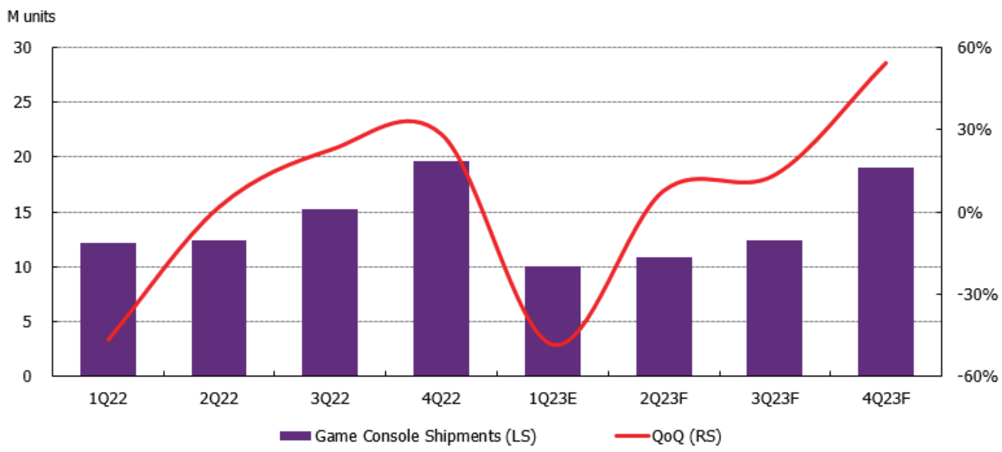
Brand	2022 shipment volume	2022 market share	2021 shipment volume	2021 market share	YoY
Acer group	4.2	22.0%	6.4	17.3%	-33.8%
Dell	4.1	21.3%	5.4	14.6%	-24.3%
Lenovo	3.7	19.5%	8.2	22.3%	-54.4%
HP Inc.	3.5	18.4%	10.2	27.8%	-65.6%
ASUS	1.3	6.8%	1.6	4.5%	-20.9%
Others	2.3	12.0%	5.0	13.5%	-53.8%
Total	19.2	100%	36.9	100%	-48%

Source: IDC, February 3, 2023

Fig. 12 2022 shipment volume and market share of Chromebook brand manufacturers

After the outbreak of the COVID-19 pandemic, the stay-at-home lifestyle for preventing the pandemic brought prosperity to the gaming industry, which was rarely seen, in 2020. The new-generation game consoles launched by Microsoft and Sony in the same year also boosted the gaming industry. Though the after-effects of the global chip shortage and chaotic supply chains in 2022 continued, the industry had progressively recovered at the end of the year. For the annual sales volume of game consoles, a total of 4,804,546 units of Nintendo Switch series were sold in Japan in 2022, which was 14% less than in 2021 (5,579,127 units). This was the second consecutive year in which the sales volume declined as well as the first time it falls below 5 million in recent 3 years. However, Nintendo Switch continued to be the champion in the Japanese gaming console market for six consecutive years. Not only that, its annual sales volume was four times compared with its competitor, the Sony PS5. The product ranked no. 2 in sales volume was the Sony PS5 series consoles (launched on November 12, 2020). In 2022, the sales volume of PS5 in Japan surpassed a million and reached 1,154,054 units with a significant growth of around 20% (a 19% surge) in comparison with 2021 (968,185 units). On the other hand, 269,737 units of the Microsoft Xbox Series X/S (launched on November 10, 2020) were sold. This was up to 1.8 times more (a 177% surge) compared with 2021, in which 97,234 units were sold. Finally, the sales volume of Sony PS4 declined annually by 78% to 22,823 units while the Nintendo 3DS series consoles had a yearly decrease of 63% to 10,449 units.

Though the launch of the Microsoft Xbox Series X/S and the Sony PlayStation 5 created a trend that had people scrambling to buy the consoles, the pandemic has been proved to be a double-edged sword. Lockdowns as a pandemic response disrupted logistics and caused shortage of important components, making it difficult for consumers to buy the new consoles both online and in physical stores. Later, the prospect of the gaming industry worsened due to the lingering bottleneck in the supply chain and rising inflation caused by the Russian invasion of Ukraine. The increase in price created more pressure in life and possibly reduced consumer buying power. Still, the performance in 2022 turned out to be better than that before the pandemic. As no modified Switch model will be introduced in 2023, the sales of Switch consoles continued to decline. Offsetting the sales growth of PS5 and Xbox consoles partially, the sales volume of Switch increased to 48.24 million with a growth rate of just 5.65%. (Fig. 13)



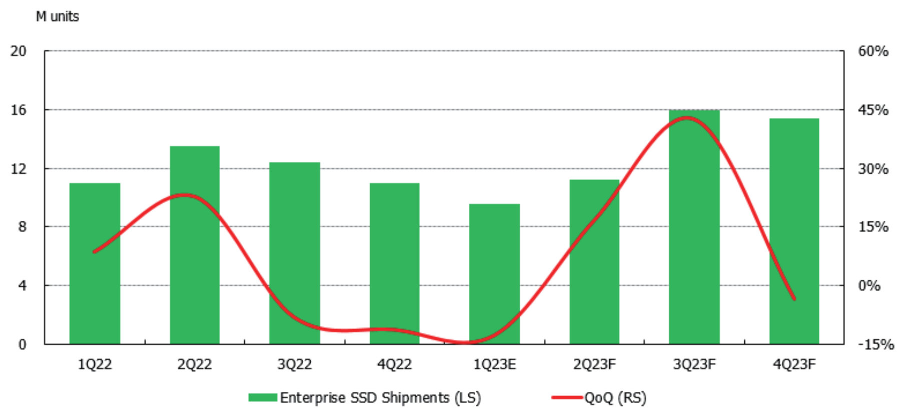
Source: TrendForce Corp., February 2023

Fig. 13 2022–2023F global game console shipment volume

The application of the Enterprise SSDs (generally meaning SSDs installed in servers) has continued to grow steadily (Fig. 14). As demand for equipment related to cloud computing, cloud storage, e-commerce, high-speed video streaming, live webcasting, AI, 5G and edge computing keeps expanding, suppliers have sped up the R&D of Enterprise SSD products in succession to enter the next process level. Assisted by a substantially increased quantity of the AMD Milan and the Intel Ice Lake shipments, the shipment percentage of PCIe 4.0 products surged in 2022 and expectedly surpassed 40%. Looking at 2023, both Intel Sapphire Rapids and AMD Genoa support PCIe 5.0; however, it will be difficult to widely install PCIe 5.0 in 2023 because the new platform has not been equipped with the PCIe 5.0 SSD at the early stage of mass production. Furthermore, the current quotation of PCIe 5.0 is 15% to 20% higher than that of the PCIe 4.0 products with the same capacity. According to TrendForce’s estimation, the shipment percentage of PCIe 4.0 products might exceed 60% in 2023 whereas that of PCIe 5.0 products only reaches 6%. It is expected that PCIe 5.0 will not outsell PCIe 4.0 products until 2025. Samsung and Solidigm are still the major suppliers of PCIe 4.0. They have been the business partners for verifying the Intel Ice Lake and AMD Genoa at an early stage, so the suppliers that come later cannot receive too many orders. Moreover, almost every customer in North America gives priority to Samsung and chooses them as the major supplier due to their advantages of flexible pricing strategies and a full range of products. As a result, other suppliers cannot increase their shipment volume much.

On the other hand, SK Hynix has received the results of acquiring Solidigm, who now uses SK Hynix's 128L TLC products and sends them to customers for verification. Therefore, the shipment of SK Hynix's products might rise QoQ in 2023. Solidigm also plans to promote the applications of SK Hynix's 176L TLC products in the second half of the same year. Additionally, Kioxia finally sees growth in shipments of PCIe 4.0 products. They will need to observe whether opportunities of collaborating with server OEM customers can be increased with the new-generation PCIe 5.0 and OCP products in the future. As for WDC, they continued to expand the shipment volume to the single customer in North America in H2 2022; nonetheless, the products shipped were mainly PCI 3.0 products. As the demand for the PCI 3.0 sharply decreases in 2023, their product line needs further improvement in comprehensiveness.

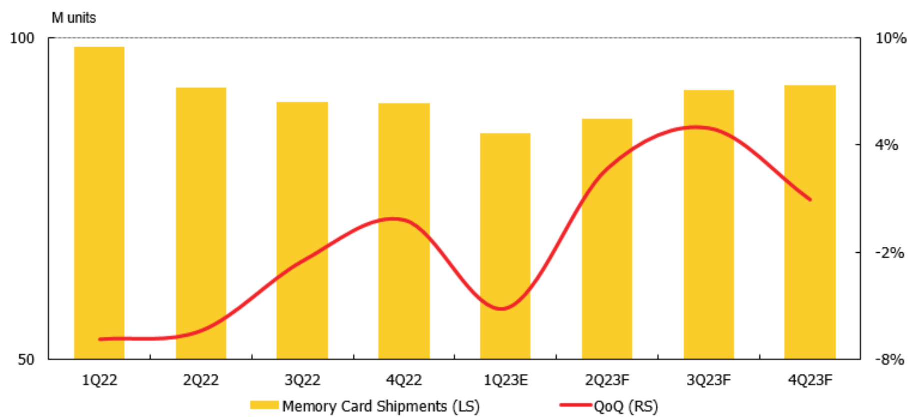
For storage-specific applications, the customers in North America are still verifying the 16TB products. As AI/ML services stay strong, the SSD volume required for high-speed computing continues to rise. Further, 32TB products might be verified in North America starting from H2 2023. In the coming years, with the rise of AI services and the increasing demand for high-speed access and computing, Enterprise SSDs will have more orders than other products. According to TrendForce, the bit demand of Enterprise SSDs might make the product the biggest NAND Flash application in 2025.



Source: TrendForce Corp., February 2023

Fig. 14 2022-2023F global Enterprise SSD shipment volume

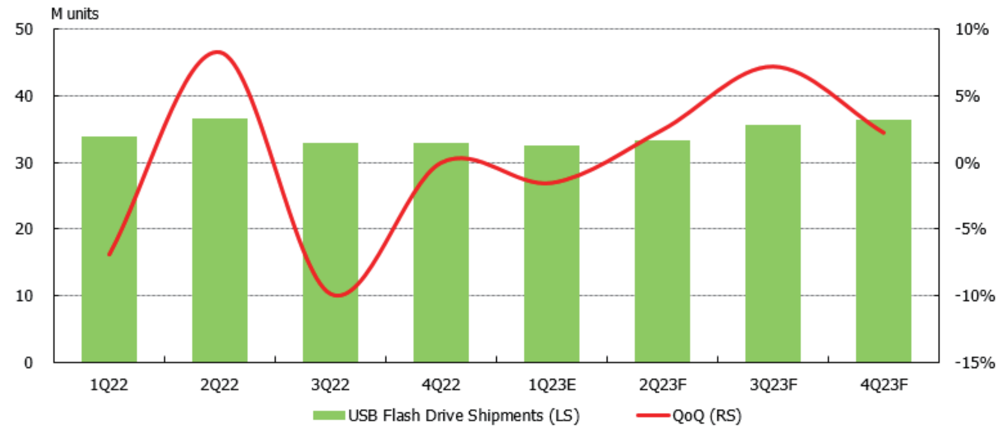
Memory card: The average storage capacity of memory cards increased as the trend of upgrading camera devices such as smartphones to high resolution continues and the storage demand of images rises. After QLC products are introduced, the unit cost per GB can be reduced and memory cards with high speed and a large capacity can be spread faster. In 4Q22, shipments of memory cards still had a slight quarterly reduction, but the average capacity increased to some degree. For the percentage of the mainstream capacity, 64/128GB products are still dominant. In the future, products with 128GB or more will gradually take the leading position. On the other hand, the percentage of 32GB products or below fell under 20% at the end of 2022 and will continue to reduce. Meanwhile, embedded applications have been common in the overall NAND Flash market and their average capacity has stably increased. Therefore, the memory card market will maintain a percentage of 5% to 6% in overall NAND Flash consumption. (Fig. 15)



Source: TrendForce Corp., February 2023

Fig. 15 2022–2023F global memory cards shipment volume

Flash drive: As the performance of products at the consumption end including PCs became weak, the shipment volume in 4Q22 remained the same as the previous quarter, and the inventory was also maintained at a high level. In terms of transmission interface specification, the market share of USB 2.0 further decreased but remained above 50%. Under the condition of disappointing sales of consumer electronics and the trending of cloud data storage, the specification upgrade of USB can hardly facilitate the penetration rate. The USB 4.0 products still had no significant proportion in 2022. TrendForce estimates that in 2023, shipments of USB products will only increase by 1% compared with 2022, and the specifications above the USB 3.2 will account for no more than 50%. (Fig. 16)



Source: TrendForce Corp., February 2023

Fig. 16 2022–2023F global flash drive shipment volume

Automobile market: The environmental protection and carbon reduction policies around the world have stimulated the fast development of electric vehicles (EVs). As the demand for high-speed computing rises, the memory capacity of electronic products has also significantly increased. In terms of market size, 2022 saw global EV (BEV plus PHEV) sales surpass ten million units for the first time; 10.8 million units were sold and the annual growth rate reached 62%. China accounted for as much as 63% of global market share, and the proportion of EVs in sales exceeding 50% will occur in 2030 or earlier, which is sooner than expected. This will bring enormous challenges to the traditional automobile companies around the globe.

Not only does the electrification in the global automotive market create revolutionary waves, “intelligentization” is also an irreversible trend. Intelligent cockpits, the L2+ intelligent driving assistance and even human-machine interfaces using speech will be the keys of the competition between automobile companies in 2023. Traditionally, automobile companies believed that making the product “luxurious” could increase its value. However, as AI technology improves, the importance of being “luxurious” has decreased. In 20 years, the automotive industry will change its nature with the development of AI and energy (battery) technologies as the core. The goal is to become a traveling platform where every user, including young people, elders, skilled drivers and learners, can enjoy the same using experience.

The statistics of a research and survey agency show that the numbers of DRAM and NAND chips required for fully self-driving cars are 30 and 100 times respectively compared with the traditional cars. As long as the R&D of self-driving cars continues, the demand for memories will explode. In another aspect, the increased penetration of ADAS and the upgrade of autonomous vehicles along with the rising demand of automotive computing speed will facilitate the growth of memory consumption. Between 2021 and 2027, the market size is expected to grow at a 20% CAGR; in comparison, the sizes of the automotive semiconductor, the overall memory and semiconductor markets will only increase with a CAGR of 10%, 8% and 6% respectively. As a result, the proportion of automotive memories in the overall automotive semiconductor market will climb from 10% in 2021 to 17% in 2027. According to Micron's estimation, in 2025, the DRAM and NAND bits in the automotive market will increase by 40% and 49% (both YoY) respectively.

In addition, the survey agency Yole Intelligence points out that there are special requirements for the quality, compliance, reliability, functional safety and continuous supply of automotive parts and components. In the past, the highly reliable and EEPROM (durable electrically erasable programmable read-only memory) and NOR Flash products were mostly used as automotive memories. However, the automotive memory market have significantly changed with the use and penetration of functions such as intelligent cockpits, ADAS and AD. In 2021, the percentage of NAND and DRAM products in the automotive memory market was 39% and 41% respectively; the NOR Flash accounted for 15% while others, including EEPROM and ROM, held 2%. In comparison, NAND and DRAM products owned a total of 96% of the overall memory market in the same year, whereas the NOR Flash had slightly more than 2%. The proportion of NAND and DRAM products in the automotive memory market will expectedly climb to 26% and 63% in 2027. On the other hand, the share of the NOR Flash as well as EEPROMs and ROM will drop to 10% and 0.7% in sequence. Automotive cockpit systems with major information and entertainment units, instrument clusters and network connection will still be the most important field for applying automotive memory. (Fig. 17)

The ADAS and AD is the second largest market of automotive memory applications. The application market not only focuses on the DRAM and the high-density NOR Flash, but also includes the SLC NAND that can be used with smart sensors. This is also the fastest growing automotive memory market, which size will expectedly climb from 24% in 2021 to 36% in 2027. Other applications including powertrains, chassis and bodies are equipped with rugged memory products such as EEPROMs and the NOR Flash because they mostly require the memories that meet stricter limitations.

In terms of memory manufacturers, Micron is currently the largest manufacturer of automotive memories in the world. They occupy around 45% of the overall automotive memory market size, followed by Samsung Electronics, which has 13%. Other manufacturers including Infineon, Kioxia, SK Hynix and ISSI fall behind Samsung, accounting for 7% in total.

Year	DRAM	NAND	NOR	SRAM/FRAM	EEPROM and ROM	Other
2021	41%	39%	15%	2%	2%	1%
2027F	63%	26%	10%	0.5%	0.7%	0.3%

Source: Compiled with reference to news reports

Fig. 17 2021-2027F Estimated proportion of each automotive memory market in sizes

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. The production of the 92/96L products will be reduced every quarter to no more than 10% at the end of 2023 as estimated. The 1XXL and 1YYL products will be dominant in 2023, having a percentage of 70% to 76% in total. In the second half of the year, the focus will shift to the 1YYL, which will account for an expected proportion of about 37% in 4Q23.

i. Samsung currently focuses on the 128L (V6), which has an around 34% of output. The 236L (V8) is expected to be slowly put into mass production in H2 2023 and have a proportion of about 13% in the output.

ii. The mainstream product of Kioxia/WD in 2023 will be 112L (BiCS5) products. At the end of the year, the output percentage may reach 45%; furthermore, the 162L (BiCS6) is expected to be launched. In 1Q24, the estimated percentage of the BiCS6 in the output will be lower than 5%.

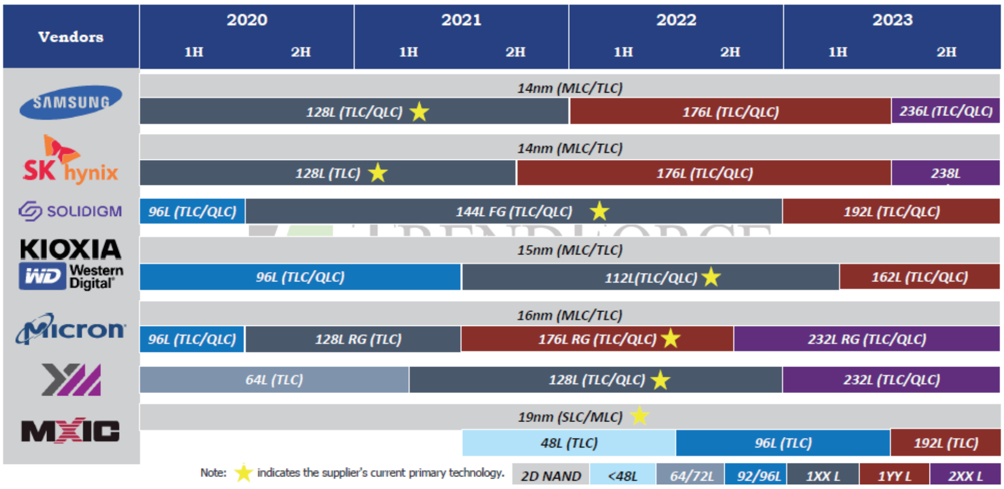
iii. For SK Hynix, 128L (V6) and 176L (V7) products will have a percentage of over 70% in the output, and the 238L (V8) will have about 6% as estimated.

iv. The 176L (B47R) will be the mainstream of Micron in 2023, having over 50% of the output of the year. Additionally, the percentage of the next-generation 232L (B58R) in the output is expected to reach 26% in 4Q23.

v. Solidigm (the NAND Flash business sold by Intel to SK Hynix) sets the 144L as the mainstream output in 2023, which will account for about 60%. The next-generation 192L products will be produced in 1Q24 with a proportion of around 2% as estimated.

vi. For YMTC, the development of their 232L (X3-9070) has been affected by the ban on semiconductor issued by the US. Hence, in 2023, the 128L (X2-9060 and X2-9070) will be the focus of development and book nearly 80% of the output. As estimated, the output percentage of the 232L will fall to 7% in early 2024 due to the limitations.

(For 18 description of the 2D/3D product technologies of manufacturers, see Fig. 18).



Source: TrendForce Corp., December 2022

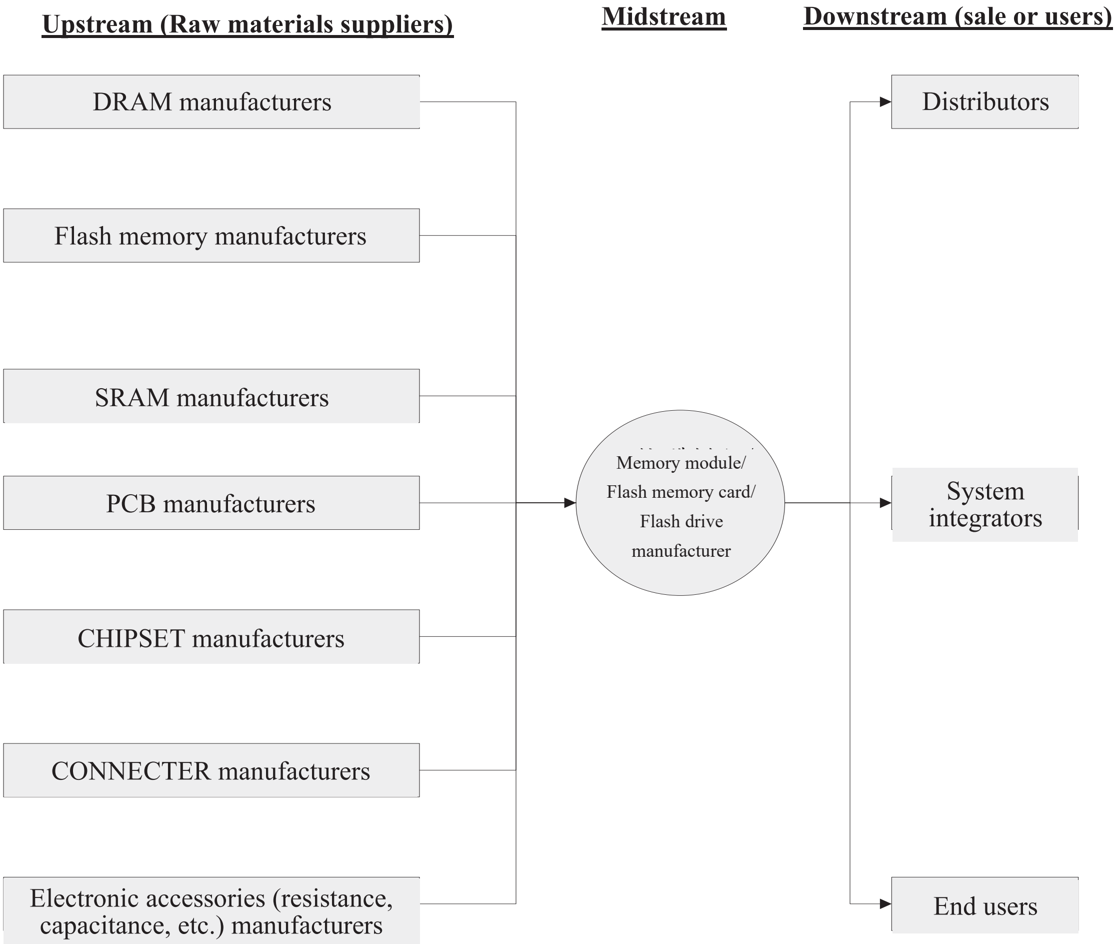
(Fig. 18 NAND Flash 2D/3D products technologies of manufacturers)

(b) Industry supply and demand development

Though Samsung and YMTC had increased their production in 2022, the growth rate of the overall production volume (12") in Q4 still fell to -3.6% because Kioxia and Micron slashed their production at a relatively high rate. From a bit output perspective, the percentage of the TLC, QLC and products with more layers had risen quarter by quarter, so the bit output still had a growth of 3.8% QoQ. In terms of the whole year, the annual growth rate in 2022 declined to 29.8%.

According to TrendForce's analysis and observation on the performance regarding layers, Micron, SK Hynix and Samsung had increased the shipment of 176L products in succession. This stimulated the percentage of the 1YYL to grow to 26.5% at the end of 2022. As Micron's output percentage slowly rose, the 232L products had a proportion of 1.9% in the overall NAND Flash output. From the perspective of the product structure, TLC products held 88% of the output while QLC products had 10%. In 1Q23, the destocking in supply chains continued as Q1 was the traditional low season. Therefore, the inventory momentum was low and not many orders can be expected in short future. However, suppliers except for Samsung have slashed their production, so the output from wafers to finished products will decrease and expectations of a price drop in the market can be lowered. It is estimated that the decline rate in prices will narrow.

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



C. The development trend of each product

(A) 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 CPU functions strengthened, the memory specification was mainly DDR4, and officially entered the generation of DDR5 in 2022. However, the penetration rate fell short of expectations because the price was still high and the launch of relevant CPUs and platforms was delayed. In 2023, as the price becomes closer to DDR4 and the platforms gain popularity, the DDR5 is estimated to surpass the DDR4 in penetration rate and become the mainstream in the market. At the same time, the mainstream capacity of DDR4 chips will transition 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 smartphones. The DRAM capacity of many models has increased from 6GB to 8GB or even 12GB.

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. The transmission speed of the DDR5 has doubled from the DDR4 with a soaring starting speed of 4,800 MT/s and a top speed of 6,400 MT/s. (Fig. 19)

	DDR5	LPDDR5	DDR4	DDR3
單顆粒最大密度	64 Gbit	32 Gbit	16 Gbit	4 Gbit
最大 UDIMM 容量	128 GB	N/A	32 GB	8 GB
最大傳輸率(速度)	6.4 Gbps	6.4Gbps	3.2 Gbps	1.6 Gbps
記憶體通道數	2	1	1	1
位元寬度 (非 ECC)	64-bits (2x32)	16-bits	64-bits	64-bits
每 Group 的 Bank 數	4	16	4	8
Bank 的 Group 數	8/4	4	4/2	1
爆發長度	BL16	BL16	BL8	BL8
電壓 (Vdd)	1.1V	1.05V	1.2V	1.5V
電壓 (Vddq)	1.1V	0.5V	1.2V	1.5V

Source: JEDEC, Institute for Information Industry

Fig. 19 Comparison of DDR specifications

(B) the development trend of flash memory

a. The pandemic brought a rising demands for cloud services . The total bit demand of the Enterprise SSD increased along with the substantial growth of the shipment volume and average capacity of servers. Consequently, Enterprise SSD continuously created higher percentage in the NAND Flash category. In the post-pandemic era, the bit demand of the Client SSD declined significantly due to the declined shipment of the notebooks. However, thanks to the dramatic price drop of the NAND Flash, the NAND capacity and the average Enterprise SSD capacity in smart phones may increase by more than 20% annually in 2023.

b. In addition, as the merging AI services in the coming years, the development of the AI industry will stimulate the demand for high-speed access and computing and Enterprise SSD will have more orders than other products. For example, the “ChatGPT” introduced by OpenAI, a startup company, to the market in November 2022 attracted the eyes of the people all over the world. As TrendForce estimates, the bit demand of the Enterprise SSD is expected to make it the greatest application in the NAND Flash category by 2025.

c. As the demand for memories slows down, upstream manufacturers are suffering significant loss. The price of the NAND Flash continued dropping down below the cost in 2023 Q1. Correspondingly, the price difference between the cellular phone and storage capacity may be narrowed and the storage capacity in end applications is expected to rise rapidly. In addition, the upgraded photographing function of new cellular phone and camera to store more and bigger photos and images, and the need for upgrade of games, software applications or systems will make 1TB the mainstream of flagship mobile phones more quickly. Since Apple does not have the plan to design foldable iPhone products the coming years, 1TB in combination of a foldable screen will be the new fashion of the Android flagship phones. As expected, mobile phones in conjunction with 256GB and 512GB capacity will be the mainstream and the big capacity of 1TB will become a substantial trend in the second half of 2023.

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

(3) Techniques and research development status

A. 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	2021	2022	As of 31 March 2023
R&D expenses	138,947	165,679	40,381

B. 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 problems, such as the firmware technology for quick backup and restoration of the entire system. Based on trends in the development of storage interfaces, we are 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 186 approved patents for our products in Taiwan and other countries. 49 patent applications are currently pending.

C. R&D outcomes

Year	R&D outcomes
2022	1. **100K wear-leveling 3D NAND SSD:** The industrial control wide-temperature 3D NAND SSD achieves the highest 100K P/E cycles in the industry, about 33 times more than traditional flash memories. This can satisfy the applications, such as collection of a great amount of data and smart analysis, and can achieve the durability and cost efficiency in the 5G and AIoT applications. 2. **DataDefender™ PCIe Gen4 x4 SSD**: The industrial-grade PCIe Gen4 x4 SSD is the first choice for smart medical and emerging 5G applications, and can provide doubled band width and data transmission rate. We develop Signed Firmware protection technology. With the support of the AES 256-bit hardware encryption design, the technology can effectively protect the privacy of the patients, data, records, etc. from being exposed to the threat of

Year	R&D outcomes
	improper access. The End-to-End Data Protection and DataDefender™ technology can increase the integrity of the data during power failure. 3. **Smart upgrade to a dual application of care and environmental safety fields:** The AIoT team promotes the evolution of the disaster prevention applications and smartly upgrades them to a dual application of care and environmental safety fields. Eight smart solutions suitable for specific locations and natures are provided for long-term care fields, while the “Active Smart Disaster Prevention System” designed for the machine room, kitchen and other fields of high fire risk can effectively eliminate potential fire problems. The AIoT team is specialized in the application of IoT technologies to prevention and monitoring of disasters and improve the safety in the field. It has the advantage in the planning and deployment of comprehensive environmental control solutions for nursing institutions and factories. 4. **ZADAK SPARK RGB DDR5**: Apacer (8271) introduces PARK RGB DDR5 desktop gaming luminescent memory under the brand ZADAK. It is supported by a power management chip to ensure the system can maintain high stability and efficiency all the time. In addition to the Intel® XMP 3.0 overclocking technology, the product supports On-die ECC error correction function to improve the system stability and the correctness of the data. With hairline and white matting texture finishing, the product presents a premium aesthetic design in the gaming world. 5. **JEDEC Raw Card Revision 1.0**: Apacer takes the lead in the industry to offer the industrial-grade DDR5 UDIMM., SODIMM, RDIMM, ECC UDIMM and ECC SODIMM under the JEDEC Raw Card Revision 1.0, and is the first memory module company in the industry that has the ability to make mass production version of DD5. We expect to have more competitive advantages than the competitors and will speed up the comprehensive DDR 5 applications in industrial control, continue to invest more resources in the applications of AIoT, servers, data centers and high-performance computing. In addition, we apply SPD Write Protection technology to the industrial-grade DDR5 memory series to minimize the risk of downtime when SPD data are deleted and meet the requirements for the reliability of the system on the industrial control market. 6. **Audio, Video and Gam M.2 PCIe SSD**: Apacer’s AS2280Q4U M.2 PCIe SSD is designed for video and audio creators and top-class game players. This product uses the latest PCIe Gen4 x4 extreme speed interface and has 7,400 / 7,000 Mb/s super-high performance. The quality metal cooling fins can lower the temperature effectively to maintain the best read and write performance. The size, reading and writing speed, and support capacity are designed in line with the PS5 expansion specifications and helpful in expanding the space of the computer. 5-year global warranty is provided for the full product series. They are undoubtedly the premium choice for game players and audit and video creators to expand storage capacity. 7. **Working with ASUS to build cloud IPC architecture:** Apace works with ASUS Cloud to integrate our unique and patented CoreSnapshot one-second backup and recovery SSD firmware technology using ASUS OminStor enterprise storage cloud to provide IPC-based industrial control system with information security protection solutions. The integrated technology has been successfully tested and introduced to a leading packaging manufacturer. We are dedicated to set up cloud equipment management of high efficiency, system information security protection, defense from virus threats, and instant monitoring and rescue for smart factories. The automation solutions can effectively reduce the threats brought about by shortage of manpower and chain infection in big intranet environment to the smart manufacturing industry. The problem of waiting for personnel to come to the site and remove the failures of the production lines can be solved by applying CoreSnapshot remote monitoring and redundancy technology as a substitute to create higher operating efficiency. 8. **AIoT care field solutions**: Apacer’s AIoT team develops the customized “Total Smart Care Planning and Setup Service” for senior housing and day care centers. It is comprised of two systems of personal safety and environmental security. With the former as the core supported with our experience in care fields, we provide the solutions including “non-contact fall/physiology sensing”, “emergency call and remote reporting”, “reporting of using toilet or bathroom for long time”, and “reporting of outgoing without returning home”. Monitoring and detection 24 hours a day is possible without the need of any

Year	R&D outcomes
	cameras to protect the privacy of the elderly and ensure their comfort. 9. **CoreAnalyzer2 rugged edge computing:** We use the CoreAnalyzer2 technology to master the writing features for end customers and speed up the mass production schedule of the computer system. Also, we use the SLC-liteX technology to provide up to 100,000 P/E cycles. With the support of the SSD product series that has passed the eight test standards of the U.S. Department of Defense (DoD) to sure their compliance with the highest military specifications (MIL-STD), the technology guarantees the highest durability in the industry that can substantially enhance the life of the computing system, reduce the loss of critical data or the risk of abnormal shutdown. 10. **PANTHER RGB DDR5**: We recently offer the customized PANTHER RGB DDR5 desktop gaming memory for game players. Inheriting the tradition of the PANTHER series and manifesting the lines designed with the inspiration from the claw marks of the cheetahs, the product uses the special ultra-wide angle RGB light diffusion technology to create the unique RGB colorful light. The premium aluminum heat sink that has the outstanding cooling effect can effectively reduce the temperature and maintain the best reading and writing performance. The product uses the carefully selected game-grade DRAM IC dies and supports Intel® XMP 3.0 and AMD EXPO™ that enable one-key overclocking operation. The product has received software certifications from major motherboard manufacturers, including ASUS AURA sync, GIGABYTE RGB Fusion, MSI Mystic Light Sync and ASRock Polychrome Sync. It can easily control the RGB memory lighting effect and support synchronization with the system lighting. 11. **Rugged industrial-grade SSD**: A rugged industrial-grade SV250 SSD series is provided for aerospace and national defense applications. To meet the requirements in the demanding space environment, we develop an unique firmware technology to protect SRAM and NAND data on SSD from errors due to Radiation. The product can identify abnormalities and start the abnormality removing function automatically to maintain and restore normal operation of the SSD. 12. **FIPS140-2 data encryption and authentication SSD**: In response to the development trends of 5G, AIoT, edge computing, and high-performance computing applications, we develop and introduce FIPS(Federal Information Processing Standards) 140-2 data encryption and authentication SSD storage solutions. Federal Information Processing Standards (FIPS) are established by the U.S. Federal Government and applicable to military agencies, government agencies, and government contractors. FIPS 140-1 provides a verification standard for the effectiveness of encryption module products. The Apacer (8271) SV240 series has received the certificate. It contains four products of 2.5, M.2, MO-300 and MO-297 and can satisfy the platform and capacity requirements of the market. 13. **Rugged SSD series for national defense**: We introduce the rugged industrial-grade SATA and PCIe SSD. The SV24D and PV22D series for national defense applications is manufactured with genuine new-generation 112L BiCS5 3D TLC industrial wide-temperature dies of ultra-low latency and high endurance. It has passed the eight standards that are established by the U.S. Department of Defense (DoD) for assessing the compliance of specific equipment with the reliability and durability required by the highest military specifications (MIL-STD) in different simulated harsh environments. To ensure secured data access and protect confidential data, we develop total cutting edge information security protection technology to protect software, hardware and firmware, the SV24D and PV22D National Defense Series SSD supports Instant Keychange™ and is capable of destroying the original key and creating a new key within one second by triggering the hardware or software command based on the encryption & decryption algorithm. The sensitive data cannot be read once the system enters the emergency state. The SSD supports MIL-Erase technology to provide the highest and completest protection and ensure that confidential data are cleared instantly and completely in emergency situation and can never be recovered. 14. **iKeeP QuizSlide**: We are dedicated to the research and development of new technologies continuously and provide iKeeP QuizSlide with patented conductor-bridged touch buttons in the e-paper field. There are three versions available for the users to choose from, including the basic level, junior high level and senior high level. With word card learning as the concept of design, iKeeP QuizSlide has become the first handheld digital carrier with an electronic paper screen in the market. Based on the structure of the first-generation iKeeP

Year	R&D outcomes
	QuizSlide, we improve the software and hardware function by developing different functions including voice function, touch function, charging mode and e-paper upgrading assessment. The upgraded iKeeP QuizSlid privides a bigger screen for users and improve their reading experience. 15. **4TB Gen 4 x 4 SSD**: Apacer responses to the development trends of 5G, AIoT, edge computing, high-performance computing and gaming. In this era where people pursue high-speed networking and high-performance processing, how to achieve rapid data processing and storage has become a great challenge. Long devoted to the technology of SSD application for the industrial market, Apacer provides reading and writing speed up to 7000/6000 Mb/s for the PCIe Gen 4 x 4 SSD, and supports a capacity up to 4TB which satisfies the application needs of the market for high performance computing, etc. 16. **Automated inspection system and optical inspection solution**: To embrace the waves of Industry 4.0 and the plants' digital transformation, Apacer (8271) aggressively develops in the field of intelligent IoT. In terms of the development in the automated inspection system of panel industry, we have launched a series of solutions for new optical inspection. Solution 1: AL250 VNIR spectrometer, which is comprised of a CMOS image sensor and a 32-bit RISC microcontroller. Solution 2: Ai30S 3-in-1 spectral irradiance meter supporting three measuring modes, which can be widely used for the application needs of LED, commercial lighting and agricultural lighting to measure the illuminance and irradiance. Solution 3: Dynamic adjustment of light collection by stroboscope, with which a circuit that can dynamically adjust the range of light collection is designed to increase the receiving range of light signals improve the receiving range of the circuit is enhanced from 100~10000lux to 10~200000lux. Solution 4: New-gen low power optical sensing solution, which is combined with a low-power microprocessor to provide users with longer use time and fewer heat producing components. The microprocessor has a built-in basic algorithm and a data processing solution. Even a single machine can perform measurement for a long period of time. The automated optical inspection devices can be integrated with our exclusive optical instruments recognized by the Taiwan Excellence Awards to significantly increase the range of inspection through the complementarity of spectrometer and CCD lens. Also, the three-axis or five-axis automation that can be widely used for panels of varying sizes is provided if needed by the factories. In addition, we have been contributing to the biotech and pharmaceutical industry as well. We continuously develops automated inspection machines applicable to containers of different types and sizes, including the IV infusion bottle, horizontal bottle, injectable powder vial, ampoule, etc. These machines are able to find out the bottle defects such as flaws on the external appearance, foreign materials inside, or abnormal liquid level in a fast and effective manner. The cases of practical application show that the machines have successfully reduced 50% of the inspection personnel for the pharmaceutical factories.

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

A. Short-term business development plan

With "becoming the top manufacturer in the integration of IT-enabled information services with digital storage as the core technology" set as the vision, the Company actively encourages the employees to realize the core brand value of "Becoming Better Partners", namely "Act on What We Say, Persist in Better Results, Develop Together with Partners", in order to build a corporate culture producing sustainable development momentum. To improve our competitive strength, we have promoted "three main kinds of business momentum" (focusing on key fields, deploying future technology, promoting digital transformation of the business) since 2022, and developed the fourth business momentum—forming alliances with the strategic partners—in response to the needs for growth. It is our hope to bring the greatest benefits to all stakeholders through the integration of the value supply chain. The following is a brief description of our strategic plans:

(A) Developing key fields to satisfy the demands for products

Regarding the important fields of information and communication, reinforcement of national defense, medical care and IoT, Apacer will carry on the market deployment in relevant industries and launch new products and value-added technologies, such as Transformed SSDs with memory module assembly that may be adjusted according to the customers' requirements, CoreSnapshot that supports remote memory management via cloud platforms, and CoreGlacier that helps reduce the temperature of products in use and provide cooling and extended performance. As the memory specifications evolve, we also intend to keep on promoting the penetration rate of DDR5 in different companies, and launch the PCIe Gen5 consumer products this year for users to have upgrade options at any time.

(B) Utilizing technology-based marketing for accurate and effective communication

In this era where users become indifferent to advertisements due to the overwhelming number of ads, a set of processes need to be devised to ensure the accurate communication with target audience. We have been running social media accounts in recent years, providing exclusive content on respective platforms based on different customer attributes, and developing customers' awareness of our brand through the exchange of messages. Further, we attract the target audience in specific markets via professional international exhibitions or forums in conjunction with corresponding marketing tools (e.g. keywords), and look for potential customers with data analysis and then reach them through our business representatives.

(C) Developing talents to accumulate growth capital

During these years of pandemic and downsizing, how to give employees a sense of security and recruit required talents have become important corporate issues. The Company has set up a talent supply chain system, starting with internal personnel training to cope with the need for required talents. The Apacer Academy was established under the training program launched in 2021, and the program is still ongoing. Within the Apacer Academy, we have designed different learning maps for sales marketing, products and R&D, and used various assessment and testing tools to assist in talent positioning and building our talent database for the purpose of reserving high-potential talents for our medium- to long-term objectives.

(D) Expanding overseas markets with strategic partners

With UD info becoming a subsidiary of Apacer in 2022, a dual-brand strategy is adopted for overseas marketing. We will leverage the business capability of UD info for market development in different fields, while also providing our considerable resources of R&D, customer services and procurement to support UD info. Moreover, we have made Acer become our strategic partner through private placement in the same year, in the hope of promoting our "Apacer" brand and enabling collaboration programs of greater diversity through its worldwide marketing channels and procurement strengths.

B. Long-term business development plan

In response to the international trends and the government agencies' growing emphasis upon the requirements for ESG (environment, social, and governance), Apacer changed the existing "CSR Committee" into the "Sustainable Development Committee" in 2021, and formulate ESG policies as well as setting annual objectives to pursue. Our strategies for long-term corporate development have been determined based on the four kinds of business momentum. The main focuses of our plan are described as follows:

(A) Continuing ESG investing to move towards sustainable operation

Regarding Apacer's Sustainable Development Committee, our Chairman and President act respectively as the head and executive secretary, and the secretariat takes charge of the sustainability-related affairs. The ESG Promotion Team and Risk Management Team have been established thereunder. The ESG Promotion Team covers five main aspects, which are corporate governance, employee care, environmental care, customer and supplier care, and community care. The team leader and members implement relevant plans to reach the annual targets set for these aspects, and report the work performance to the Board of Directors at the end of each year. As for the Risk Management Team, it holds quarterly meetings with each unit head in the organization examining the potential risks within their business scope, in order to ensure that the Company takes the potential risks of all aspects into account, develops strategies to respond to or reduce risks, and further achieves the goal of sustainable business operations.

(B) Focusing on key fields

In addition to the active development of gaming market for consumer products, we focus on seven key fields for industrial control, including national defense applications, factory automation, game of chance, medical care, IoT, servers and network communications, and transportation. By providing competitive products and value-added technologies, adopting manufacturing processes that conform with international standards and offering complete after-sale services, we are able to serve the customers with high demand for customization and thereby create high-value benefits of partnership.

(C) Deploying future technology

The Company has established the RD & Technical Center. Through prediction of technology development orientation by trend researches, we formulate short-to-long-term R&D plans and goals. Apart from the enhancement of specifications and technologies of DRAM and NAND Flash, we also continuously promote the value-added technologies that help increase operating benefits, and develop a "moat" with patent R&D to ensure our competitiveness in the market. Meanwhile, we actively recruit talents in digital storage and IoT integration fields to reinforce our R&D capability.

(D) Promoting digital transformation of the business

To achieve digital transformation, a company has to devote years of efforts and plenty of funds to the basic talent training, equipment update, software strength development, and so on. Apacer has progressively completed the introduction of fundamental systems such as ERP (enterprise resource planning), CRM (customer relationship management), MES (manufacturing execution system) and WMS (warehouse management system). We will make comprehensive plans based on the dimensions of integration, optimization and facilitation, and take data compilation and analysis as the reference for the planning of strategies or adjustment of directions, in order to support the improvement of operation efficiency in each unit.

(E) Forming alliances with the strategic partners

The Company completed the share exchange with UD info and the private placement with Acer in 2022, setting a new benchmark for annual operating performance. In the future, we will keep on looking for outstanding partners, creating ecosystems based on the strategy of forming alliances, and extending the benefits of partnership of the industrial value chain.

2. Market and production and sales status

(1)Market analysis

A. Sales region for major products

Unit: TWD 1,000

Region \ Year		2021		2022	
		Sales amount	**%**	**Sales amount**	**%**
Domestic sales		1,772,385	20.41%	1,825,755	20.75%
International sales	America	1,647,746	18.98%	1,237,247	14.07%
	Europe	1,996,269	22.99%	1,718,196	19.53%
	Asia	3,191,512	36.76%	3,924,433	44.61%
	Other	74,481	0.86%	91,404	1.04%
	Subtotal	6,910,008	79.59%	6,971,280	79.25%
Total		8,682,393	100.00%	8,797,035	100.00%

B. 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 2022 was 11.39%.

Unit: TWD 1,000

Name of Company	Net Operating Revenues	Market Share
Apacer	8,797,035	11.39%
ADATA	34,926,941	45.23%
Transcend	12,122,350	15.70%
Team Group	6,723,053	8.71%
Silicon Power	4,344,538	5.63%
Innodisk	10,303,229	13.34%
Total	77,217,146	100.00%

Source: All companies' 2022 consolidated or individual financial reports that have been certified by CPAs

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

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

a. Supply and demand status:

The sluggishness in the memory industry in 2022 to 2023 is caused by the shrinking of end markets instead of the excess expansion of upstream suppliers, and the constantly high inventory levels in all application fields is the primary challenge to be addressed. The players have different opinions on whether the market will show a U-shaped growth, V-shaped recovery or L-shaped depression during the adjustment period. If the macro economic outlook or global inflation hasn't worsened, the inventory adjustment of downstream OEMs will be the key indicator to observe. Whether such sluggishness will come to an end in the first half of the year will influence the recovery of market demands in the second half of the year.

The memory industry sees a prolonged downturn, with the challenge of oversupply in 2022 continuing in 2023. Due to the gloomy outlook and the reduced production capacity, the overall growth of DRAM bit supply might hit a historic low, which corresponds to the similarly low growth of bit demand in end markets.

As of the end of 2022, the inventory levels of both the upstream manufacturers and downstream applications of DRAM could generally last more than 10 weeks. The inventory might not be reduced a lot in the first quarter of 2023 either. Optimistically, the inventory adjustment in the supply chain might start to come to an end in a gradual manner from Q2. However, attention should be paid to the changes of three catalysts: the major memory suppliers' implementation strength of reduction plans for production or capital expenditure; whether the recovery of demand for large data centers and servers and the speed of inventory adjustment can be the same as expected and maintain the robust growth momentum; and the recovery of the market in China, including the stability of supply after reopening, official subsidy policies, and possibility of increase in purchases of consumer applications such as smartphones.

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. The overall growth rate of the demand for DRAM, however, is expected to be lower than the long-term average in 2023. Nevertheless, the market demand will improve quarter after quarter, so we still look forward to the performance in the long run.

In Q1 2023, the shipment volumes of the three mainstream applications—servers, mobile phones and PCs—have constantly fallen. Without taking account of the fewer working days and the low season, the downstream brand manufacturers of mobile phones and PCs purchased less DRAM products compared to the same period in 2022, which led to a 10~20% year-over-year decline in shipments. Servers are the only application that sees a chance to have a shipment volume remaining at the same level.

In spite of the weak demand of the global consumer market, the trend of year-by-year growth of cloud services and servers remains unchanged; the major cloud service providers in North America, in particular, have relatively bright prospects. Therefore, the three leading DRAM manufacturers will expand the deployment of server memories in a more aggressive manner, and the overall percentage of supply will probably reach more than 35% in 2023. As SK Hynix acquired the Intel NAND memory business and further formed the subsidiary, Solidigm, in the US in 2022, the deployment of servers will be driven even more, with the percentage of supply likely to reach up to 40%.

In the second half of 2022, the server market has once been faced with the challenge of inventory adjustment by downstream costumers. Nevertheless, the two major chip manufacturers have introduced new-generation platforms: AMD released the EPYC Genoa at the end of 2022, and Intel, though relatively late, finally launched the fourth generation Xeon processor (Sapphire Rapids). These support the new specifications of PCIe Gen5 and DDR5, which will stimulate the growth momentum of new products for alternation of generations in the supply chain.

A gradual change in the penetration rate of DDR5 in servers is expected to be seen from Q2 2023. However, the total cost is significantly higher than that of the previous generation (an increase by around 50%), which will cause the price of top-grade DDR5 chips to drop rapidly. Meanwhile, as the memory manufacturers intend to speed up the implementation by customers, a quarterly decline of 30~40% in price in thefirst half of 2023 is projected. The capacity for single machines may be increased with the active DDR5 price reduction strategies, and as the penetration rate of high-density (64GB) module products in server DRAMs is promoted, the average DRAM capacity in servers will also rise by more than 10% in 2023. (See Fig. 20)

Server DRAM Content Growth	2021		2022		2023	
	YoY	GB	YoY	GB	YoY	GB
Ave Content	15%	429	17%	502	19%	600
Server Shipment	2021		2022		2023	
	YoY	Mn units	YoY	Mn units	YoY	Mn units
Inventec	6.0%	3.5	0.4%	3.5	-2.5%	3.4
Wistron	10.9%	3.4	-7.6%	3.2	-48.3%	1.6
Foxconn	5.4%	2.1	5.2%	2.2	10.7%	2.4
Quanta	12.0%	2.9	-0.7%	2.9	1.8%	2.9
Mitac	6.5%	1.3	2.9%	1.3	-2.6%	1.3
Others	-0.5%	2.4	13.5%	2.7	53.3%	4.1
Total	7.0%	15.5	1.3%	15.7	0.4%	15.7

ctrum, February 2023

Fig. 20 WW Server Shipment & Content

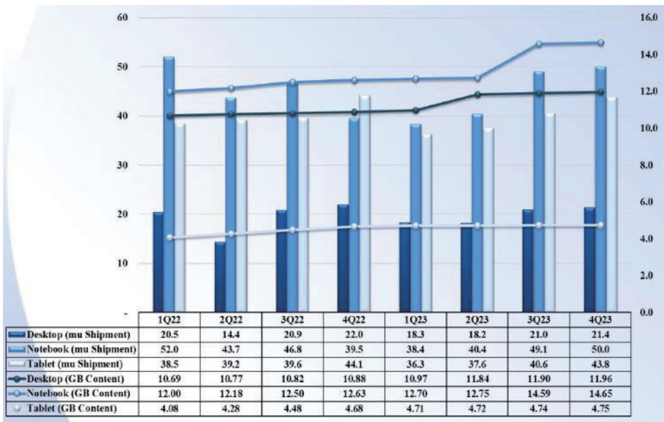
The market of smartphones have reached a plateau; the sales have been disappointing and led to inventory adjustment in 2022. Following the year-over-year decline in shipment volume by around 10% in 2022, it is expected by the market that the sales in 2023 will continue to go down in a slight manner. Official incentive policies might be launched after China's easing of pandemic control; we look forward to the recovery but dare not promise that such recovery will bring only benefits. Overall, LPDDR5 is limited to high-end flagship models, while LPDDR4 continues to account for the majority of proportion and serve as the leading item in the market. As the mobile phone market was sluggish in 2022, the recovery of demand in the second half of 2023 will be helpful to a growth of average DRAM capacity in a single machine by more than 10%. (See Fig. 21)

Mobile DRAM Content Growth	2021		2022		2023	
	YoY	GB	YoY	GB	YoY	GB
PoP	15%	6.3	10%	6.9	11%	7.7
xMCPs	19%	4.9	16%	5.6	13%	6.4
Ave	18%	5.3	14%	6.0	13%	6.8
Smartphone Shipment	**2021**		**2022**		**2023**	
	YoY	**Mn units**	**YoY**	**Mn units**	**YoY**	**Mn units**
Samsung	4.9%	269.4	-3.4%	260.1	-0.4%	259.2
Apple	13.4%	240.1	-5.7%	226.4	-0.4%	225.5
OPPO	39.9%	197.9	-15.9%	166.5	-1.8%	163.5
Vivo	15.3%	129.2	-23.0%	99.5	-3.3%	96.2
Huawei	-81.0%	36.6	-40.9%	21.7	24.1%	26.9
Honor	-	40.1	28.3%	51.4	-2.0%	50.4
Xiaomi	29.3%	191.8	-20.1%	153.3	-2.9%	148.9
Lenovo	38.3%	50.6	-9.8%	45.6	0.4%	45.8
Transsion	46.4%	82.8	-8.8%	75.5	-0.9%	74.8
Other	-14.3%	109.0	-6.6%	101.8	1.0%	102.8
Total	5.0%	1,347.5	-10.8%	1,201.7	-0.7%	1,193.9

Source: inSpectrum, February 2023

Fig. 21 WW Smartphone Shipment & Content

As the advantages stemming from the pandemic have decreased, the golden age of NB has come to an end. There was a year-over-year reduction in shipment volume by around 25~30% in the second half of 2022 despite the normal peak shipping season. The players in the supply chain believe that even Apple, which has stable shipment volume, will be faced with cancellation of orders for MacBook due to the continuing inflation pressure and inventory adjustment. The overall shipment in Q1 2023 is likely to have a year-over-year decline of around 25%, and owing to the impact of a great deal of unfavorable factors in the macro economy, the shipment volume throughout the year might even fall below 180 million units. The drop in memory prices does offer a benefit—it stimulates the growth of memory capacity. Besides, as the performance of use might be affected by Microsoft operating systems and applications which take a great deal of memory resources, the capacity of NB memory is expected to grow by more than 15% to process more data of greater complexity. (See Fig. 22)



	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23
Desktop (mu Shipment)	20.5	14.4	20.9	22.0	18.3	18.2	21.0	21.4
Notebook (mu Shipment)	52.0	43.7	46.8	39.5	38.4	40.4	49.1	50.0
Tablet (mu Shipment)	38.5	39.2	39.6	44.1	36.3	37.6	40.6	43.8
Desktop (GB Content)	10.69	10.77	10.82	10.88	10.97	11.84	11.90	11.96
Notebook (GB Content)	12.00	12.18	12.50	12.63	12.70	12.75	14.59	14.65
Tablet (GB Content)	4.08	4.28	4.48	4.68	4.71	4.72	4.74	4.75

Source: inSpectrum, February 2023

Fig. 22 WW PC/NB/Tablet Shipment & Content

As we move to 2023, the fall in DRAM price has not yet ended; some legal persons in the market think that there will probably be a further reduction by 30~40% during the year. However, the drop in price also brings about positive effects, such as the enhancement of memory capacity of various application products, and the faster growth of penetration rate of new SSDs for DDR5 and PCIe interfaces. To upstream and downstream players in the supply chain, the fields of 5G, cloud and server will become the key focuses for greater deployment.

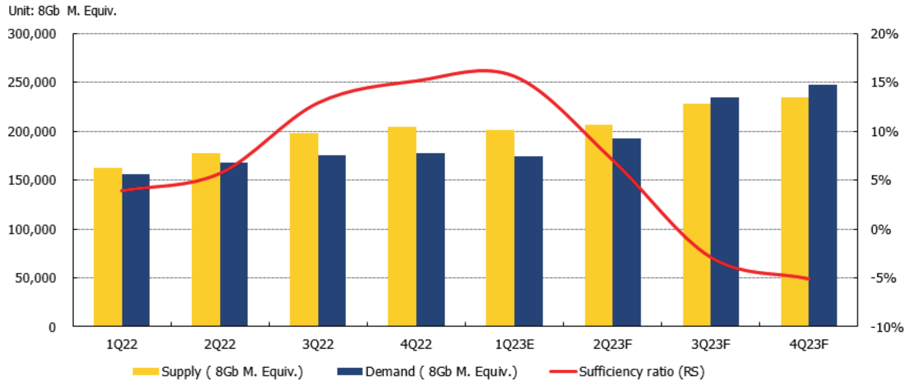
From the point of view of memory module manufacturers, the demand for PC DDR5 might remain low in the first half of 2023. Many DDR5 manufacturers are ready to move on with the launch of new products, but the alternation of generations will be slower compared to the expected speed. The penetration rate is likely to be over 20% in the second half of the year.

The companies in the industry initially expected that the proportion of DDR5 for servers would reach 30% by the end of the year. However, the factors such as the inventory adjustment of cloud servers, the risk of overall economic recession, and the relatively conservative investment in infrastructure of IT companies lead to the slower popularity of DDR5 for servers. The penetration rate is likely to be over 10% in the second half of the year, with the proportion reaching 25% in Q4.

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

a. Supply and demand status:

In 2023, the destocking at the demand end is still ongoing; the volume of purchases of server and data center customers remains low. Meanwhile, the demand for business notebook computers has gradually slowed down; there is a trend of declining demand for notebook computers throughout the year. In terms of smartphones, all brands lacked the growth momentum this year, particularly the brand manufacturers in China that have not yet been able to bolster the momentum of orders in spite of China's policy of reopening; thus, the production of the year only increased by 1% compared to the previous year. With the lower production of WDC and SK Hynix accompanying the load reduction of production lines of Kioxia and Micron, the growth rate of bit output has apparently plunged. It is hoped that the oversupply in the market can be mitigated through active production reduction in the supply chain. According to the latest analysis of TrendForce, the growth rates of output and demand thereof were 17.2% and 25.4%, respectively. The growth rate of output reflects the effect of production reduction by suppliers, while the figure of demand implies that conservative strategies have still been currently adopted for end products. If the market demand increases again in the second half of 2023 as expected, along with the growth rate of NAND Flash average capacity for smartphone and enterprise SSD above 20%, the continuously falling current contract price may stop dropping in the second half of the year. (See Fig. 23)

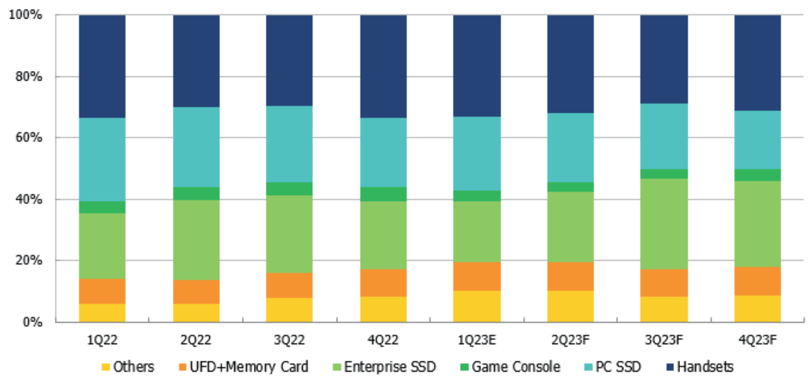


Source: TrendForce Corp., February 2023

Fig. 23 2022–2023 NAND Flash sufficiency

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

The growth of SSDs is highly expected in 2023 (see Fig. 24). In response to the increase in cloud service platforms ranging from traditional enterprise private cloud, emerging public cloud to personal cloud, the enhancements such as high speed and rapid data access thereof is driving the use of PCIe SSD in cloud computing. Moreover, the COVID-19 pandemic has accelerated electronization in different industries, forcing consumers to shift to electronization for a variety of reasons, including learning from home and remote work. As the demand for storage space has also continued to rise following the wide spread of IoT, VR/AR, 5G and other technologies, NAND Flash firms strive to develop new technology and new production processes for NAND Flash memories in order to increase the storage capacity per unit. Before we approach an era where the density of a single chip may reach the terabyte (TB) level, manufacturers will continue to compete over the development of 3D NAND Flash memories.



Source: TrendForce Corp., February 2023

Fig. 24 2022–2023 NAND Flash demand analysis by application

In 2023, the trend of generative AI has emerged due to ChatGPT. In the foreseeable future, the AI applications will increase in various industries ranging from telecommunications to manufacturing in an overwhelming manner. With the enormous influence of AI, these solutions also reflect the popularity of AI in performing basic and complex tasks. In addition, AI and blockchain will be incorporated in the Internet of Things. The IoT will collect data through sensors to facilitate mutual communication and actions, while AI will analyze the big data generated by IoT and imitate human intelligence to take on the responsibility of "thinking". Meanwhile, the blockchain technology will ensure the security, immutability and transparency of data. The integration of these three technologies can help organizations create great value and provide new business models. According to the IDC research, the expenditure in AI technology of governments and enterprises in the world will exceed USD 300 billion in 2026, which is two times the expenditure in 2022. This demonstrates the continuous investment in and close attention to AI technology in the public and private sectors worldwide. Among the industries, banks and the retail industry will make the highest investment in AI, jointly accounting for a quarter of the total investment amount. In the past two years, the impact of pandemic has led to manpower shortage in all industries and drove the adoption of AI in different companies. The technologies of AI-based data analysis, accurate prediction, process improvement and customer services have been widely applied in a variety of industries. For example, financial and insurance practitioners have launched smart customer services. Also, medical teams can even use AI to capture tiny changes invisible to the naked eye, thereby discovering the diseases of organs at an early stage. Through the development in recent years, the threshold of AI utilization has become significantly lower. The implementation of AI and cloud transformation have become the development directions that are of increasing importance, irrespective of industry and business scale. The estimation data of Gartner in April 2022 indicates that globally, the total expenditure of the end users of public cloud services will grow from USD 410.9 billion in 2021 to USD 494.7 billion in 2022, which is an increase by 20.4%. The total amount is expected to reach nearly USD 600 billion in 2023, which highlights the strong trend of cloud development. The companies of all types have been aware that there will not be a single "default" cloud provider in the future, and hope to adopt the optimal public cloud solution for each key work; the adoption rate will grow within the next decade. Servers have become an infrastructure essential to the modern society. Users rely on the extraction, storage and computing of servers to receive emails, post on social media and watch live streams, and the zero-tariff VoIP has basically replaced the traditional telecommunications services. Meanwhile, with the enhancement of globally created digital information and the growing demand for data collection and processing, the role of servers has experienced a three-stage transformation, from the independent computer room of each company to the centralized hyperscale data center, with the rising demands for public cloud and hybrid cloud. Now, servers will further move from centralized data center (core) to distributed edge due to the larger 5G bandwidth. As of the end of 2021, there were more than 700 hyperscale data centers in the world; the number is more than two times the number in 2015, and has increased by more than 100 centers per year. With the widespread installation of 5G, there are plenty of potential business opportunities of edge computing in the smart cities and smart factories. Following the launch of 5G around the world, the 5G open virtualized radio access network (Open vRAN for short) structure led by the US has enabled a wider range of server applications. It has broken through the closed telecommunications systems, with the base stations operable on X86 computers. Many telecom operators have been devoted to the Open RAN structure testing in 2022, and such action is expected to continue throughout 2023; thus, there will be a huge demand for servers in the foreseeable years. Despite the incomplete 5G coverage in many places, the technology is globally deployed in a rapid manner. It is expected that most telecom operators and network service providers will carry on the investment in expanding mid-band spectrum 5G network coverage in 2023; however, some of them also plan to strengthen the density of 5G network deployment to improve the performance and transmission capacity. As a result, we expect a growing demand for relevant equipment. As the 4G utilization in emerging markets has come to its limit while the 5G equipment cost has gradually fallen, and as the end users have demands for the 5G-based services and opportunities, the 5G technology is likely to be introduced to emerging markets progressively in 2023. The data of GSA (Global mobile Suppliers Association) shows that there were 1,222 devices supporting 5G standalone as of January 2023, with mobile phones accounting for up to 59% and FWA (fixed wireless access) devices and modules making up 14% and 12%, respectively. 5G has once been a patent aimed at high-end smartphones; nowadays, economical smartphones with a price less than USD 500 have also widely supported 5G technology. Also, the expanded mobile applications of high-speed and low-latency 5G Internet connection can further facilitate the development of 5G in 2023. The applications include: self-driving cars and drones, videos on streaming media, communication and collaboration, smart homes, cities, factories and agriculture, telehealth, and retail/logistics. In view of the lower latency, better energy consumption performance, wireless IIoT and other functions of 5G technology, there are likely to be more diverse applications in the Industry 4.0 era. With more equipment and devices devoted to the market, more private 5G industrial networks are expected to emerge by the end of

2023. Another key application of 5G in the future will be the expanded implementation of private networks by enterprises. It is expected that more companies will tend to introduce private mobile networks to boost their productivity in 2023. According to the analysis/prediction of Omdia, the number of 5G users will reach 5.9 billion in 2027, which means a user penetration rate of 70.9% and reflects the growing demand of end consumers for 5G. Also, there is a chance for groundbreaking AR services or devices to come into being and reshape the prospect of 5G market in the following years.

D. Competitive niches

(A) Strong experience in the industry and resilient operational structure

With the long-term development of storage technologies, Apacer holds over 200 patents, and has served thousands of customers and gained a great deal of valuable experience. During more than 20 years of business operations, we have gone through several crises in the memory market and further developed resilient operational structure, thus capable of rapidly responding to market trends and meeting customer requirements. We provide optimal product or technology solutions by integrating software, hardware and firmware, and continuously create more value-added benefits for our partners. We will carry on the development of product lines in industrial control, consumption and intelligent application areas simultaneously while making adjustments in a timely manner to ensure stable profitability and secure the long-term competitive strength of the Company.

(B) Promotion of patent R&D for greater corporate competitiveness

We formed the Patent Development Committee six years ago and formulated patent incentive regulations. Our employees are encouraged to be innovative, and with the patent review team conducting reviews of internal inventions, we ensure the uniqueness of innovative ideas and assess the possibility of commercialization. As of the end of 2022, we had 235 effective patents and 49 pending patents. The patents were mainly in Taiwan, the USA and China. More patents are being obtained.

(C) Globalized marketing strategies for business promotion

We have globally marketed our “Apacer” brand and timely satisfied the local customer needs with our five main subsidiaries worldwide. Marketing activities are not organized only by the head office in Taiwan; our subsidiaries also have responsible contact persons to support the marketing in local markets. As the technology evolves, we have made use of online communication platforms (i.e. streaming platforms, social media, etc.) as well as thematic events (i.e. international exhibitions, forums or seminars) in these years, and established the details of communication based on the difference in target attributes to forge links with the customers in different places. In the future, we will implement a platform for data collection and analysis to make precise and timely adjustments to marketing strategies with data-based determinations, so that the objective of promoting business development can be achieved.

(D) Optimization of system integration to meet the high demand for customization

Around 70% of Apacer's revenue comes from industrial customers. Such customers need to conduct sample testing in small quantities at the early stage of development, and might have small orders requiring customization at any time after they actually place orders. With a view to meeting the requirements of such customers, we have been devoted to the optimization of system integration in these years. With the efforts of the requiring units and the IT team in the aspects ranging from procurement and stock, inventory management, production scheduling to shipment from warehouses, the performance of material preparation, scheduling and production efficiency has been enhanced, and the product delivery time has been reduced. These improvements, in conjunction with our excellent customer and after-sale services, have increased the stickiness of high-value customers to us.

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

The pandemic and climate change in recent years have led to soaring shipping fees, port congestion, supply chain disruption, and raw material price fluctuation, impacting not only the suppliers but also our business operations. Besides, as international trends driving requirements for a green supply chain emerge, how to stabilize the sources of raw materials, ensure legal compliance at an international level at the supply end, take action to support requirements for environmental friendliness, and provide customers with competitive products are crucial for the long-term operation of companies. Apacer has a long-term supply chain management system in place and keeps good relationships with domestic and overseas suppliers. Through the RBA (Responsible Business Alliance Code of Conduct) and Sustainable Development Committee, compliance with regulations and eco-friendly requirements is ensured at the supply end. We maintain our profit bases for customers and the Company.

(F) Quality control at an international level to keep a close eye on products

Any quality issues of the memory module, namely the key of product core storage, will bring losses to customers. Therefore, we have strict quality requirements. Apart from passing international quality management certifications, including ISO 9001, ISO 14001, ISO 45001 and IECQ QC 080000, we enhance our process equipment and management in a continuous manner to ensure that the products meet the requirements of RoHS and other EU directives related to the environment. Our ultimate goal is on-time delivery and zero-defect product quality.

(G) Planning of complete service processes to solve problems for customers

Apacer has complete service processes and communication channels and set up many subsidiaries around the world. In addition to contact with the business department, assistance can be provided directly through the eRMA system. Our internal professional technical teams can provide customers with efficient and instant technical services without territorial restrictions.

(H) Adherence to the core value to create a sustainable cornerstone

Only when having a brand spirit and a core value will a company be able to develop a corporate culture as the cornerstone for sustainable business operations. 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. By doing so, we have developed a positive brand image and won awards and certifications from external institutions. We will continuously implement ESG investing in line with international development trends and march toward the goal of sustainability.

E. Favorable and unfavorable factors of development and countermeasures

(A) Favorable factors

a. R&D and patent development capabilities

As patent R&D can provide competitiveness and protection for a company, we have devoted resources to innovative R&D and commercialization of patents. Every year, in addition to the funds allocated for R&D, assessments of the possibility of patent commercialization are also carried out in an active manner in the aspect of patent. Regarding the development of offensive patents, the Company regularly reviews the patents for which applications have been made, in order to keep track of the value of each patent and explore the possibility of patent commercialization. To ensure the quality and quantity of patent applications, the Company has hired an intellectual property responsible person to control all patent affairs commissioned to other parties, and to hold regular meetings to report the patent control status for relevant managers to review. As for the attention to the technology development of our competitors, we periodically monitor and analyze the patented technologies of the competitors to understand their technology deployment, determine avoidance strategies early and enter the market.

b. Complete service process and outstanding product quality

By sticking to the brand spirit of “Access the Best” and the core brand value of “Becoming Better Partners” throughout the process from ordering, material preparation, shipment to after-sale services, Apacer continues to be one of the top 10 global memory module manufacturers with the highest revenue. We also keep on investing in the training of personnel and update of equipment to obtain relevant international standard certifications. In addition to the RBA (Responsible Business Alliance Code of Conduct), we have passed the ISO 9001 and ISO 14001 quality certifications and renewed the certificates on a continuous basis. For the manufacturing aspect, we have not only constantly improved the efficiency of automatic production equipment and high-performance inspection equipment, but also adopted strict gateway inspections in the production process to properly control the product quality and yield rate so that the brand competitiveness can be ensured.

c. Alternation of generations for products in response to trends

The memory specifications have been upgraded ceaselessly. In pursuit of better efficiency and benefits, customers change their product specifications in a gradual manner, which drives the alternation of product generations. Meanwhile, in recent years, the pandemic has stimulated the demands for remote and cloud solutions, the hacking incidents resulting in personal data leakage have increased the demands for information security, and the sustainability issues have triggered the reflection on the demands for environmental protection and green energy. These factors are all helpful to the development of future business opportunities. As long as we pay attention to the markets and stay aware of the user pain points, there will always be opportunities to take advantage of.

d. Generation of business revenues with internal innovation

In addition to the continuous development of the main business, Apacer has, based on the promotion of internal innovation, established the Emerging Application Division in 2017 to respond to the development trend of Internet of Things. The focuses include not only the provision of smart long-term care services with AIoT integration, but also the intelligent environmental detection and disaster warning. Moreover, in view of the growing business opportunities of automated optical inspection devices in recent years, we provide the AI+AOI optical inspection device integration service for the panel and pharmaceutical companies which have special inspection requirements. Assisting such business owners with the reduction of manual work time and the enhancement of yield rate will be our key service in the future.

e. Globalized marketing strategies and channels

We have globally marketed our “Apacer” brand since our establishment. With the head office in Taiwan, we have established subsidiaries at important overseas locations to assist overseas customers in finding the most suitable solution and solving technical problems of products with the 24-hour non-stop service. With resources invested in marketing every year, we develop marketing tools, enhance communication channels such as LinkedIn, Meta, Instagram, etc., and run a corporate brand website to be able to respond to customers’ needs at any time.

f. Partnership with strategic partners for mutual progress

The prices of the main raw materials for memory modules are susceptible to fluctuations caused by the external environment. Hence, 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. In spite of the shortage in materials due to the pandemic or other factors in recent years, we enjoy stable supply sources and prices thanks to the good partnership with our suppliers that we have collaborated with for a long time.

We entered into a strategic alliance with Phison Electronics through private placement in 2017, and completed the share exchange with UD info and made Acer become our partner through private placement in 2022. These help integrate the competitive advantages and resources from multiple parties, expanding our business scale while increasing the completeness of our product lines. Through the partnership, we hope to develop differentiated competitiveness, drive the industrial integration, and jointly expand cross-border niche markets and create a sustainable relationship for mutual progress and benefits.

(B) Unfavorable factors and countermeasures

a. Big price fluctuations of main raw materials affecting the stability of profits

The cost of DRAM and flash chips accounts for the highest proportion of the cost of memory module products, and their prices can be extremely volatile due to the changes in external environment, which affects the operating profits. Our response measures are as follows:

(a) We timely keep track of the changes through multiple channels (e.g. interaction with research and survey agencies, subscription of market news, etc.) in an irregular manner, enhance our sensitivity and assessment of pricing trends in the marketplace, and improve our capabilities to respond to the risks of price fluctuations.

(b) 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.

b. Diversity of product specifications causing intense market price competition

The demands cover B2B and B2C customers. For consumers, the short product life cycles causes intense price competition, and the demands change easily due to external factors. In this context, it is not easy to control inventories to respond timely enough to changes in the market, which may lead to failure to destock or higher raw material prices. Apacer has three response measures for this. Firstly, we intensively monitor market trends and demand via our overseas marketing channels and provide localized demand as a reference for the R&D team to make designs. Secondly, we adjust our prices based on the timely information reporting and reduce inventory through marketing approaches. Meanwhile, we continuously develop products and services with high added value, gross profit and quality.

c. 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.

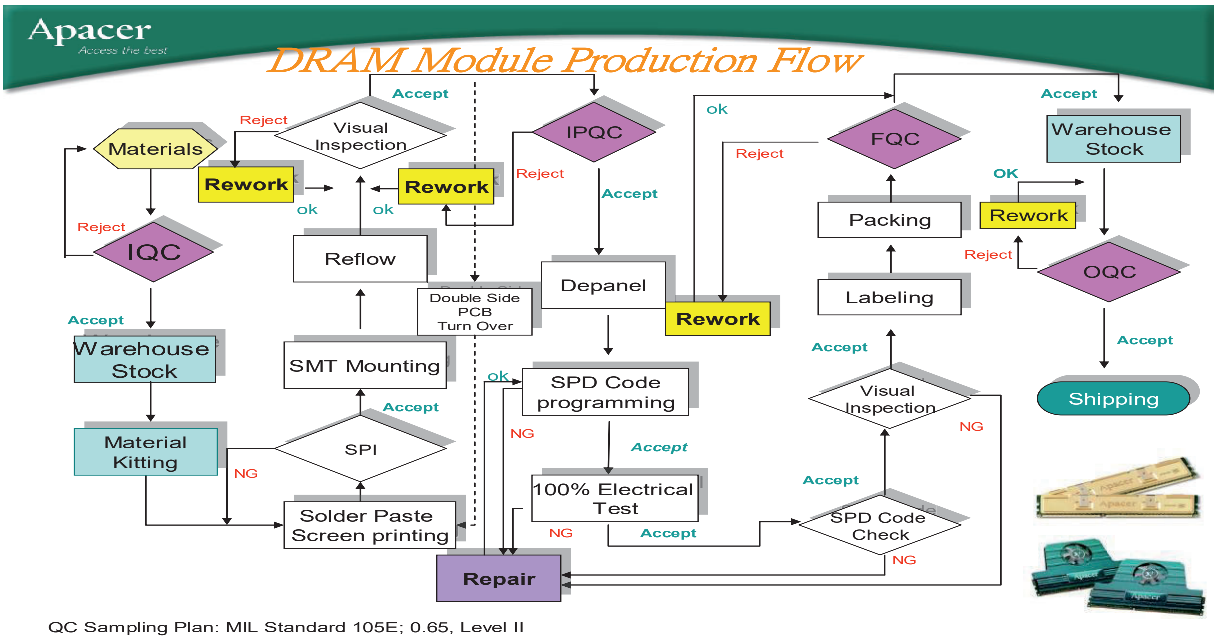
(2) Important uses and production processes of our main products

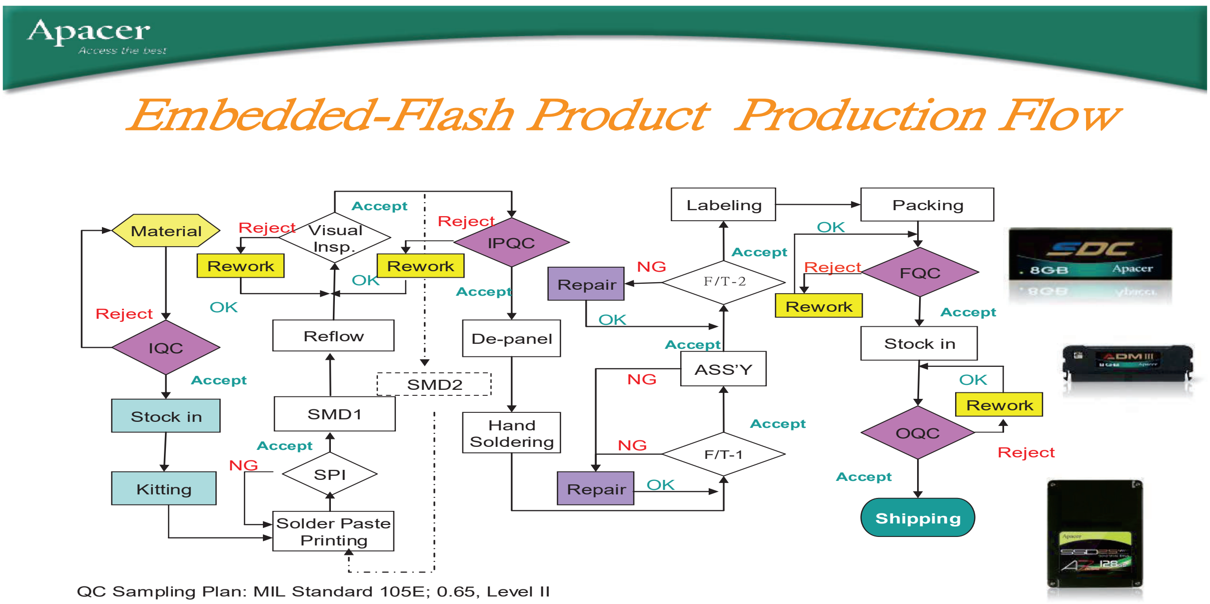
A. Important uses of the main products

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.

B. Production processes





(3) 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

(4) List of major suppliers and customers

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

Unit: TWD 1,000

2021				2022				2023, as of March 31			
Title	Amount	Annual net procurement ratio (%)	Relationship with the issuer	Title	Amount	Annual net procurement ratio (%)	Relationship with the issuer	Title	Amount	Annual net procurement ratio (%)	Relationship with the issuer
A	1,620,535	20.98	-	B	1,204,195	19.49	Note	B	258,782	21.38	Note
B	1,154,468	14.95	Note	A	1,102,092	17.84	-	C	174,876	14.45	-
C	953,415	12.34	-	C	874,555	14.16	-	A	145,774	12.04	-
Others	3,995,131	51.73		Other	2,996,583	48.51		Other	631,047	52.13	
Net procurement amount	**7,723,549**	**100.00**		**Net procurement amount**	**6,177,425**	**100.00**		**Net procurement amount**	**1,210,479**	**100.00**	

Note: They are related parties of the Company.

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

(5) Production value over the last two years

Unit: 1,000 pieces; TWD 1,000

Year / Production value / Major products	2021			2022		
	Production capacity	Production volume	Production value	Production capacity	Production volume	Production value
Memory module	(Note 1)	8,225	3,281,726	(Note 3)	21,732	4,673,374
Flash memory	(Note 2)	8,372	2,406,990	(Note 4)	7,679	2,402,990
Total	**3,509**	**16,597**	**5,688,716**	**3,397**	**29,411**	**7,076,364**

Note 1: Nearly 77% was outsourced.
Note 2: Nearly 81% was outsourced.
Note 3: Nearly 77% was outsourced.
Note 4: Nearly 89% was outsourced.

(6) Sales value over the last two years

Unit: 1,000 pieces; TWD 1,000

Year / Sales value / Major products	2021				2022			
	Domestic sales		International sales		Domestic sales		International sales	
	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Flash memory	2,397	562,735	15,027	4,024,311	2,384	791,430	15,467	4,298,858
Memory module	2,404	1,188,255	9,560	2,885,140	1,930	986,774	16,409	2,618,058
Other	221	21,395	0	557	34	47,551	0	54,364
Total	**5,022**	**1,772,385**	**24,587**	**6,910,008**	**4,348**	**1,825,755**	**31,876**	**6,971,280**

3. Personnel information over the last two years

(1) 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 2022, the total number of training hours for personnel was 8,669 hours.

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

Year		2021	2022	2023, as of March 31
Number of employees	Direct personnel	150	150	154
	Indirect personnel	324	319	323
	Total	474	469	477
Average age		39.6	40.2	40
Average years with our company		7.6	8.2	8.1
Distribution of degrees	Doctoral degree	1	2	2
	Master's degree	98	91	96
	(Associate's) Bachelor’s degree	299	300	299
	Senior high school	70	72	76
	Below senior high school	6	4	4

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

(3) Training structure and efficacy

A. 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.

B. 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.

C. Training efficacy

The 2022 training results are as follows:

Course type	Number of participants	Total training hours	Total cost (TWD)
New staff training (including occupational safety and health)	163	452	$1,470,980
General training (including law-related training)	2,758	5,308	
Talent Training (including management training)	413	1,378	
External professional training	100	953	
RBA & ethical management training (Note 1) (including occupational safety and health)	498	498	
ESG training	40	80	
Total	3,972	8,669	

Note: Including subsidiaries.

(4) 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.

(5) 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.

(6) 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.

A. 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.

B. 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.

C. Employees' code of conduct

(A) Avoidance of Conflict of Interest: According to the Company's "Ethical Corporate Management Best Practice Principles" and "Procedures for Ethical Management and Guidelines for Conduct", 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 2022, 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 498 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:

a. 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.

b. Where a worker commits a violent act against or grossly insults the Company's responsible person, his /her family member, a manager at any level, or a fellow employee.

c. Where the employee has been sentenced to temporary imprisonment, and is not granted a suspended sentence or permitted to commute the sentence to payment of a fine.

d. Where the employee deliberately damages or abuses any machinery, tool, raw materials, product, or other property of the Company, or deliberately discloses any technical or operational confidential information of the Company thereby causing serious damage to the Company.

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

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

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

h. Where the employee refuses to follow reasonable instructions and neglect their duties, resulting in damage to the Company; this must be specific and serious.
i. Where the employee slanders the Company, instigates an illegal slow-down or illegal strikes, with specific evidence.
j. Where the employee forges the signature of their supervisor or abuses their supervisor's stamp.
k. Where the employee threatens the supervisor or destroys or alters a company file.
l. Where the employee steals or gambles anywhere within the premises of the Company that affects the order of work; with specific evidence after investigation.
m. Where the employee violates a national statute and thus affects the performance of a labor contract, or breaches the labor contract in a serious way.
n. Where the employee brings banned items such as guns, ammunition, or knives into the workplace without good reason.

D. 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.

E. 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.

F. 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.

4. Environmental protection expenditure

(1) 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.

(2) Greenhouse gas emissions and reductions

Apacer Technology took greenhouse gas inventories in 2013 and set 2012 as the base year for inspections going forward. In the same year, we were verified by Bureau Veritas Taiwan (B.V.) and obtained a statement of reasonable assurance level. Apacer Technology annually checks its greenhouse gas emissions of the previous year. The boundary of the inventory is the direct and indirect greenhouse gas emissions of all our plant sites in Taiwan.

According to the data, the “water-cooled chillers” purchased in 2022 for equipment replacement have definitely helped save more electricity and energy compared to the previous water chillers. However, since the refrigerant in the plant was not added in 2022, there was a significant decrease in Scope 1 (direct greenhouse gas) emissions by 670.920 metric tons Co2-e/year compared to the emissions in 2021.

This year, 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 429.294 metric tons Co2-e/year.

In general, the greenhouse gas emissions in 2022 reduced by 261.041 metric tons Co2-e/year compared to 2021. In the future, the Company will carry on the management and promotion of greenhouse gas reduction.

Year	2021 (Note 1)	2022 (Note 2)
Direct greenhouse gas emissions	681.387 metric tons CO2-e/year	10.467 metric tons CO2-e/year
Indirect greenhouse gas emissions	1,887.388 metric tons CO2-e/year	1,867.973 metric tons CO2-e/year
Greenhouse gas emissions from transportation		429.294 metric tons CO2-e/year
Total greenhouse gas emissions	2,568.775 metric tons CO2-e/year	2,307.734 metric tons CO2-e/year

Note 1: The investigation data in response to the update on the 2021 “electricity carbon emission factor” is presented in the table above.

Note 2: As the 2022 “electricity carbon emission factor” has not yet been available, the one in 2021 is used as the basis for the calculation of the emissions.

(3) 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.

(4) 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_6:22 for Ta, Sn, Au and W and RMI_EMRT_1:11 for Co and Mica on our green supplier platform to keep in line with the policy of responsible minerals sourcing. Meanwhile, the 28th REACH Candidate List of SVHC has been included in 2023, with the number of controlled substances updated to 233.

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.

(5) 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	2021	2022
Industrial waste	14.7295 tons	16.5090 tons
Recyclable waste	19.7446 tons	16.9376 tons
Total	34.4741 tons	33.4466 tons

(6) 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. In response to the COVID-19 pandemic, the employees were arranged to work on difference schedules in 2021 to ensure their health. Their working pattern was back to normal in 2022, so the water consumption increased compared to the amount in 2021. 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	2021	2022
Water consumption	9,177 kiloliters	9,875 kiloliters

5. Cyber security management

(1) Cyber security policy

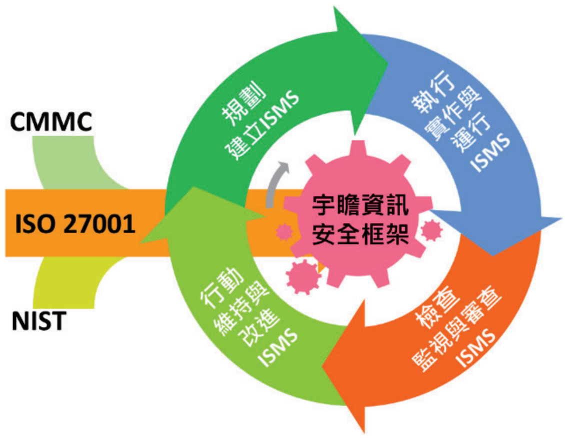
The Company released an information security policy applicable to the employees and suppliers of the Company in 2019 to protect the information assets by ensuring their confidentiality, availability and integrity and to boost the confidence of customers in the Company's information security. The information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

(2) 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.

A. 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.



B. 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:

(A) Planning phase: Classification of information assets, risk evaluation, risk handling plans

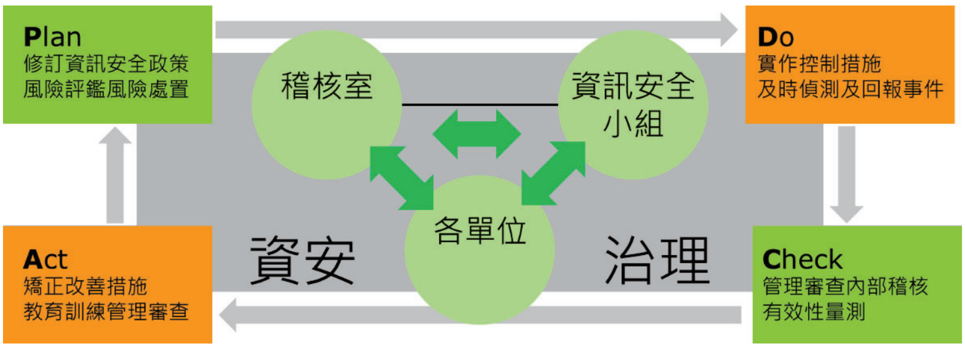
(B) Doing phase: Defense-in-depth strategies including physical security implementation, system/device security implementation, account and permission management, information security monitoring and maintenance

(C) Checking phase: Internal audit, asset sampling and review, evaluation of the effectiveness of technological defense

(D) Improvement phase: Corrections and improvements, management and review meetings

(E) 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.



(3) 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.

A. Outcomes of information security promotion

(A) Policy: 6 ISMS documents were developed and amended and then released.

(B) Training and announcement: 4 information security-related announcements were made. All new employees underwent information security training.

(C) 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.

(D) Latest reporting date: 12/14/2022, reporting of the implementation to the Board of Directors

B. Types of controls

(A) Communication network safety: Improving wireless network authentication and encryption safety

(B) System development and maintenance: Strengthening website and application protection as well as threat blocking

(C) Vulnerability detection and management: Performing annual vulnerability assessment for high-risk hosts, planning for endpoint detection and response (EDR) protection and threat analysis.

(D) Disposal guidelines and communication network safety: Revising and amending the regulations governing the control and management of the ISMS continuously.

C. 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	Personnel access control and management, data leakage management, personnel remote access restriction, external storage device control
External threat	Antivirus and anti-hacking measures	Regular virus and malware scanning, network firewalls
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

6. Labor-management relations

(1) 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:

A. Staff welfare measures, education, training and implementation

(A) 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.

(B) 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.

(C) 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.

B. 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:

(A) 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 President.

(B) 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.

(C) 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.

(D) 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.

C. 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 2020.

D. 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.

(A) 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.

(B) 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.

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

A. 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) Movement toward zero accidents

We implement a self-management plan for safety and health as well as a safety and health education and training plan to achieve the target of 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.

B. 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.

(3) 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.

7. Important contracts

Nature of contract	Parties	Contract date	Main content	Restrictive clauses
System implementation contract	eCloudvalley Digital Technology Co., Ltd.	2023/02/15~2023/09/30	System introduction and consultation	None
Insurance contract	Fubon Property and Casualty Insurance Co., Ltd.	2022/07/01~2023/07/01	Commercial fire insurance	None
Insurance contract	South China Insurance Co., Ltd.	2023/01/01~2023/12/31	Cargo insurance	None
Insurance contract	Hotai Insurance Co., Ltd.	2023/01/01~2023/12/31	Product liability insurance and public accident liability insurance	None
Insurance contract	Fubon Property and Casualty Insurance Co., Ltd.	2023/01/01~2023/12/31	Directors and managers' liability insurance	None

VI. Financial Overview

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

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

A. Condensed balance sheet (consolidated financial statement)

Unit: TWD 1,000

Item \ Year		Financial information of the last five years (Note 1) 2018	2019	2020	2021	2022 (Note 2)	Financial information of 2023, as of March 31 (Note 1)
Current assets		3,175,676	3,158,606	2,959,170	3,765,156	4,598,725	4,555,300
Long-term investments		45,821	41,944	37,761	27,420	30,213	29,288
Property, plant and equipment		887,458	876,060	871,958	861,356	917,402	910,888
Right-of-use assets		-	35,110	28,684	32,455	46,445	57,340
Intangible assets		66,280	62,278	53,225	43,147	245,556	240,687
Other assets		100,284	103,146	100,301	148,534	183,695	184,585
Total assets		4,275,519	4,277,194	4,051,099	4,878,068	6,022,036	5,978,088
Current liabilities	Before allocation	1,538,233	1,421,922	1,191,101	1,713,603	1,609,246	1,829,014
	After allocation	1,790,478	1,679,211	1,396,786	2,007,875	2,014,117	1,829,014
Non-current liabilities		41,830	48,876	50,316	72,595	108,881	108,497
Total liabilities	Before allocation	1,580,063	1,470,798	1,241,417	1,786,198	1,718,127	1,937,511
	After allocation	1,832,308	1,728,087	1,447,102	2,080,470	2,122,998	1,937,511
Equity attributed to stockholders of the company							
Share capital		1,008,978	1,008,978	1,008,978	1,018,243	1,226,882	1,226,882
Capital reserve		359,910	359,910	361,519	389,146	924,322	924,322
Retained earnings	Before allocation	1,393,935	1,515,937	1,548,000	1,819,067	2,100,373	1,823,783
	After allocation	1,141,690	1,258,648	1,342,315	1,524,795	1,695,502	1,823,783
Other equities		(67,540)	(78,579)	(108,958)	(134,722)	(87,389)	(91,512)
Treasury shares		-	-	-	-	-	-
Total equity of stockholders of the parent company	Before allocation	2,695,283	2,806,246	2,809,539	3,091,734	4,164,188	3,883,475
	After allocation	2,443,038	2,548,957	2,603,854	2,797,462	3,759,317	3,883,475
Non-controlling interests		173	150	143	136	139,721	157,102
Total equity	Before allocation	2,695,456	2,806,396	2,809,682	3,091,870	4,303,909	4,040,577
	After allocation	2,443,211	2,549,107	2,603,997	2,797,598	3,899,038	4,040,577

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

Note 2: The amounts after allocation are according to the proposal for distribution of dividends by cash, which was approved by the Board of Directors on February 21, 2023.

B. Condensed Consolidated Profit and Loss Statement (Consolidated Financial Statement)

Unit: TWD 1,000

Item \ Year	Financial information of the last five years (Note 1)					Financial information of 2023, as of March 31 (Note 1)
	2018	2019	2020	2021	2022	
Operating revenue	9,441,618	7,485,821	7,152,222	8,682,393	8,797,035	1,911,058
Gross operating profit	1,309,289	1,400,243	1,125,902	1,452,884	1,688,414	427,266
Operating income	437,883	483,595	345,419	573,060	694,122	176,515
Non-operating income and expenses	623	(4,695)	25,250	4,213	19,353	5,741
Net profit before tax	438,506	478,900	370,669	577,273	713,475	182,256
Net profit of continuing operations for the period	358,830	376,629	290,460	485,781	576,991	145,659
Losses from suspended operations	-	-	-	-	-	-
Net profit for the current period	358,830	376,629	290,460	485,781	576,991	145,659
Other comprehensive income for the period (net income after taxes)	16,826	(12,883)	(31,494)	(25,859)	54,844	(4,120)
Total consolidated income for the current period	375,656	363,746	258,966	459,922	631,835	141,539
Net profit for the period attributed to owners of the parent	358,839	376,642	290,469	485,788	559,126	128,281
Net profit for the period attributed to non-controlling interests	(9)	(13)	(9)	(7)	17,865	17,378
Total comprehensive income attributed to owners of the parent	375,668	363,769	258,973	459,929	613,970	124,158
Total comprehensive income attributed to non-controlling interests	(12)	(23)	(7)	(7)	17,865	17,381
Earnings per share (TWD)	3.56	3.73	2.88	4.81	5.23	1.05

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

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

A. Condensed balance sheet (individual financial statement)

Unit: TWD 1,000

Item \ Year		Financial information of the last five years (Note 1)				
		2018	2019	2020	2021	2022 (Note 2)
Current assets		2,843,922	2,821,478	2,590,942	3,361,666	3,511,772
Long-term investments		342,034	356,840	385,715	398,202	892,068
Property, plant and equipment		883,660	872,214	868,620	858,517	854,215
Right-of-use assets		-	14,012	14,889	26,490	18,700
Intangible assets		66,024	62,130	53,099	43,043	39,156
Other assets		92,823	89,473	91,362	140,922	169,241
Total assets		4,228,463	4,216,147	4,004,627	4,828,840	5,485,152
Current liabilities	Before allocation	1,506,707	1,369,607	1,156,402	1,678,356	1,290,917
	After allocation	1,758,952	1,626,896	1,362,087	1,972,628	1,695,788
Non-current liabilities		26,473	40,294	38,686	58,750	30,047
Total liabilities	Before allocation	1,533,180	1,409,901	1,195,088	1,737,106	1,320,964
	After allocation	1,785,425	1,667,190	1,400,773	2,031,378	1,725,835
Share capital		1,008,978	1,008,978	1,008,978	1,018,243	1,226,882
Capital reserve		359,910	359,910	361,519	389,146	924,322
Retained earnings	Before allocation	1,393,935	1,515,937	1,548,000	1,819,067	2,100,373
	After allocation	1,141,690	1,258,648	1,342,315	1,524,795	1,695,502
Other equities		(67,540)	(78,579)	(108,958)	(134,722)	(87,389)
Treasury shares		-	-	-	-	-
Total equity of stockholders of the parent company	Before allocation	2,695,283	2,806,246	2,809,539	3,091,734	4,164,188
	After allocation	2,443,038	2,548,957	2,603,854	2,797,462	3,759,317
Non-controlling interests		-	-	-	-	-
Total equity	Before allocation	2,695,283	2,806,246	2,809,539	3,091,734	4,164,188
	After allocation	2,443,038	2,548,957	2,603,854	2,797,462	3,759,317

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

Note 2: The amounts after allocation are according to the proposal for distribution of dividends by cash, which was approved by the Board of Directors on February 21, 2023.

B. Condensed consolidated income statement (individual financial statement)

Unit: TWD 1,000

Item \ Year	Financial information of the last five years (Note 1)				
	2018	2019	2020	2021	2022
Operating revenue	9,064,195	7,151,398	6,890,658	8,422,696	8,224,555
Gross operating profit	1,062,262	1,105,823	897,595	1,215,209	1,343,273
Operating income	416,470	440,924	306,112	531,032	583,819
Non-operating income and expenses	22,044	25,733	54,212	35,543	85,080
Net profit before tax	438,514	466,657	360,324	566,575	668,899
Net profit of continuing operations for the period	358,839	376,642	290,469	485,788	559,126
Losses from suspended operations	-	-	-	-	-
Net profit for the current period	358,839	376,642	290,469	485,788	559,126
Other comprehensive income for the period (net income after taxes)	16,829	(12,873)	(31,496)	(25,859)	54,844
Total consolidated income for the current period	375,668	363,769	258,973	459,929	613,970
Earnings per share (TWD)	3.56	3.73	2.88	4.81	5.23

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

(3) 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
2018	Philip Tang, Grace Chen	Unqualified opinion
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

2. Financial analysis of the last five years

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

Item	Year	Financial information of the last five years (Note 1)					Financial information of 2023, as of March 31 (Note 1)
		2018	2019	2020	2021	2022	
Financial structure	Debt to assets ratio (%)	36.96	34.39	30.64	36.61	28.53	32.41
	Long-term capital to Property, plant and equipment ratio (%)	308.44	325.92	328.00	367.38	481.01	455.50
Repayment ability	Current ratio (%)	206.45	222.14	248.44	219.72	285.77	249.06
	Quick ratio (%)	127.48	154.75	180.22	131.47	222.39	205.91
	Interest protection ratio	58.28	95.16	124.39	169.89	105.13	52.87
Operational capacity	Receivables turnover ratio (times)	7.65	7.20	8.25	8.01	8.48	10.35
	Average collection turnover	48	51	44	46	43	35
	Inventory turnover rate (times)	5.81	5.72	6.95	6.32	5.82	7.02
	Payable turnover (times)	7.95	6.48	7.36	9.14	8.95	8.81
	Average inventory turnover rate	63	64	53	58	63	52
	Property, plant and equipment turnover (times)	10.57	8.49	8.18	10.01	9.89	8.36
	Total asset turnover rate (times)	2.12	1.75	1.72	1.94	1.61	1.27
Profitability	Return on assets (%)	8.19	8.9	7.03	10.94	10.69	2.47
	Return on equity (%)	13.63	13.69	10.34	16.46	15.60	3.49
	Net profit before tax to paid-in capital ratio (%)	43.46	47.46	36.74	56.69	58.15	14.86
	Net profit margin (%)	3.80	5.03	4.06	5.59	6.56	7.62
	Earnings per share (TWD)	3.56	3.73	2.88	4.81	5.23	1.05
Cash flow	Cash flow ratio (%)	53.94	63.33	28.31	(18.75)	111.68	4.03
	Cash flow adequacy ratio (%)	69.96	99.20	94.42	72.91	164.26	151.71
	Cash reinvestment ratio (%)	19.53	21.42	2.60	(15.57)	33.91	1.77
Leverage	Operational leverage	2.13	2.36	2.84	2.09	1.92	2.03
	Financial leverage	1.02	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. Financial structure:
   The increase in "long-term capital to real estate, plant and equipment ratio" was due to the significant increase in total equity as a result of the new share issuance for acquisition of UD info's shares and the inclusion of Acer through cash capital increase by way of private placement in this year.
2. Repayment ability:
   The increase in "current ratio" and "quick ratio" was due to the significant increase in cash and cash equivalents as a result of the cash capital increase by way of private placement in this year.
   The decrease in "interest protection ratio" was due to the significant increase in interest expenses as a result of the higher interest rate caused by the rate rise in the US.
3. Cash flow:
   The increase in "cash flow ratio", "cash flow adequacy ratio" and "cash reinvestment ratio" was due to the decrease in inventory purchases as a result of the adjustment to inventory level according to the market conditions, which led to an increase in cash flow from operating activities.
4. Leverage:
   The "operational leverage" decreased due to an increase in operating income.

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

A. Financial structure:
   (A) Debt to assets ratio = Total liabilities / Total assets
   (B) Long-term capital to property, plant and equipment ratio = (Total equity + Non-current liabilities) /Net value of real estate, plant and equipment
B. Debt paying ability:
   (A) Current ratio = Current assets / Current liabilities
   (B) Quick ratio = (Current assets - Inventory - Prepaid expenses) / Current liabilities
   (C) Interest protection ratio = Net income before tax and interest expense/interest expense of the current period
C. Operational capacity:
   (A) Receivables turnover rate (including accounts receivable and bills arising from operations) = Net sales/average receivables for each period (including accounts receivable and bills arising from operations)
   (B) Average collection turnover = 365/ Receivables turnover ratio
   (C) Inventory turnover rate = Cost of goods sold / Average inventory value
   (D) Payables turnover rate (including accounts payable and bills arising from operations) = Cost of goods sold/Average balance of payables for each period (including accounts payable and bills arising from business operations)
   (E) Average inventory turnover rate = 365 / Inventory turnover rate
   (F) Turnover of property, plant and equipment = Net sales / Average net value of property, plant and equipment
   (G) Total asset turnover rate = Net sales / Gross average assets
D. Profitability:
   (A) Return on assets = (Profits or losses after tax + interest expenses × (1-tax rate)) / Average total assets
   (B) Return on equity = Profits or losses after tax / Average total equity
   (C) Net profit margin = Profits or losses after tax / Net sales
   (D) Earnings per share = (Income attributed to stockholders of the company - Special shares dividends) / Weighted average of issued shares
E. Cash flow:
   (A) Cash flow ratio = Net cash flow from operating activities / Current liabilities
   (B) 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
   (C) 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)
F. Leverage:
   (A) Operational leverage = (Net operating income - Variable operating costs and expenses) / Operating profits
   (B) Financial Leverage = Operating income / (Operating income - Interest expenses)

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

Item		Financial information of the last five years (Note 1) 2018	2019	2020	2021	2022
Financial structure	Debt to assets ratio (%)	36.26	33.44	29.84	35.97	24.08
	Long-term capital to property, plant and equipment ratio (%)	308.01	326.36	327.90	366.97	491.00
Repayment ability	Current ratio (%)	188.75	206.01	224.05	200.30	272.04
	Quick ratio (%)	113.02	138.63	156.31	112.81	212.91
	Interest protection ratio	58.32	102.45	135.50	178.72	108.59
Operational capacity	Receivables turnover ratio (times)	7.56	7.40	8.23	8.03	8.15
	Average collection turnover	48	49	44	45	45
	Inventory turnover rate (times)	6.22	5.91	7.11	6.48	6.36
	Payable turnover (times)	7.85	6.44	7.36	9.15	9.20
	Average inventory turnover rate	59	62	51	56	57
	Property, plant and equipment turnover (times)	10.18	8.15	7.92	9.75	9.60
	Total asset turnover rate (times)	2.06	1.69	1.68	1.91	1.59
Profitability	Return on assets (%)	8.31	9.01	7.12	11.06	10.94
	Return on equity (%)	13.64	13.69	10.34	16.46	15.41
	Net profit before tax to paid-in capital ratio (%)	43.46	46.25	35.71	55.64	54.52
	Net profit margin (%)	3.96	5.27	4.22	5.77	6.80
	Earnings per share (TWD)	3.56	3.73	2.88	4.81	5.23
Cash flow	Cash flow ratio (%)	59.09	53.18	24.52	(20.74)	123.52
	Cash flow adequacy ratio (%)	80.49	100.63	91.17	67.97	147.17
	Cash reinvestment ratio (%)	21.81	15.72	0.86	(16.46)	29.32
Leverage	Operational leverage	2.20	2.19	2.68	1.97	1.91
	Financial leverage	1.02	1.01	1.01	1.01	1.01

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

1. Financial structure:
   The decrease in "debt to assets ratio" was due to the decrease in inventory purchases as a result of the adjustment to inventory level according to the market conditions, which led to a decrease in short-term loans and accounts payable.
   The increase in "long-term capital to real estate, plant and equipment ratio" was due to the significant increase in total equity as a result of the new share issuance for acquisition of UD info's shares and the inclusion of Acer through cash capital increase by way of private placement in this year.
2. Repayment ability:
   The increase in "current ratio" and "quick ratio" was due to the significant increase in cash and cash equivalents as a result of the cash capital increase by way of private placement in this year.
   The decrease in "interest protection ratio" was due to the significant increase in interest expenses as a result of the higher interest rate caused by the rate rise in the US.
3. Cash flow:
   The increase in "cash flow ratio", "cash flow adequacy ratio" and "cash reinvestment ratio" was due to the decrease in inventory purchases as a result of the adjustment to inventory level according to the market conditions, which led to an increase in cash flow from operating activities.
4. Leverage:
   The "operational leverage" decreased due to an increase in operating income.

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

A. Financial structure:
   (A) Debt to assets ratio = Total liabilities / Total assets
   (B) Long-term capital to property, plant and equipment ratio = (Total equity + Non-current liabilities) /Net value of real estate, plant and equipment
B. Debt paying ability:
   (A) Current ratio = Current assets / Current liabilities
   (B) Quick ratio = (Current assets - Inventory - Prepaid expenses) / Current liabilities
   (C) Interest protection ratio = Net income before tax and interest expense/interest expense of the current period
C. Operational capacity:
   (A) Receivables turnover rate (including accounts receivable and bills arising from operations) = Net sales/average receivables for each period (including accounts receivable and bills arising from operations)
   (B) Average collection turnover = 365/ Receivables turnover ratio
   (C) Inventory turnover rate = Cost of goods sold / Average inventory value
   (D) Payables turnover rate (including accounts payable and bills arising from operations) = Cost of goods sold/Average balance of payables for each period (including accounts payable and bills arising from business operations)
   (E) Average inventory turnover rate = 365 / Inventory turnover rate
   (F) Turnover of property, plant and equipment = Net sales / Average net value of property, plant and equipment
   (G) Total asset turnover rate = Net sales / Gross average assets
D. Profitability:
   (A) Return on assets = (Profits or losses after tax + interest expenses × (1 - tax rate)) / Average total assets
   (B) Return on equity = Profits or losses after tax / Average total equity
   (C) Net profit margin = Profits or losses after tax / Net sales
   (D) Earnings per share = (Income attributed to stockholders of the company - Special shares dividends) / Weighted average of issued shares
E. Cash flow:
   (A) Cash flow ratio = Net cash flow from operating activities / Current liabilities
   (B) 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
   (C) 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)
F. Leverage:
   (A) Operational leverage = (Net operating income - Variable operating costs and expenses) / Operating profits
   (B) Financial Leverage = Operating income / (Operating income - Interest expenses)

3. Auditor'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 2022. 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

2023 Shareholders' Meeting of Apacer Technology Inc.

Audit Committee Convener: Max Wu 吳廣義

February 21, 2023

4. Financial report of the most recent year

(1) 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, 2022 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 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 21, 2023

Independent Auditors’ Report

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, 2022 and 2021, and 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 significant 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, 2022 and 2021, 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, International Accounting Standards, interpretations as well as related guidance 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 Auditing and Attestation of Financial Statements by 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 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's consolidated financial statements for the year ended December 31, 2022 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.

   Description of key audit matter:

   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.

   How the matter was addressed in our audit:

   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 with reference to actual write-off of inventories in a subsequent period; 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. Business combination

   Please refer to notes 4(s) and 6(g) for the accounting policy on business combinations and "Business combination" for the related disclosures, respectively, of the notes to consolidated financial statements.

   Description of key audit matter:

   In August 2022, the Group issued additional shares of common stock in exchange for shares of common stock of UD INFO Corp. (UD), wherein the Company acquired 68.54% ownership of UD and obtained control over UD. To adopt the accounting treatment of business combination, the management needs to assess and determine the consideration transferred and the fair value of the identifiable assets and liabilities. The assessment is complex and involves significant assumptions and estimation. Therefore, the assessment of acquisition of subsidiary has been identified as one of the key audit matters.

   How the matter was addressed in our audit:

   In relation to the key audit matter above, our principal audit procedures included reviewing the share exchange agreement signed by both parties; understanding the related terms of scope of business combination and consideration transferred; inspecting the record of issuance of additional common shares to confirm the settlement of the share exchange transaction; obtaining the purchase price allocation report with valuation on intangible assets, conducted by an external expert engaged by the management; auditing the acquired assets and liabilities identified by the management, including any fair value adjustments at the acquisition date. In doing so, we have consulted internal valuation specialists to assist in evaluating the reasonableness of the valuation model and key assumptions used. We have also assessed whether correct accounting treatment has been applied, and appropriate disclosures with respect to the acquisition has been made.

3. Assessment of impairment of goodwill

Please refer to notes 4(m), 5(b) and 6(j)(iii) 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.

Description of key audit matter:

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.

How the matter was addressed in our audit:

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 additionally prepared its parent-company-only financial statements as of and for the years ended December 31, 2022 and 2021, 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 International Financial Reporting Standards, International Accounting Standards, interpretation as well as related guidance endorsed 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, 2022 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’ audit report are Tzu-Chieh Tang and Wei-Ming Shih.

KPMG

Taipei, Taiwan (Republic of China)
February 21, 2023

Notes to Readers

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, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars)

	Assets	December 31, 2022 Amount	%	December 31, 2021 Amount	%
	Current assets:				
1100	Cash and cash equivalents (note 6(a))	$ 1,419,376	23	650,064	13
1110	Financial assets at fair value through profit or loss－current (note (b))	980	-	110,748	2
1170	Notes and accounts receivable, net (notes 6(d) and (t))	735,899	12	1,335,198	27
1180	Accounts receivable from related parties (notes 6(d), (t) and 7)	377	-	2,420	-
1310	Inventories (note 6(e))	955,484	16	1,486,513	31
1476	Other financial assets－current (note 6(a))	1,380,623	23	100,440	2
1479	Other current assets	105,986	2	79,773	2
	Total current assets	4,598,725	76	3,765,156	77
	Non-current assets:				
1517	Financial assets at fair value through other comprehensive income－non-current (note 6(c))	29,769	1	26,056	-
1550	Investments accounted for using equity method (note 6(f))	444	-	1,364	-
1600	Property, plant and equipment (notes 6(h) and 8)	917,402	15	861,356	18
1755	Right-of-use assets (note 6(i))	46,445	1	32,455	1
1780	Intangible assets (notes 6(g) and (j))	245,556	4	43,147	1
1840	Deferred income tax assets (note 6(p))	175,117	3	141,344	3
1980	Other financial assets－non-current	5,842	-	5,339	-
1990	Other non-current assets	2,736	-	1,851	-
	Total non-current assets	1,423,311	24	1,112,912	23
	Total assets	$ 6,022,036	100	4,878,068	100

	Liabilities and Equity	December 31, 2022 Amount	%	December 31, 2021 Amount	%
	Current liabilities:				
2100	Short-term borrowings (note 6(k))	$ 92,145	2	251,979	5
2120	Financial liabilities at fair value through profit or loss－current (note 6(b))	1,012	-	133	-
2170	Notes and accounts payable	504,327	8	668,123	14
2180	Accounts payable to related parties (note 7)	214,345	4	202,608	4
2200	Other payables (notes 6(u) and 7)	452,284	8	384,135	8
2230	Current income tax liabilities	110,864	2	115,274	2
2250	Provisions－current (note 6(n))	10,544	-	10,224	-
2280	Lease liabilities－current (note 6(m))	15,659	-	14,848	1
2300	Other current liabilities (note 6(t))	206,050	3	66,279	1
2322	Current portion of long-term debt (notes 6(l) and 8)	2,016	-	-	-
	Total current liabilities	1,609,246	27	1,713,603	35
	Non-current liabilities:				
2540	Long-term debt (notes 6(l) and 8)	28,108	1	-	-
2570	Deferred income tax liabilities (note 6(p))	22,894	-	123	-
2580	Lease liabilities－non-current (note 6(m))	31,339	1	18,086	1
2640	Net defined benefit liabilities (note 6(o))	19,982	-	40,541	1
2645	Guarantee deposits	6,558	-	13,845	-
	Total non-current liabilities	108,881	2	72,595	2
	Total liabilities	1,718,127	29	1,786,198	37
	Equity attributable to shareholders of the Company (notes 6(g) and (q)):				
3100	Common stock	1,226,882	20	1,018,243	21
3200	Capital surplus	924,322	15	389,146	8
3300	Retained earnings	2,100,373	35	1,819,067	37
3400	Other equity	(87,389)	(1)	(134,722)	(3)
	Total equity attributable to shareholders of the Company	4,164,188	69	3,091,734	63
36XX	Non-controlling interests (note 6(g))	139,721	2	136	-
	Total equity	4,303,909	71	3,091,870	63
	Total liabilities and equity	$ 6,022,036	100	4,878,068	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, 2022 and 2021

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

		2022		2021	
		Amount	%	Amount	%
4000	**Revenue (notes 6(t), 7 and 14)**	$ 8,797,035	100	8,682,393	100
5000	**Cost of revenue (notes 6(e), (h), (j), (m), (n), (o), (r), 7 and 12)**	(7,108,621)	(81)	(7,229,509)	(83)
5900	**Gross profit**	1,688,414	19	1,452,884	17
6000	**Operating expenses (notes 6(d), (h), (i), (j), (m), (o), (r), (u), 7 and 12):**				
6100	Selling expenses	(553,021)	(6)	(511,040)	(6)
6200	Administrative expenses	(259,710)	(3)	(232,902)	(2)
6300	Research and development expenses	(165,679)	(2)	(138,947)	(2)
6450	Reversal of (recognized) expected credit losses	(15,882)	-	3,065	-
6000	**Total operating expenses**	(994,292)	(11)	(879,824)	(10)
6900	**Operating income**	694,122	8	573,060	7
7000	**Non-operating income and loss (notes 6(f), (h), (j), (m) and (v)):**				
7100	Interest income	11,009	-	2,067	-
7020	Other gains and losses－net	16,116	-	6,668	-
7050	Finance costs	(6,852)	-	(3,418)	-
7770	Share of losses of associates	(920)	-	(1,104)	-
	Total non-operating income and loss	19,353	-	4,213	-
7900	**Income before income tax**	713,475	8	577,273	7
7950	**Less: income tax expenses (note 6(p))**	(136,484)	(1)	(91,492)	(1)
	Net income	576,991	7	485,781	6
	Other comprehensive income (notes 6(o), (p), (q) and (w)):				
8310	**Items that will not be reclassified subsequently to profit or loss:**				
8311	Remeasurements of defined benefit plans	20,565	-	(11,295)	(1)
8316	Unrealized gains (losses) from investments in equity instruments measured at fair value through other comprehensive income	3,713	-	(10,365)	-
8349	Less: income tax related to items that will not be reclassified subsequently to profit or loss	(4,113)	-	2,259	-
		20,165	-	(19,401)	(1)
8360	**Items that may be reclassified subsequently to profit or loss:**				
8361	Exchange differences on translation of foreign operations	34,679	-	(6,458)	-
8399	Less: income tax related to items that may be reclassified subsequently to profit or loss	-	-	-	-
		34,679	-	(6,458)	-
	Other comprehensive income for the year, net of income tax	54,844	-	(25,859)	(1)
8500	**Total comprehensive income for the year**	$ 631,835	7	459,922	5
8600	**Net income attributable to:**				
8610	Shareholders of the Company	$ 559,126	7	485,788	6
8620	Non-controlling interests	17,865	-	(7)	-
		$ 576,991	7	485,781	6
8700	**Total comprehensive income attributable to:**				
8710	Shareholders of the Company	$ 613,970	7	459,929	5
8720	Non-controlling interests	17,865	-	(7)	-
		$ 631,835	7	459,922	5
	Earnings per share (in New Taiwan dollars) (note 6(s)):				
9750	Basic earnings per share	$	5.23		4.81
9850	Diluted earnings per share	$	5.11		4.71

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, 2022 and 2021

(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 stock-based employee compensation	Total	Total equity of the Company	Non-controlling interests	Total equity
Balance at January 1, 2021	$ 1,008,978	361,519	381,780	78,579	1,087,641	1,548,000	(67,908)	(41,050)	-	(108,958)	2,809,539	143	2,809,682
Appropriation of earnings:													
Legal reserve	-	-	28,935	-	(28,935)	-	-	-	-	-	-	-	-
Special reserve	-	-	-	30,379	(30,379)	-	-	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(205,685)	(205,685)	-	-	-	-	(205,685)	-	(205,685)
Net income in 2021	-	-	-	-	485,788	485,788	-	-	-	-	485,788	(7)	485,781
Other comprehensive income in 2021	-	-	-	-	(9,036)	(9,036)	(6,458)	(10,365)	-	(16,823)	(25,859)	-	(25,859)
Total comprehensive income in 2021	-	-	-	-	476,752	476,752	(6,458)	(10,365)	-	(16,823)	459,929	(7)	459,922
Changes in equity of associates accounted for using equity method	-	1,128	-	-	-	-	-	-	-	-	1,128	-	1,128
Issuance of restricted stock to employees	9,265	26,499	-	-	-	-	-	-	(35,764)	(35,764)	-	-	-
Compensation cost arising from restricted stock issued to employees	-	-	-	-	-	-	-	-	26,823	26,823	26,823	-	26,823
Balance at December 31, 2021	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

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, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars)

	2022	2021
Cash flows from operating activities:		
Income before income tax	$ 713,475	577,273
Adjustments:		
Depreciation	52,657	52,123
Amortization	16,007	12,085
Recognized (reversal of) expected credit loss	15,882	(3,065)
Interest expense	6,852	3,418
Interest income	(11,009)	(2,067)
Share-based compensation cost	8,941	26,823
Share of loss of associates	920	1,104
Loss (gain) on disposal of property, plant and equipment	(7)	10
Impairment loss on non-financial assets	303	140
Subtotal	90,546	90,571
Changes in operating assets and liabilities:		
Changes in operating assets:		
Financial assets at fair value through profit or loss	3,502	(529)
Notes and accounts receivable	602,398	(503,522)
Accounts receivable from related parties	2,043	(1,621)
Inventories	769,467	(688,744)
Other current assets	(8,176)	(22,634)
Net changes in operating assets	1,369,234	(1,217,050)
Changes in operating liabilities:		
Financial liabilities at fair value through profit or loss	879	(35)
Notes and accounts payable	(201,810)	201,096
Accounts payable to related parties	(61,438)	(41,340)
Other payables	51,859	139,197
Provisions	320	2,880
Other current liabilities	24,419	27,419
Net defined benefit liabilities	6	(10)
Net changes in operating liabilities	(185,765)	329,207
Total changes in operating assets and liabilities	1,183,469	(887,843)
Total adjustments	1,274,015	(797,272)
Cash provided by (used in) operations	1,987,490	(219,999)
Interest received	9,326	2,187
Interest paid	(6,658)	(3,344)
Income taxes paid	(192,937)	(100,187)
Net cash provided by (used in) operating activities	1,797,221	(321,343)

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, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars)

	2022	2021
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	-	(159,000)
Proceeds from disposal of financial assets at fair value through profit or loss	137,726	98,135
Acquisition of subsidiary, net of cash received	248,556	-
Acquisition of property, plant and equipment	(29,118)	(24,237)
Proceeds from disposal of property, plant and equipment	52	-
Acquisition of intangible assets	(5,946)	(943)
Decrease (increase) in other financial assets—current	(1,268,183)	509,179
Decrease in other financial assets—non-current	342	709
Increase in other non-current assets	(885)	(2,271)
Net cash provided by (used in) investing activities	(917,456)	421,572
Cash flows from financing activities:		
Increase (decrease) in short-term borrowings	(164,834)	153,629
Repayment of long-term debt	(22,716)	-
Increase (decrease) in guarantee deposits	(7,287)	8,225
Payment of lease liabilities	(17,965)	(18,510)
Cash dividends distributed to shareholders	(294,272)	(205,685)
Capital increase in cash	363,000	-
Net cash provided by (used in) financing activities	(144,074)	(62,341)
Effect of foreign exchange rate changes	33,621	(5,440)
Net increase in cash and cash equivalents	769,312	32,448
Cash and cash equivalents at beginning of year	650,064	617,616
Cash and cash equivalents at end of year	$ 1,419,376	650,064

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, 2022 and 2021

(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 21, 2023.

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, 2022:

- Amendments to IAS 16 "Property, Plant and Equipment—Proceeds before Intended Use"
- Amendments to IAS 37 "Onerous Contracts－Cost of Fulfilling a Contract"
- Annual Improvements to IFRS Standards 2018－2020
- Amendments to IFRS 3 "Reference to the Conceptual Framework"

(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, 2023, would not have a significant impact on its consolidated financial statements:

- 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"

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

The following new and amended standards, which may be relevant to the Group, have been issued by the International Accounting Standards Board (IASB), but have yet to be endorsed by the FSC:

Standards or Interpretations	Content of amendment	Effective date per IASB
Amendments to IAS 1 "Classification of Liabilities as Current or Non-current"	Under existing IAS 1 requirements, companies classify a liability as current when they do not have an unconditional right to defer settlement for at least 12 months after the reporting date. The amendments has removed the requirement for a right to be unconditional and instead now requires that a right to defer settlement must exist at the reporting date and have substance. The amendments clarify how a company classifies a liability that can be settled in its own shares – e.g. convertible debt.	January 1, 2024

The Group is evaluating the impact of its initial adoption of the abovementioned standards or interpretations on its consolidated financial position and consolidated financial performance. The results thereof will be disclosed when the Group completes its evaluation.

The Group does not expect the following other 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 1 "Non-current Liabilities with Covenants"
- IFRS16 "Requirements for Sale and Leaseback Transactions"

4. Summary of significant accounting policies:

The significant accounting policies presented in the consolidated financial statements are summarised 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-IFRSs").

(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, which is the Company's functional currency. Except when otherwise indicated, all financial information presented in New Taiwan dollars has been rounded to the nearest thousand.

(c) Basis of consolidation

(i) Principles of preparation of consolidated financial statements

The accompanying consolidated financial statements incorporate the financial statements of the Company and its controlled entities (the subsidiaries). The Company controls an investee when it is exposed, or has rights, to variable return from its involvement with the investee and has the ability to affect those returns through its power over the investee.

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:

Name of Investor	Name of Investee	Main Business and Products	Percentage of Ownership December 31, 2022	Percentage of Ownership December 31, 2021	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%	-	Note 1
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 as 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 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 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 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.

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: 2 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 (i) actuarial gains and losses; (ii) return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset); and (iii) 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 income taxes are recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred taxes are not recognized for:

(i) Temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit (losses) at the time of transaction;

(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-IFRSs.

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-IFRSs 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 inventory

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, 2022	December 31, 2021
Cash on hand	$ 195	24
Demand deposits	841,716	647,344
Time deposits with original maturities less than three months	577,465	2,696
	$ 1,419,376	650,064

As of December 31, 2022 and 2021, the time deposits with original maturities of more than three months amounted to $1,380,623 and $100,440, respectively, which were classified as other financial assets－current.

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

	December 31, 2022	December 31, 2021
Financial assets mandatorily at fair value through profit or loss－current:		
Open-ended mutual funds	$ -	110,013
Foreign currency forward contracts	-	414
Foreign exchange swaps	980	321
	$ 980	110,748

	December 31, 2022	December 31, 2021
Financial liabilities held for trading－current:		
Foreign currency forward contracts	$ (892)	(117)
Foreign exchange swaps	(120)	(16)
	$ (1,012)	(133)

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, 2022 and 2021, the derivative financial instruments that did not conform to the criteria for hedge accounting consisted of the following:

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

	December 31, 2021				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial assets－foreign currency forward contracts	JPY	40,900	$ 183	JPY / TWD	2022/01/26~2022/02/25
	USD	4,500	217	USD / TWD	2022/01/07~2022/01/13
	CNY	2,940	14	CNY / TWD	2022/01/26
			$ 414		
Financial liabilities－foreign exchange swaps	USD	3,500	$ 321	USD / TWD	2022/01/03~2022/01/18

	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 / TWD	2023/01/30
	CNY	8,500	(531)	CNY/ TWD	2023/01/30
	USD	2,000	(93)	USD / TWD	2023/01/10~2023/01/13
			$ (892)		
Financial liabilities－foreign exchange swaps	USD	3,000	$ (120)	USD / TWD	2023/01/19

	December 31, 2021				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial liabilities－foreign currency forward contracts	CNY	10,750	$ (117)	CNY / TWD	2022/01/26
Financial liabilities－foreign exchange swaps	USD	1,500	$ (16)	USD / TWD	2022/01/28

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

		December 31, 2022	December 31, 2021
Equity investments at fair value through other comprehensive income:			
Domestic unlisted stocks	$	29,616	25,749
Foreign unlisted stocks		153	307
	$	29,769	26,056

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, 2022 and 2021, and there were no transfers of any cumulative gain or loss within equity relating to these investments.

(d) Notes and accounts receivable

		December 31, 2022	December 31, 2021
Notes and accounts receivable	$	757,720	1,340,346
Accounts receivable from related parties		377	2,420
		758,097	1,342,766
Less: loss allowance		(21,821)	(5,148)
	$	736,276	1,337,618

As of December 31, 2022 and 2021, aside from recognizing impairment loss for credit-impaired accounts receivable amounting to $18,232 and $0, respectively, for notes and accounts receivable with gross carrying amounts of $18,232 and $0, 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, 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

	December 31, 2021		
	Gross carrying amount	Weighted-average loss rate	Loss allowance provision
Current	$ 1,225,587	0.0004%	5
Past due 1-90 days	114,821	2.4255%	2,785
Past due 91-180 days	32	98.8975%	32
Past due over 181 days	2,326	100%	2,326
	$ 1,342,766		5,148

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

	2022	2021
Balance at January 1	$ 5,148	8,293
Acquisition through business combination	791	-
Impairment loss recognized (reversed)	15,882	(3,065)
Write-off	-	(82)
Effect of exchange rate changes	-	2
Balance at December 31	$ 21,821	5,148

(e) Inventories

	December 31, 2022	December 31, 2021
Raw materials	$ 317,238	580,959
Work in process	184,978	184,871
Finished goods	421,131	633,944
Inventories in transit	32,137	86,739
	$ 955,484	1,486,513

For the years ended December 31, 2022 and 2021, the amounts of inventories recognized as cost of revenue were as follows:

	2022	2021
Cost of inventories sold	$ 6,905,014	7,068,453
Write-downs of inventories	203,606	161,105
Loss (gain) on physical inventory	1	(49)
	$ 7,108,621	7,229,509

The above write-downs of inventories to net realizable value were included in cost of revenue.

(f) Investments accounted for using equity method

(i) Investments in associates

Name of Associates	December 31, 2022 Percentage of voting rights	December 31, 2022 Carrying amount	December 31, 2021 Percentage of voting rights	December 31, 2021 Carrying amount
JoiiUp Technology Inc.	11.48%	$ 444	11.48%	1,364

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, 2022	December 31, 2021
The aggregate carrying amounts of associates that were not individually material	$ 444	1,364

	2022	2021
Attributable to the Group:		
Net loss	$ (920)	(1,104)
Other comprehensive income	-	-
Total comprehensive income	$ (920)	(1,104)

(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, 2022	December 31, 2021
UD INFO Corp. (UD)	Taiwan	31.46%	-

The summarized financial information of subsidiaries was as follows, the information was prepared in accordance with Taiwan-IFRSs. 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, 2022
Current assets	$ 628,711
Non-current assets	277,751
Current liabilities	(295,229)
Non-current liabilities	(52,099)
Net assets	$ 559,134
The carrying amount of non-controlling interests	$ 139,592

	2022.8.1~ 2022.12.31
Net sales	$ 313,826
Net income	$ 56,600
Other comprehensive income	-
Total comprehensive income	$ 56,600
Net income attributable to non-controlling interests	$ 17,873
Total comprehensive income attributable to non-controlling interests	$ 17,873

	2022.8.1~ 2022.12.31
Cash flow from operating activities	$ 120,191
Cash flow from investing activities	(136,178)
Cash flow from financing activities	(27,962)
Effects of foreign exchange rate changes	-
Net decrease in cash and cash equivalents	$ (43,949)
Cash dividends paid to non-controlling interests	$ -

(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, 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
Balance at January 1, 2021	$	556,498	302,962	183,965	115,955	9,578	1,168,958
Additions		-	7,930	5,185	3,184	7,938	24,237
Disposals		-	(185)	(3,900)	(33,461)	-	(37,546)
Reclassification and effect of exchange rate changes		-	9,405	6,980	(232)	(16,468)	(315)
Balance at December 31, 2021	$	556,498	320,112	192,230	85,446	1,048	1,155,334
Accumulated depreciation and impairment loss:							
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
Balance at January 1, 2021	$	-	53,813	148,992	94,195	-	297,000
Depreciation		-	12,685	13,281	8,590	-	34,556
Disposals		-	(185)	(3,900)	(33,451)	-	(37,536)
Impairment loss		-	-	140	-	-	140
Reclassification and effect of exchange rate changes		-	(17)	(7)	(158)	-	(182)
Balance at December 31, 2021	$	-	66,296	158,506	69,176	-	293,978
Carrying amount:							
Balance at December 31, 2022	$	598,567	260,379	36,457	16,736	5,263	917,402
Balance at December 31, 2021	$	556,498	253,816	33,724	16,270	1,048	861,356

For the years ended December 31, 2022 and 2021, the Group recognized an impairment loss on property, plant and equipment of $251 and $140, 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.

(i) Right-of-use assets

		Buildings	Other equipment	Total
Cost:				
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
Disposals		(29,976)	-	(29,976)
Effect of exchange rates changes		2,301	-	2,301
Balance at December 31, 2022	$	56,977	21,899	78,876
Balance at January 1, 2021	$	48,858	15,260	64,118
Additions		18,469	3,876	22,345
Disposals		(10,357)	(391)	(10,748)
Effect of exchange rates changes		(1,634)	-	(1,634)
Balance at December 31, 2021	$	55,336	18,745	74,081
Accumulated depreciation:				
Balance at January 1, 2022	$	35,443	6,183	41,626
Acquisition through business combination		-	446	446
Depreciation		13,730	5,230	18,960
Disposals		(29,976)	-	(29,976)
Effect of exchange rates changes		1,375	-	1,375
Balance at December 31, 2022	$	20,572	11,859	32,431
Balance at January 1, 2021	$	33,385	2,049	35,434
Depreciation		13,051	4,516	17,567
Disposals		(10,357)	(391)	(10,748)
Effect of exchange rates changes		(636)	9	(627)
Balance at December 31, 2021	$	35,443	6,183	41,626
Carrying amount:				
Balance at December 31, 2022	$	36,405	10,040	46,445
Balance at December 31, 2021	$	19,893	12,562	32,455

(j) Intangible assets

(i) The details of costs, accumulated amortization and impairment loss of intangible assets were as follows:

	Goodwill	Computer software	Royalties for the use of patents	Customer relationships	Expertise	Total
Cost:						
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
Balance at January 1, 2021	$ -	116,218	4,104	-	-	120,322
Additions	-	943	-	-	-	943
Reclassification and effect of exchange rate changes	-	942	-	-	-	942
Derecognition	-	(6,203)	-	-	-	(6,203)
Balance at December 31, 2021	$ -	111,900	4,104	-	-	116,004
Accumulated amortization and impairment loss:						
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
Balance at January 1, 2021	$ -	65,935	1,162	-	-	67,097
Amortization	-	11,863	222	-	-	12,085
Reclassification and effect of exchange rate changes	-	(122)	-	-	-	(122)
Derecognition	-	(6,203)	-	-	-	(6,203)
Balance at December 31, 2021	$ -	71,473	1,384	-	-	72,857
Carrying amount:						
Balance at December 31, 2022	$ 115,683	36,789	2,450	65,789	24,845	245,556
Balance at December 31, 2021	$ -	40,427	2,720	-	-	43,147

(ii) Amortization:

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

	2022	2021
Cost of revenue	$ 3,106	2,000
Operating expenses	$ 12,901	10,085

(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 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, 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 rate for the year ended December 31, 2022 was 16.71%, 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 a steady annual terminal growth rate for subsequent years, which was 1% for 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, 2022	December 31, 2021
Unsecured bank loans	$ 92,145	251,979
Unused credit facilities	$ 1,889,440	1,612,131
Interest rate interval	5.03%	0.64%~0.79%

(l) Long-term debt

	December 31, 2022	December 31, 2021
Secured bank loans	$ 30,124	-
Less: current portion of long-term debt	(2,016)	-
	$ 28,108	-
Unused credit facilities	$ 6,176	-
Interest rate interval	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 amount of lease liabilities were as follows:

	December 31, 2022	December 31, 2021
Current	$ 15,659	14,848
Non-current	$ 31,339	18,086

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

The amounts recognized in profit or loss were as follows:

	2022	2021
Interest on lease liabilities	$ 908	840
Variable lease payments not included in the measurement of lease liabilities	$ 1,233	1,126
Expenses relating to short-term leases	$ 731	326

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

	2022	2021
Total cash outflows for leases	$ 20,837	20,802

(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, 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
Balance at January 1, 2021	$ 4,659	2,685	7,344
Provisions made	4,045	26,652	30,697
Amount utilized	(1,677)	(26,140)	(27,817)
Balance at December 31, 2021	$ 7,027	3,197	10,224

(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 were as follows:

	December 31, 2022	December 31, 2021
Present value of defined benefit obligations	$ 60,106	79,355
Fair value of plan assets	(40,124)	(38,814)
	19,982	40,541
Effects of the asset ceiling	-	-
Net defined benefit liabilities	$ 19,982	40,541

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, 2022 and 2021, the Group's labor pension fund account balance at Bank of Taiwan amounted to $40,124 and $38,814, 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:

	2022	2021
Defined benefit obligations at January 1	$ 79,355	67,110
Current service costs and interest expense	613	514
Remeasurement on the net defined benefit liabilities (assets)		
—Actuarial loss arising from changes in demographic assumptions	-	1,884
—Actuarial loss (gain) arising from changes in financial assumptions	(18,157)	9,815
—Actuarial loss arising from experience adjustments	621	32
Benefits paid by the plan	(2,326)	-
Defined benefit obligations at December 31	$ 60,106	79,355

3) Movements of fair value of plan assets

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

	2022	2021
Fair value of plan assets at January 1	$ 38,814	37,854
Interest income	243	238
Remeasurement on the net defined benefit liabilities (assets)		
—Return on plan assets (excluding current interest expense)	3,029	436
Contributions by the employer	364	286
Benefits paid by the plan	(2,326)	-
Fair value of plan assets at December 31	$ 40,124	38,814

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:

		2022	2021
Current service costs	$	117	95
Net interest expense on the net defined benefit liability		253	181
	$	370	276
Cost of revenue	$	114	86
Selling expenses		123	85
Administrative expenses		68	60
Research and development expenses		65	45
	$	370	276

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:

		2022	2021
Cumulative amount at January 1	$	42,328	31,033
Recognized during the period		(20,565)	11,295
Cumulative amount at December 31	$	21,763	42,328

7) Actuarial assumptions

The principal assumptions of the actuarial valuation were as follows:

	December 31, 2022	December 31, 2021
Discount rate	1.750%	0.625%
Future salary increases rate	3.000%	4.000%

The Group expects to make contribution of $372 to the defined benefit plans in the year following December 31, 2022.

The weighted average duration of the defined benefit plans is 14.63 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, 2022 and 2021.

	Increase (decrease) in present value of defined benefit obligations	
	0.25% Increase	**0.25% Decrease**
December 31, 2022		
Discount rate	(1,818)	1,894
Future salary change rate	1,835	(1,767)
December 31, 2021		
Discount rate	(2,698)	2,809
Future salary change rate	2,670	(2,583)

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 2022, 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.

For the years ended December 31, 2022 and 2021, the Group recognized pension expenses of $26,504 and $24,972, respectively, in relation to the defined contribution plans.

(p) Income taxes

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

		2022	2021
Current income tax expense			
Current period	$	167,115	149,510
Adjustments for prior years		790	(12,787)
		167,905	136,723
Deferred income tax benefit			
Origination and reversal of temporary differences		(31,421)	(45,231)
Income tax expense	$	136,484	91,492

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

		2022	2021
Items that will not be reclassified subsequently to profit or loss:			
Remeasurement of defined benefit plans	$	4,113	(2,259)

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

		2022	2021
Income before income tax	$	713,475	577,273
Income tax using the Company’s statutory tax rate	$	142,695	115,455
Effect of different tax rates in foreign jurisdictions		20,131	9,636
Investment tax credits		(13,831)	(8,337)
Changes in unrecognized temporary differences		(14,271)	(6,343)
Prior-year adjustments		790	(12,787)
Surtax on undistributed earnings		4,699	1,218
Others		(3,729)	(7,350)
	$	136,484	91,492

(ii) Deferred income tax assets and liabilities

1) Unrecognized deferred income tax assets and liabilities

		December 31, 2022	December 31, 2021
Unrecognized deferred income tax assets:			
Aggregate deductible temporary differences associated with investments in subsidiaries	$	14,707	18,555
Deductible temporary differences		788	788
	$	15,495	19,343

	December 31, 2022	December 31, 2021
Unrecognized deferred income tax liabilities:		
Aggregate taxable temporary differences associated with investments in subsidiaries	$ 68,321	57,898

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, 2022 and 2021, 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, 2022	$ 8,109	93,300	1,405	10,000	28,530	141,344
Recognized in profit or loss	1	42,949	(434)	-	(9,045)	33,471
Acquisition through business combination	-	1,084	-	-	3,331	4,415
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
Balance at January 1, 2021	$ 5,852	60,652	932	10,000	16,295	93,731
Recognized in profit or loss	(2)	32,648	473	-	12,235	45,354
Recognized in other comprehensive income	2,259	-	-	-	-	2,259
Balance at December 31, 2021	$ 8,109	93,300	1,405	10,000	28,530	141,344

Deferred income tax liabilities:

	Others
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
Balance at January 1, 2021	$ -
Recognized in profit or loss	123
Balance at December 31, 2021	$ 123

(iii) The Company's income tax returns for the years through 2020 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, 2022 and 2021, the Company's authorized shares of common stock consisted of 200,000 thousand shares, of which 122,688 and 101,824 thousand shares, respectively, were issued. As of December 31, 2022 and 2021, as the shares of restricted stock to employees amounting to 463 and 926 thousand shares, respectively, were not yet vested, the Company's outstanding shares of common stock were 122,225 and 100,898 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	
	2022	**2021**
Balance at January 1	100,898	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	-
Balance at December 31	$ 122,225	100,898

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 will issue 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 will be 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, 2022	December 31, 2021
Paid-in capital in excess of par value	$	866,883	331,707
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		14,258	14,258
	$	924,322	389,146

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 Ruling No. 1010012865 issued by the FSC on April 6, 2012, a special reserve equal to the total amount of items that were accounted for as deductions from shareholders' equity was set aside from current and prior-year earnings. This special reserve shall revert to the retained earnings and be made available for distribution when the items that are accounted for as deductions from shareholders' equity are reversed in subsequent periods.

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 appropriation of 2021 earnings was approved by the Company's Board of Directors on February 23, 2022 and the appropriation of 2020 earnings was approved by the shareholders at the meeting on July 14, 2021, respectively. The resolved appropriation of the cash dividend per share were as follows:

	2021		2020	
	Dividends per share (in dollars)	**Amount**	**Dividends per share (in dollars)**	**Amount**
Dividends per share:				
Cash dividends	$ 2.89	294,272	2.02	205,685

On February 21, 2023, the cash dividends appropriated from 2022 earnings approved by the Company's Board of Directors were as follows:

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

(iv) Other equity items (net after tax)

1) Foreign currency translation differences

	2022	2021
Balance at January 1	$ (74,366)	(67,908)
Foreign exchange differences arising from translation of foreign operations	34,679	(6,458)
Balance at December 31	$ (39,687)	(74,366)

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

	2022	2021
Balance at January 1	$ (51,415)	(41,050)
Unrealized gains (losses) from investments in equity instruments measured at fair value through other comprehensive income	3,713	(10,365)
Balance at December 31	$ (47,702)	(51,415)

3) Unearned compensation cost

	2022	2021
Balance at January 1	$ (8,941)	-
Issuance of restricted stock to employees	-	(35,764)
Compensation cost arising from restricted stock issued to employees	8,941	26,823
Balance at December 31	$ -	(8,941)

(v) Non-controlling interests

	2022	2021
Balance at January 1	$ 136	143
Equity attributable to non-controlling interest:		
Net income (loss)	17,865	(7)
Changes in non-controlling interests	121,720	-
Balance at December 31	$ 139,721	136

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

As of December 31, 2022 and 2021, 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:

	2022	2021
Balance at January 1	926	-
Granted	-	926
Vested	(463)	-
Balance at December 31	463	926

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, 2022 and 2021, the compensation cost for the restricted shares of stock amounted to $8,941 and $26,823, respectively.

(ii) Employee compensation cost

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

	2022	2021
Compensation cost from restricted stock issued to employees	$ 8,941	26,823

(s) Earnings per share (“EPS”)

(i) Basic earnings per share

	2022	2021
Net income attributable to shareholders of the Company	$ 559,126	485,788
Weighted-average number of ordinary shares outstanding (in thousands)	106,846	100,898
Basic earnings per share (in dollars)	$ 5.23	4.81

(ii) Diluted earnings per share

	2022	2021
Net income attributable to shareholders of the Company	$ 559,126	485,788
Weighted-average number of ordinary shares outstanding (in thousands)	106,846	100,898
Effect of dilutive potential common stock (in thousands):		
Remuneration to employees	2,195	1,430
Restricted stock to employees	463	726
Weighted-average number of ordinary shares outstanding (including effect of dilutive potential common stock)	109,504	103,054
Diluted earnings per share (in dollars)	$ 5.11	4.71

(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.

	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

	2021		
	Segment		
	Asia	America and Europe	Total
Major products:			
Flash memory cards	$ 3,705,506	881,540	4,587,046
Memory modules	3,251,809	821,586	4,073,395
Others	21,952	-	21,952
	$ 6,979,267	1,703,126	8,682,393

(ii) Contract balances

	December 31, 2022	December 31, 2021	January 1, 2021
Notes and accounts receivable (including related parties)	$ 758,097	1,342,766	837,703
Less: loss allowance	(21,821)	(5,148)	(8,293)
	$ 736,276	1,337,618	829,410

	December 31, 2022	December 31, 2021	January 1, 2021
Contract liabilities (presented under other current liabilities)	$ 177,632	37,810	11,814

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, 2022 and 2021 that were included in the contract liabilities balances at January 1, 2022 and 2021 were $37,675 and $10,814, 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, 2022 and 2021, the Company estimated its remuneration to employees amounting to $83,479 and $62,103, respectively, and the remuneration to directors amounting to $10,683 and $8,926, 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 actual amount and 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

		2022	2021
Interest income from bank deposits	$	11,009	2,067

(ii) Other gains and losses－net

		2022	2021
Gain (loss) on disposal of property, plant and equipment	$	7	(10)
Foreign currency exchange gain		44,437	4,657
Losses on financial assets and liabilities at fair value through profit or loss		(38,948)	(1,038)
Impairment loss on non-financial assets		(303)	(140)
Others		10,923	3,199
	$	16,116	6,668

(iii) Finance costs

		2022	2021
Interest expense from bank loans	$	(5,944)	(2,578)
Interest expense from lease liabilities		(908)	(840)
	$	(6,852)	(3,418)

(w) Financial instruments

(i) Categories of financial instruments

1) Financial assets

	December 31, 2022	December 31, 2021
Financial assets at fair value through profit or loss	$ 980	110,748
Financial assets at fair value through other comprehensive income	29,769	26,056
Financial assets measured at amortized cost:		
Cash and cash equivalents	1,419,376	650,064
Notes and accounts receivable (including related parties)	736,276	1,337,618
Other financial assets (including current and non-current)	1,386,465	105,779
Subtotal	3,542,117	2,093,461
Total	**$ 3,572,866**	**2,230,265**

2) Financial liabilities

	December 31, 2022	December 31, 2021
Financial liabilities at fair value through profit or loss	$ 1,012	133
Financial liabilities measured at amortized cost:		
Short-term borrowings	92,145	251,979
Notes and accounts payable (including related parties)	718,672	870,731
Other payables	452,284	384,135
Lease liabilities (including current and non-current)	46,998	32,934
Long-term debt (including current portion)	30,124	-
Guarantee deposits	6,558	13,845
Subtotal	1,346,781	1,553,624
Total	**$ 1,347,793**	**1,553,757**

(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, 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
	$ 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**

	December 31, 2022					
			Fair Value			
	Carrying amount		Level 1	Level 2	Level 3	Total
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

	December 31, 2021					
			Fair Value			
	Carrying amount		Level 1	Level 2	Level 3	Total
Financial assets at fair value through profit or loss－current:						
Open-ended mutual fund	$	110,013	110,013	-	-	110,013
Derivatives－foreign currency forward contracts		414	-	414	-	414
Derivatives－foreign exchange swaps		321	-	321	-	321
	$	110,748	110,013	735	-	110,748
Financial assets at fair value through other comprehensive income－non-current:						
Domestic unlisted stocks	$	25,749	-	-	25,749	25,749
Foreign unlisted stocks		307	-	-	307	307
	$	26,056	-	-	26,056	26,056
Financial liabilities at fair value through profit or loss－current:						
Derivatives－foreign currency forward contracts	$	117	-	117	-	117
Derivatives－foreign exchange swaps		16	-	16	-	16
	$	133	-	133	-	133

(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.

The fair values of open-ended mutual funds with standard terms and conditions, and traded in active markets are 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, with estimates and assumptions consistent with those used by market participants and that are readily available to the Group. 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, 2022 and 2021.

(v) Movement in financial assets included in Level 3 of fair value hierarchy:

		2022	2021
Balance, beginning of period	$	26,056	36,421
Gains (losses) recognized in other comprehensive income, and presented in unrealized gains (losses) on financial assets measured at fair value through other comprehensive income		3,713	(10,365)
Balance, end of period	$	29,769	26,056

(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, 2022 and 2021, the Group’s maximum exposure to credit risk amounted to $3,572,866 and $2,230,265, 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, 2022 and 2021, the Group has insured credit insurance that cover accounts receivable amounting to $391,241 and $588,459, 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, 2022 and 2021, the Group had unused credit facilities of $1,895,616 and $1,612,131, 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, 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)	-
December 31, 2021					
Non-derivative financial liabilities:					
Short-term borrowings	$	251,979	(252,175)	(252,175)	-
Notes and accounts payable (including related parties)		870,731	(870,731)	(870,731)	-
Other payables		384,135	(384,135)	(384,135)	-
Lease Liabilities		32,934	(34,035)	(15,458)	(18,577)
Guarantee deposits		13,845	(13,845)	-	(13,845)
Derivative financial instruments:					
Foreign currency forward contracts:					
Outflow		-	46,476	46,476	-
Inflow		117	(46,593)	(46,593)	-
Foreign exchange swaps:					
Inflow		-	41,503	41,503	-
Outflow		16	(41,519)	(41,519)	-

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, 2022				
	Foreign currency (in thousands)	**Exchange rate**	**TWD (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

	December 31, 2021				
	Foreign currency (in thousands)	**Exchange rate**	**TWD (in thousands)**	**Change in magnitude**	**Pre-tax effect on profit or loss (in thousands)**
Financial assets					
Monetary items					
USD	$ 43,187	27.690	1,195,848	1%	11,958
CNY	19,036	4.345	82,711	1%	827
JPY	43,430	0.240	10,423	1%	104
Financial liabilities					
Monetary items					
USD	33,608	27.690	930,606	1%	9,306
CNY	127	4.345	552	1%	6
JPY	276	0.240	66	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 gain (loss) for the years ended December 31, 2022 and 2021 were $44,437 and $4,657, 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, 2022 and 2021 would have been $1,223 and $2,520, 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.

The investment target of open-ended mutual funds held by the Group are mostly monetary funds or bond funds. (accounted for as financial assets at fair value through profit or loss－current). The Group anticipates that there is no significant market risk related to the funds.

(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 ratio at the end of each reporting period was as follows:

	December 31, 2022	December 31, 2021
Total liabilities	$ 1,718,127	1,786,198
Total equity	$ 4,303,909	3,091,870
Liability-to-equity ratio	39.92%	57.77%

The total equity of the Group increased due to the issuance of additional 9,864 thousand shares of common stock in exchange for 4,932 thousand shares of common stock of UD on August 1, 2022 and issuance of additional 11,000 thousand of common shares in cash on November 17, 2022. In addition, the Group decreased its notes and accounts payable, and bank loans due to the decrease of stock level. The abovementioned increase in total equity of the Group and the decrease in its notes and accounts payable, and bank loans both resulted in the decreasing 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, 2022 and 2021, please refer to note 6(i).

(iii) Reconciliation of liabilities arising from financing activities were as follows:

			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

		January 1, 2021	Cash flows	Non-cash changes Acquisition	December 31, 2021
Short-term borrowings	$	98,350	153,629	-	251,979
Lease liabilities		29,099	(18,510)	22,345	32,934
Guarantee deposits		5,620	8,225	-	13,845
	$	133,069	143,344	22,345	298,758

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

		2022	2021
The Group’s key management personnel (the Company’s director)	$	8,412	11,609

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

		2022	2021
The Group’s key management personnel－Phison (the Company’s director)	$	1,204,195	1,154,468
Other related parties		432	-
		1,204,627	1,154,468

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, 2022	December 31, 2021
Accounts receivable from related parties	The Group's key management personnel (the Company's director)	$	377	2,420

(iv) Payables

Account	Related-party categories		December 31, 2022	December 31, 2021
Accounts payable to related parties	The Group's key management personnel －Phison (the Company's director)	$	214,210	202,608
Accounts payable to related parties	Other related parties		135	-
Other payables to related parties	The Group's key management personnel (the Company's director)		146	75
		$	214,491	202,683

(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		2022	2021
Operating expenses	The Group's key management personnel (the Company's director)	$	440	266
	Associates		50	50
	Other related parties		3	-
		$	493	316

(c) Compensation for key management personnel

		2022	2021
Short-term employee benefits	$	79,564	64,842
Post-employment benefits		432	432
Share-based payments		3,875	11,623
	$	83,871	76,897

8. Pledged assets :

The carrying amounts of the assets pledged as collateral are detailed below:

Pledged assets	Pledged to secure	December 31, 2022	December 31, 2021
Property, plant and equipment	Bank loans and credit facilities	$ 59,404	-

9. Significant commitments and contingencies:

As of December 31, 2022 and 2021, 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:

	2022			2021		
	Cost of revenue	Operating expenses	Total	Cost of revenue	Operating expenses	Total
Employee benefits:						
Salaries	157,308	580,540	737,848	143,160	504,541	647,701
Insurance	13,727	40,271	53,998	12,877	37,935	50,812
Pension	5,663	21,211	26,874	5,395	19,853	25,248
Others	8,778	31,705	40,483	8,629	50,684	59,313
Depreciation	18,891	33,766	52,657	19,982	32,141	52,123
Amortization	3,106	12,901	16,007	2,000	10,085	12,085

APACER TECHNOLOGY INC. AND SUBSIDIARIES

Notes to the Consolidated Financial Statements

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, 2022:

(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, 2022				Maximum Percentage of Ownership during 2022		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	8,908	0.01%	8,908	3.6	0.01%	-
The Company	Stock: OTO Photonics Inc.	-	Financial assets at fair value through other comprehensive income－non-current	3,772	20,708	11.30%	20,708	3,772	11.30%	-
AMS	Stock: Futurepath Technology (Shenzhen) Co., Ltd.	-	Financial assets at fair value through other comprehensive income－non-current	31.5	153	0.03%	153	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:

(In Thousands of New Taiwan Dollars / In Thousands of Shares)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-Party	Name of Relationship	Beginning Balance		Acquisitions		Disposal				Ending Balance	
					Shares	Amount	Shares	Amount	Shares	Amount	Carrying Value	Gain (Loss) on Disposal	Shares	Amount (Note)
The Company	Common stock: UD INFO Corp.	Investments accounted for using equity method	UD INFO Corp.'s shareholders	-	-	-	4,932	380,815	-	-	-	-	4,932	419,568

Note: The ending balance includes shares of profits/losses of investees and other related adjustment.

(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)	(479,467)	(6) %	OA30	-	-	30,804	4 %	Note
The Company	AMK	The Company's subsidiary	(Sales)	(113,948)	(1) %	OA30	-	-	17,378	2 %	Note
The Company	AMH	The Company's subsidiary	(Sales)	(719,323)	(9) %	OA30	-	-	57,224	8 %	Note
The Company	AMC	The Company's subsidiary	(Sales)	(523,636)	(6) %	M60	-	-	60,729	8 %	Note
The Company	Phison	The Company's director	Purchases	1,073,281	18 %	M45	-	-	(134,255)	(21) %	-
UD	Phison	The Company's director	Purchases	130,914	72 %	M45	-	-	(79,955)	(78) %	-
AMA	The Company	AMA's parent company	Purchases	479,467	98 %	OA30	-	-	(30,804)	(100) %	Note
AMK	The Company	AMK's parent company	Purchases	113,948	100 %	OA30	-	-	(17,378)	(100) %	Note
AMH	The Company	AMH's parent company	Purchases	719,323	100 %	OA30	-	-	(57,224)	(100) %	Note
AMC	The Company	AMC's parent company	Purchases	523,636	100 %	M60	-	-	(60,729)	(99) %	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	479,467	OA30	5%
0	The Company	AMK	1	Sales	113,948	OA30	1%
0	The Company	AMH	1	Sales	719,323	OA30	8%
0	The Company	AMC	1	Sales	523,636	M60	6%
0	The Company	AMJ	1	Sales	55,107	M60	1%
0	The Company	UD	1	Sales	9,680	M30	-
1	UD	The Company	2	Sales	2,567	M30	-
0	The Company	AMA	1	Accounts receivable	30,804	OA30	1%
0	The Company	AMK	1	Accounts receivable	17,378	OA30	-
0	The Company	AMH	1	Accounts receivable	57,224	OA30	1%
0	The Company	AMC	1	Accounts receivable	60,729	M60	1%
0	The Company	AMJ	1	Accounts receivable	4,962	M60	-
0	The Company	UD	1	Accounts receivable	9,592	M30	-
1	UD	The Company	2	Accounts receivable	413	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:

(In Thousands of Shares)

Investor	Investee	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2022			Maximum Percentage of Ownership during 2022		Net Income (Loss) of the Investee	Investment Income (Loss)	Note
				December 31, 2022	December 31, 2021	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%	296,483	20	100%	16,837	16,837	Note
The Company	ACYB	British Virgin Islands	Investment and holding activity	18,542	18,542	2,636	100.00%	45,768	2,636	100%	4,211	4,211	Note
The Company	AMJ	Japan	Sales of memory modules and storage memory devices	2,918	2,918	0.2	100.00%	20,910	0.2	100%	2,406	2,406	Note
The Company	ATPL	India	Auxiliary sales of memory modules and storage memory devices	915	915	29	100.00%	1,430	29	100%	51	51	Note
The Company	AMK	Hong Kong	Sales of memory modules and storage memory devices	20,917	20,917	5,000	100.00%	12,306	5,000	100%	423	423	Note
The Company	AMH	Netherlands	Sales of memory modules and storage memory devices	130,469	130,469	80	100.00%	65,543	80	100%	11,799	11,799	Note
The Company	JoiiUp	Taiwan	Cloud services and software development	7,500	7,500	750	11.48%	444	750	11.48%	(8,014)	(920)	-
The Company	UD	Taiwan	Manufacture and sales of memory modules and storage memory devices	380,815	-	4,932	68.54%	419,568	4,932	68.54%	61,655	38,939	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, 2022	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2022	Net Income (Loss) of Investee	% of Ownership of Direct or Indirect Investment	Maximum Percentage of Ownership during 2022		Investment Income (Loss)	Carrying Value as of December 31, 2022	Accumulated Inward Remittance of Earnings as of December 31, 2022
					Outflow	Inflow				Shares	Percentage of Ownership			
Apacer Electronic (Shanghai) Co., Ltd (AMC)	Sales of memory modules and storage memory devices	15,357 (USD 500 thousand)	Type 2	15,357 (USD 500 thousand)	-	-	15,357 (USD 500 thousand)	4,172	100.00 %	(Note 4)	100.00%	4,172 (Note 2)	42,022	-
Shenzhen Kylinesports Technology Co. (AMS)	Sales of gaming products	22,975 (USD 748 thousand)	Type 2	18,368 (USD 598 thousand)	-	-	18,368 (USD 598 thousand) (Note 5)	(807)	99.00 %	(Note 4)	99.00%	(799) (Note 3)	12,845	-

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$30.715.

(ii) Limits on investments in Mainland China:

Investor	Accumulated Investment in Mainland China as of December 31, 2022	Investment Amounts Authorized by Investment Commission, MOEA	Upper Limit on Investment Authorized by Investment Commission, MOEA
The Company	33,725 (USD1,098 thousand)	37,841 (USD1,232 thousand)	2,498,513

(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.	11,000,000	8.96%

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:

	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

	2021			
	Asia	**America and Europe**	**Adjustments and eliminations**	**Total**
External revenue	$ 6,979,267	1,703,126	-	8,682,393
Intra-group revenue	2,400,013	995	(2,401,008)	-
Total segment revenue	$ 9,379,280	1,704,121	(2,401,008)	8,682,393
Segment profit (loss)	$ 577,947	31,205	(31,879)	577,273

(c) Product information

Revenues from external customers are detailed below:

Region	**2022**	**2021**
Memory modules	$ 3,604,832	4,073,395
Flash memory products	5,090,288	4,587,046
Others	101,915	21,952
	$ 8,797,035	8,682,393

(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		2022	2021
Taiwan	$	1,825,755	1,772,385
Hong Kong		1,404,514	637,956
Mainland China		846,584	886,773
Americas		786,196	1,162,669
Japan		530,195	405,802
Others		3,403,791	3,816,808
	$	**8,797,035**	**8,682,393**

Region		2022	2021
Taiwan	$	1,182,651	929,901
Americas		17,188	2,088
Netherland		10,484	1,547
Japan		660	3,072
Others		1,156	2,201
	$	**1,212,139**	**938,809**

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.

(2) 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 balance sheets as of December 31, 2022 and 2021, and the statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes to the financial statements, including a summary of significant 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, 2022 and 2021, 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 Auditing and Attestation of Financial Statements by 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 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 financial statements for the year ended December 31, 2022 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.

   Description of key audit matter:

   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.

   How the matter was addressed in our audit:

   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 with reference to actual write-off of inventories in a subsequent period; 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. Acquisition of subsidiary

   Please refer to notes 4(s) and 6(f) for the accounting policy on business combinations and "Investments accounted for using equity method" for the related disclosures, respectively, of the notes to the parent-company-only financial statements.

   Description of key audit matter:

   In August 2022, the Company issued additional shares of common stock in exchange for shares of common stock of UD INFO Corp. (UD), wherein the Company acquired 68.54% ownership of UD and obtained control over UD. To adopt the accounting treatment of business combination, the management needs to assess and determine the consideration transferred and the fair value of the identifiable assets and liabilities. The assessment is complex and involves significant assumptions and estimation. Therefore, the assessment of acquisition of subsidiary has been identified as one of the key audit matters.

   How the matter was addressed in our audit:

   In relation to the key audit matter above, our principal audit procedures included reviewing the share exchange agreement signed by both parties; understanding the related terms of scope of business combination and consideration transferred; inspecting the record of issuance of additional common shares to confirm the settlement of the share exchange transaction; obtaining the purchase price allocation report with valuation on intangible assets, conducted by an external expert engaged by the management; auditing the acquired assets and liabilities identified by the management, including any fair value adjustments at the acquisition date. In doing so, we have consulted internal valuation specialists to assist in evaluating the reasonableness of the valuation model and key assumptions used. We have also assessed whether correct accounting treatment has been applied, and appropriate disclosures with respect to the acquisition has been made.

3. Assessment of impairment of goodwill from investments in subsidiaries

Please refer to notes 4(m), 5(b) and 6(f)(iii) 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.

Description of key audit matter:

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.

How the matter was addressed in our audit:

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, 2022 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 21, 2023

Notes to Readers

The accompanying financial statements are intended only to present the 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 parent-company-only financial statements are those generally accepted and applied in the Republic of China.

The independent auditors’ report and the accompanying 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’ report and financial statements, the Chinese version shall prevail.

(English Translation of Parent-Company-Only Financial Statements Originally Issued in Chinese)

APACER TECHNOLOGY INC.

Balance Sheets

December 31, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars)

	Assets	December 31, 2022 Amount	%	December 31, 2021 Amount	%
	Current assets:				
1100	Cash and cash equivalents (note 6(a))	$ 797,322	14	336,246	7
1110	Financial assets at fair value through profit or loss－current (note 6(b))	-	-	110,748	2
1170	Notes and accounts receivable, net (notes 6(d) and (r))	535,434	10	1,114,944	23
1180	Accounts receivable from related parties (notes 6(d), (r) and 7)	181,113	3	188,027	4
1310	Inventories (note 6(e))	714,652	13	1,449,939	30
1470	Other current assets	85,451	2	72,362	2
1476	Other financial assets－current (note 6(a))	1,197,800	22	89,400	2
	Total current assets	3,511,772	64	3,361,666	70
	Non-current assets:				
1517	Financial assets at fair value through other comprehensive income－non-current (note 6(c))	29,616	-	25,749	-
1550	Investments accounted for using equity method (note 6(f))	862,452	16	372,453	8
1600	Property, plant and equipment (note 6(g))	854,215	16	858,517	18
1755	Right-of-use assets (note 6(h))	18,700	-	26,490	-
1780	Intangible assets (note 6(i))	39,156	1	43,043	1
1840	Deferred income tax assets (note 6(n))	164,300	3	136,677	3
1980	Other financial assets－non-current	2,205	-	2,394	-
1990	Other non-current assets	2,736	-	1,851	-
	Total non-current assets	1,973,380	36	1,467,174	30
	Total assets	$ 5,485,152	100	4,828,840	100

	Liabilities and Equity	December 31, 2022 Amount	%	December 31, 2021 Amount	%
	Current liabilities:				
2100	Short-term borrowings (note 6(j))	$ 92,145	2	251,979	5
2120	Financial liabilities at fair value through profit or loss－current (note 6(b))	1,012	-	133	-
2170	Notes and accounts payable	490,811	9	666,953	14
2180	Accounts payable to related parties (note 7)	134,803	3	203,237	4
2200	Other payables (note 6(s))	408,972	8	362,401	8
2220	Other payables to related parties (note 7)	1,583	-	1,482	-
2230	Current income tax liabilities	69,610	1	113,485	3
2250	Provisions－current (note 6(l))	9,500	-	10,224	-
2280	Lease liabilities－current (note 6(k))	9,062	-	8,710	-
2300	Other current liabilities (note 6(r))	73,419	1	59,752	1
	Total current liabilities	1,290,917	24	1,678,356	35
	Non-current liabilities:				
2570	Deferred income tax liabilities (note 6(n))	-	-	123	-
2580	Lease liabilities－non-current (note 6(k))	10,065	-	18,086	-
2640	Net defined benefit liabilities (note 6(m))	19,982	-	40,541	1
	Total non-current liabilities	30,047	-	58,750	1
	Total liabilities	1,320,964	24	1,737,106	36
	Equity (note 6(o)):				
3100	Common stock	1,226,882	23	1,018,243	21
3200	Capital surplus	924,322	17	389,146	8
3300	Retained earnings	2,100,373	38	1,819,067	38
3400	Other equity	(87,389)	(2)	(134,722)	(3)
	Total equity	4,164,188	76	3,091,734	64
	Total liabilities and equity	$ 5,485,152	100	4,828,840	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, 2022 and 2021

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

		2022		2021	
		Amount	%	Amount	%
4000	**Revenue (notes 6(r) and 7)**	$ 8,224,555	100	8,422,696	100
5000	**Cost of revenue (notes 6(e), (g), (i), (k), (l), (m), (p), 7 and 12)**	(6,882,195)	(84)	(7,204,894)	(86)
	Gross profit before unrealized gross profit	1,342,360	16	1,217,802	14
5920	Realized (unrealized) gross profit	913	-	(2,593)	-
	Gross profit	1,343,273	16	1,215,209	14
	Operating expenses (notes 6(d), (g), (h), (i), (k), (m), (p), (s), 7 and 12):				
6100	Selling expenses	(364,460)	(4)	(345,981)	(4)
6200	Administrative expenses	(218,850)	(3)	(202,314)	(2)
6300	Research and development expenses	(159,471)	(2)	(138,947)	(2)
6450	Reversal of (recognized) expected credit losses	(16,673)	-	3,065	-
6000	**Total operating expenses**	(759,454)	(9)	(684,177)	(8)
	Operating income	583,819	7	531,032	6
	Non-operating income and loss (notes 6(f), (g), (i), (k) and (t)):				
7100	Interest income	5,219	-	1,101	-
7020	Other gains and losses－net	12,332	-	6,855	-
7050	Finance costs	(6,217)	-	(3,188)	-
7070	Share of profits of subsidiaries and associates	73,746	1	30,775	1
	Total non-operating income and loss	85,080	1	35,543	1
	Income before income tax	668,899	8	566,575	7
7950	**Less: Income tax expenses (note 6(n))**	(109,773)	(1)	(80,787)	(1)
	Net income	559,126	7	485,788	6
	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	20,565	-	(11,295)	-
8316	Unrealized gains (losses) from investments in equity instruments measured at fair value through other comprehensive income	3,867	-	(10,361)	-
8330	Share of other comprehensive income of subsidiaries	(154)	-	(4)	-
8349	Less: income tax related to items that will not be reclassified subsequently to profit or loss	(4,113)	-	2,259	-
		20,165	-	(19,401)	-
8360	**Items that may be reclassified subsequently to profit or loss**				
8361	Exchange differences on translation of foreign operations	34,679	-	(6,458)	-
8399	Less: income tax related to items that may be reclassified subsequently to profit or loss	-	-	-	-
		34,679	-	(6,458)	-
	Other comprehensive income for the year, net of income tax	54,844	-	(25,859)	-
	Total comprehensive income for the year	$ 613,970	7	459,929	6
	Earnings per share (in New Taiwan dollars) (note 6(q)):				
9750	Basic earnings per share	$	5.23		4.81
9850	Diluted earnings per share	$	5.11		4.71

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, 2022 and 2021

(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, 2021	$ 1,008,978	361,519	381,780	78,579	1,087,641	1,548,000	(67,908)	(41,050)	-	(108,958)	2,809,539
Appropriation of earnings:											
Legal reserve	-	-	28,935	-	(28,935)	-	-	-	-	-	-
Special reserve	-	-	-	30,379	(30,379)	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(205,685)	(205,685)	-	-	-	-	(205,685)
Net income in 2021	-	-	-	-	485,788	485,788	-	-	-	-	485,788
Other comprehensive income in 2021	-	-	-	-	(9,036)	(9,036)	(6,458)	(10,365)	-	(16,823)	(25,859)
Total comprehensive income in 2021	-	-	-	-	476,752	476,752	(6,458)	(10,365)	-	(16,823)	459,929
Changes in equity of associates accounted for using equity method	-	1,128	-	-	-	-	-	-	-	-	1,128
Issuance of restricted stock to employees	9,265	26,499	-	-	-	-	-	-	(35,764)	(35,764)	-
Compensation cost arising from restricted stock issued to employees	-	-	-	-	-	-	-	-	26,823	26,823	26,823
Balance at December 31, 2021	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

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, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars)

	2022	2021
Cash flows from operating activities:		
Income before income tax	$ 668,899	566,575
Adjustments:		
Depreciation	41,604	42,432
Amortization	9,781	11,941
Recognized (reversal of) expected credit loss	16,673	(3,065)
Interest expense	6,217	3,188
Interest income	(5,219)	(1,101)
Share-based compensation cost	8,941	26,823
Share of profit of subsidiaries and associates	(73,746)	(30,775)
Gain on disposal of property, plant and equipment	(48)	-
Impairment loss on non-financial assets	303	140
Unrealized (realized) gross profit on sales to subsidiaries and associates	(913)	2,593
Subtotal	3,593	52,176
Changes in operating assets and liabilities:		
Changes in operating assets:		
Financial assets at fair value through profit or loss	669	(529)
Notes and accounts receivable	562,837	(440,906)
Accounts receivable from related parties	6,914	(62,941)
Inventories	735,287	(676,686)
Other current assets	(11,398)	(21,971)
Net changes in operating assets	1,294,309	(1,203,033)
Changes in operating liabilities:		
Financial liabilities at fair value through profit or loss	879	(35)
Notes and accounts payable	(176,142)	205,921
Accounts payable to related parties	(68,434)	(41,175)
Other payables	46,415	133,059
Other payables to related parties	101	(367)
Provisions	(724)	2,880
Other current liabilities	13,667	27,458
Net defined benefit liabilities	6	(10)
Net changes in operating liabilities	(184,232)	327,731
Total changes in operating assets and liabilities	1,110,077	(875,302)
Total adjustments	1,113,670	(823,126)
Cash provided by (used in) operations	1,782,569	(256,551)
Interest received	3,528	1,218
Interest paid	(6,061)	(3,114)
Income taxes paid	(185,507)	(89,665)
Net cash provided by (used in) operating activities	1,594,529	(348,112)

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, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars)

	2022	2021
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	-	(159,000)
Proceeds from disposal of financial assets at fair value through or profit or loss	110,079	98,135
Acquisition of property, plant and equipment	(28,392)	(23,824)
Proceeds from disposal of property, plant and equipment	48	-
Acquisition of intangible assets	(5,946)	(943)
Decrease (increase) in other financial assets—current	(1,108,400)	508,600
Decrease in other financial assets—non-current	189	398
Increase in other non-current assets	(885)	(2,271)
Net cash provided by (used in) investing activities	(1,033,307)	421,095
Cash flows from financing activities:		
Increase (decrease) in short-term borrowings	(159,834)	153,629
Payment of lease liabilities	(9,040)	(8,449)
Cash dividends distributed to shareholders	(294,272)	(205,685)
Capital increase in cash	363,000	-
Net cash used in financing activities	(100,146)	(60,505)
Net increase in cash and cash equivalents	461,076	12,478
Cash and cash equivalents at beginning of year	336,246	323,768
Cash and cash equivalents at end of year	$ 797,322	336,246

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, 2022 and 2021

(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 21, 2023.

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, 2022:

- Amendments to IAS 16 "Property, Plant and Equipment—Proceeds before Intended Use"
- Amendments to IAS 37 "Onerous Contracts—Cost of Fulfilling a Contract"
- Annual Improvements to IFRS Standards 2018–2020
- Amendments to IFRS 3 "Reference to the Conceptual Framework"

(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, 2023, would not have a significant impact on its parent-company-only financial statements:

- 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"

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

The following new and amended standards, which may be relevant to the Company, have been issued by the International Accounting Standards Board (IASB), but have yet to be endorsed by the FSC:

Standards or Interpretations	Content of amendment	Effective date per IASB
Amendments to IAS 1 "Classification of Liabilities as Current or Non-current"	Under existing IAS 1 requirements, companies classify a liability as current when they do not have an unconditional right to defer settlement for at least 12 months after the reporting date. The amendments has removed the requirement for a right to be unconditional and instead now requires that a right to defer settlement must exist at the reporting date and have substance. The amendments clarify how a company classifies a liability that can be settled in its own shares – e.g. convertible debt.	January 1, 2024

The Company is evaluating the impact of its initial adoption of the abovementioned standards or interpretations on its financial position and financial performance. The results thereof will be disclosed when the Company completes its evaluation.

The Company does not expect the following other 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 1 "Non-current Liabilities with Covenants"
- IFRS16 "Requirements for Sale and Leaseback Transactions"

4. Summary of significant accounting policies:

The significant 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, which is the Company's functional currency. Except when otherwise indicated, all financial information presented in New Taiwan dollars 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 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 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 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.

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: 2 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 (i) actuarial gains and losses; (ii) return on plan assets, excluding amounts included in net interest on the net defined benefit liability (asset); and (iii) 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 income taxes are recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred taxes are not recognized for:

(i) Temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit (losses) at the time of transaction;

(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-IFRSs.

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, 2022	December 31, 2021
Cash on hand	$ 12	10
Demand deposits	297,510	335,236
Time deposits with original maturities less than three months	499,800	1,000
	$ 797,322	336,246

As of December 31, 2022 and 2021, the time deposits with original maturities of more than three months amounted to $1,197,800 and $89,400, respectively, which were classified as other financial assets－current.

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

	December 31, 2022	December 31, 2021
Financial assets mandatorily measured at fair value through profit or loss－current:		
Open-ended mutual funds	$ -	110,013
Foreign currency forward contracts	-	414
Foreign exchange swaps	-	321
	$ -	110,748
Financial liabilities held for trading－current:		
Foreign currency forward contracts	$ (892)	(117)
Foreign exchange swaps	(120)	(16)
	$ (1,012)	(133)

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, 2022 and 2021, the derivative financial instruments that did not conform to the criteria for hedge accounting consisted of the following:

	December 31, 2021				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial assets－foreign currency forward contracts	JPY	40,900	$ 183	JPY / TWD	2022/01/26～2022/02/25
	USD	4,500	217	USD / TWD	2022/01/07～2022/01/13
	CNY	2,940	14	CNY / TWD	2022/01/26
			$ 414		
Financial assets－foreign exchange swaps	USD	3,500	$ 321	USD / TWD	2022/01/03~2022/01/18

	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 / TWD	2023/01/30
	CNY	8,500		(531)	CNY / TWD	2023/01/30
	USD	2,000		(93)	USD / TWD	2023/01/10~2023/01/13
			$	(892)		
Financial liabilities－foreign exchange swaps	USD	3,000	$	(120)	USD / TWD	2023/01/19

	December 31, 2021					
	Contract amount (in thousands)		Fair value		Currency (Sell / Buy)	Maturity period
Financial liabilities－foreign currency forward contracts	CNY	10,750	$	(117)	CNY / TWD	2022/01/26
Financial liabilities－foreign exchange swaps	USD	1,500	$	(16)	USD / TWD	2022/01/28

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

	December 31, 2022	December 31, 2021
Equity investments at fair value through other comprehensive income:		
Domestic unlisted stocks	$ 29,616	25,749

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, 2022 and 2021, and there were no transfers of any cumulative gain or loss within equity relating to these investments.

(d) Notes and accounts receivable

	December 31, 2022	December 31, 2021
Notes and accounts receivable	$ 557,255	1,120,092
Accounts receivable from related parties	181,113	188,027
	738,368	1,308,119
Less: loss allowance	(21,821)	(5,148)
	$ 716,547	1,302,971

As of December 31, 2022 and 2021, aside from recognizing impairment loss for credit-impaired accounts receivable amounting to $18,232 and $0, respectively, for notes and accounts receivable with gross carrying amounts of $18,232 and $0, 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, 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

	December 31, 2021		
	Gross carrying amount	Weighted-average loss rate	Loss allowance provision
Current	$ 1,217,579	0.0002%	2
Past due 1-90 days	88,182	3.1639%	2,788
Past due 91-180 days	32	98.8975%	32
Past due over 181 days	2,326	100%	2,326
	$ 1,308,119		5,148

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

	2022	2021
Balance at January 1	$ 5,148	8,213
Impairment loss recognized (reversed)	16,673	(3,065)
Balance at December 31	$ 21,821	5,148

(e) Inventories

		December 31, 2022	December 31, 2021
Raw materials	$	250,431	580,959
Work in process		103,625	184,871
Finished goods		328,459	597,370
Inventories in transit		32,137	86,739
	$	714,652	1,449,939

For the years ended December 31, 2022 and 2021, the amounts of inventories recognized as cost of revenue were as follows:

		2022	2021
Cost of inventories sold	$	6,691,192	7,049,943
Write-downs of inventories		191,000	155,000
Loss (gain) on physical inventory		3	(49)
	$	6,882,195	7,204,894

The above write-downs of inventories to net realizable value 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, 2022	December 31, 2021
Subsidiaries	$	862,008	371,089
Associates		444	1,364
	$	862,452	372,453

(i) Investments in subsidiaries

Please refer to the consolidated financial statements for the year ended December 31, 2022.

(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 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, 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 year ended December 31, 2022 was 16.71%, 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 a steady annual terminal growth rate for subsequent years, which was 1% for 2022. The key assumptions above represent the management's forecast of the future for the related industry, taking into considention the history information from internal and external sources.

(iv) Investments in associates

	December 31, 2022		December 31, 2021	
Name of Associates	**Percentage of voting rights**	**Carrying amount**	**Percentage of voting rights**	**Carrying amount**
JoiiUp Technology Inc.	11.48%	$ 444	11.48%	1,364

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, 2022	December 31, 2021
The aggregate carrying amount of associates that were not individually material	$ 444	1,364

		2022	2021
Attributable to the Company:			
Net loss	$	(920)	(1,104)
Other comprehensive income		-	-
Total comprehensive income	$	(920)	(1,104)

(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, 2022 and 2021 were as follows:

		Land	Buildings	Machinery and equipment	Other equipment	Equipment to be inspected and construction in progress	Total
Cost:							
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
Balance at January 1, 2021	$	556,498	302,321	183,456	102,957	9,577	1,154,809
Additions		-	7,930	5,185	2,771	7,938	23,824
Disposals		-	(185)	(3,900)	(33,161)	-	(37,246)
Reclassification		-	9,480	6,987	-	(16,467)	-
Balance at December 31, 2021	$	556,498	319,546	191,728	72,567	1,048	1,141,387
Accumulated depreciation and impairment loss:							
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
Balance at January 1, 2021	$	-	53,690	148,528	83,971	-	286,189
Depreciation		-	12,645	13,273	7,869	-	33,787
Disposals		-	(185)	(3,900)	(33,161)	-	(37,246)
Impairment loss		-	-	140	-	-	140
Balance at December 31, 2021	$	-	66,150	158,041	58,679	-	282,870
Carrying amount:							
Balance at December 31, 2022	$	556,498	242,675	35,636	14,141	5,265	854,215
Balance at December 31, 2021	$	556,498	253,396	33,687	13,888	1,048	858,517

For the years ended December 31, 2022 and 2021, the Company recognized an impairment loss on property, plant and equipment of $251 and $140, respectively, which were included in non-operating income and loss.

(h) Right-of-use assets

	Buildings	Other equipment	Total
Cost:			
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
Balance at January 1, 2021	8,114	15,203	23,317
Additions	16,322	3,924	20,246
Disposals	(7,721)	(383)	(8,104)
Balance at December 31, 2021	16,715	18,744	35,459
Accumulated depreciation:			
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
Balance at January 1, 2021	6,379	2,049	8,428
Depreciation	4,129	4,516	8,645
Disposals	(7,721)	(383)	(8,104)
Balance at December 31, 2021	2,787	6,182	8,969
Carrying amount:			
Balance at December 31, 2022	$ 9,750	8,950	18,700
Balance at December 31, 2021	13,928	12,562	26,490

(i) Intangible assets

(i) The details of costs, accumulated amortization and impairment loss of intangible assets for the years ended December 31, 2022 and 2021 were as follows:

	Computer software	Royalties for the use of patents	Total
Cost:			
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
Balance at January 1, 2021	$ 111,664	4,104	115,768
Additions	943	-	943
Reclassification	942	-	942
Derecognition	(6,203)	-	(6,203)
Balance at December 31, 2021	$ 107,346	4,104	111,450

		Computer software	Royalties for the use of patents	Total
Accumulated amortization and impairment loss:				
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
Balance at January 1, 2021	$	61,507	1,162	62,669
Amortization		11,719	222	11,941
Derecognition		(6,203)	-	(6,203)
Balance at December 31, 2021	$	67,023	1,384	68,407
Carrying amount:				
Balance at December 31, 2022	$	36,706	2,450	39,156
Balance at December 31, 2021	$	40,323	2,720	43,043

(ii) Amortization

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

		2022	2021
Cost of revenue	$	3,101	2,000
Operating expenses	$	6,680	9,941

(j) Short-term borrowings

The details of short-term borrowings were as follows:

		December 31, 2022	December 31, 2021
Unsecured bank loans	$	92,145	251,979
Unused credit facilities	$	1,829,440	1,612,131
Interest rate interval		5.03%	0.64%~0.79%

(k) Lease liabilities

The carrying amounts of lease liabilities were as follows:

		December 31, 2022	December 31, 2021
Current	$	9,062	8,710
Non-current	$	10,065	18,086

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

The amounts recognized in profit or loss were as follows:

		2022	2021
Interest on lease liabilities	$	595	612
Variable lease payments not included in the measurement of lease liabilities	$	1,233	1,126
Expenses relating to short-term leases	$	388	251

The amounts recognized in the statement of cash flows for the Company was as follows:

		2022	2021
Total cash outflow for leases	$	11,256	10,438

(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. In addition, 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, 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
Balance at January 1, 2021	$	4,659	2,685	7,344
Provisions made		4,045	26,652	30,697
Amount utilized		(1,677)	(26,140)	(27,817)
Balance at December 31, 2021	$	7,027	3,197	10,224

(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, 2022	December 31, 2021
Present value of defined benefit obligations	$ 60,106	79,355
Fair value of plan assets	(40,124)	(38,814)
	19,982	40,541
Effects of the asset ceiling	-	-
Net defined benefit liabilities	$ 19,982	40,541

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, 2022 and 2021, the Company' s labor pension fund account balance at Bank of Taiwan amounted to $40,124 and $38,814, 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:

		2022	2021
Defined benefit obligations at January 1	$	79,355	67,110
Current service costs and interest expense		613	514
Remeasurement on the net defined benefit liabilities (assets)			
－Actuarial loss arising from changes in demographic assumptions		-	1,884
－Actuarial loss (gain) arising from changes in financial assumptions		(18,157)	9,815
－Actuarial loss arising from experience adjustments		621	32
Benefits paid by the plan		(2,326)	-
Defined benefit obligations at December 31	$	60,106	79,355

3) Movements of fair value of plan assets

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

		2022	2021
Fair value of plan assets at January 1	$	38,814	37,854
Interest income		243	238
Remeasurement on the net defined benefit liabilities (assets)			
－Return on plan assets (excluding current interest expense)		3,029	436
Contributions by the employer		364	286
Benefits paid by the plan		(2,326)	-
Fair value of plan assets at December 31	$	40,124	38,814

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:

		2022	2021
Current service costs	$	117	95
Net interest expense on the net defined benefit liability		253	181
	$	370	276
Cost of revenue	$	114	86
Selling expenses		123	85
Administrative expenses		68	60
Research and development expenses		65	45
	$	370	276

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:

		2022	2021
Cumulative amount at January 1	$	42,328	31,033
Recognized during the period		(20,565)	11,295
Cumulative amount at December 31	$	21,763	42,328

7) Actuarial assumptions

The principal assumptions of the actuarial valuation were as follows:

	December 31, 2022	December 31, 2021
Discount rate	1.750%	0.625%
Future salary increases rate	3.000%	4.000%

The Company expects to make contribution of $372 to the defined benefit plans in the year following December 31, 2022.

The weighted average duration of the defined benefit plans is 14.63 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, 2022 and 2021.

	Increase (decrease) in present value of defined benefit obligations	
	0.25% Increase	**0.25% Decrease**
December 31, 2022		
Discount rate	(1,818)	1,894
Future salary change rate	1,835	(1,767)
December 31, 2021		
Discount rate	(2,698)	2,809
Future salary change rate	2,670	(2,583)

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 2022, 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 the Labor Insurance.

For the years ended December 31, 2022 and 2021, the Company recognized pension expenses of $18,475 and $18,053, respectively, in relation to the defined contribution plans.

(n) Income taxes

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

		2022	2021
Current income tax expense			
Current period	$	141,763	141,764
Adjustments for prior years		(131)	(14,730)
		141,632	127,034
Deferred income tax benefit			
Origination and reversal of temporary differences		(31,859)	(46,247)
Income tax expense	$	109,773	80,787

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

		2022	2021
Items that will not be reclassified subsequently to profit or loss:			
Remeasurement of defined benefit plans	$	4,113	(2,259)

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

		2022	2021
Income before income tax	$	668,899	566,575
Income tax using the Company's statutory tax rate	$	133,780	113,315
Investment tax credits		(13,831)	(8,337)
Changes in unrecognized temporary differences		(14,271)	(6,343)
Prior-year adjustments		(131)	(14,730)
Surtax on undistributed earnings		4,699	1,218
Others		(473)	(4,336)
	$	109,773	80,787

(ii) Deferred income tax assets and liabilities

1) Unrecognized deferred income tax assets and liabilities

		December 31, 2022	December 31, 2021
Unrecognized deferred income tax assets:			
Aggregate deductible temporary differences associated with investments in subsidiaries	$	14,707	18,555
Deductible temporary differences		788	788
	$	15,495	19,343

	December 31, 2022	December 31, 2021
Unrecognized deferred income tax liabilities:		
Aggregate taxable temporary differences associated with investments in subsidiaries	$ 68,321	57,898

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, 2022 and 2021, 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, 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
Balance at January 1, 2021	$ 5,852	60,473	932	10,000	10,791	88,048
Recognized in profit or loss	(2)	31,000	473	-	14,899	46,370
Recognized in other comprehensive income	2,259	-	-	-	-	2,259
Balance at December 31, 2021	$ 8,109	91,473	1,405	10,000	25,690	136,677

Deferred income tax liabilities:

	Others
Balance at January 1, 2022	$ 123
Recognized in profit or loss	(123)
Balance at December 31, 2022	$ -
Balance at January 1, 2021	$ -
Recognized in profit or loss	123
Balance at December 31, 2021	$ 123

(iii) The Company's income tax returns for the years through 2020 have been assessed by the R.O.C. income tax authorities.

(o) Capital and other equity

(i) Common stock

As of December 31, 2022 and 2021, the Company’s authorized shares of common stock consisted of 200,000 thousand shares, of which 122,688 and 101,824 thousand shares, respectively, were issued. As of December 31, 2022 and 2021, as the shares of restricted stock to employees amounting to 463 and 926 thousand shares, respectively, were not yet vested, the Company’s outstanding shares of common stock were 122,225 and 100,898 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	
	2022	**2021**
Balance at January 1	100,898	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	-
Balance at December 31	122,225	100,898

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 will issue 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 will be 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, 2022	December 31, 2021
Paid-in capital in excess of par value	$ 866,883	331,707
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	14,258	14,258
	$ 924,322	389,146

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 Ruling No. 1010012865 issued by the FSC on April 6, 2012, a special reserve equal to the total amount of items that were accounted for as deductions from shareholders' equity was set aside from current and prioryear earnings. This special reserve shall revert to the retained earnings and be made available for distribution when the items that are accounted for as deductions from shareholders' equity are reversed in subsequent periods.

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 appropriation of 2021 earnings was approved by the Company's Board of Directors on February 23, 2022 and the appropriation of 2020 earnings was approved by the shareholders at the meeting on July 14, 2021, respectively. The resolved appropriation of the cash dividend per share were as follows:

	2021		2020	
	Dividends per share (in dollars)	**Amount**	**Dividends per share (in dollars)**	**Amount**
Dividends per share:				
Cash dividends	$ 2.89	**294,272**	2.02	**205,685**

On February 21, 2023, the cash dividends appropriated from 2022 earnings approved by the Company's Board of Directors were as follows:

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

(iv) Other equity items (net after tax)

1) Foreign currency translation differences

	2022	2021
Balance at January 1	$ (74,366)	(67,908)
Foreign exchange differences arising from translation of foreign operations	34,679	(6,458)
Balance at December 31	**$ (39,687)**	**(74,366)**

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

	2022	2021
Balance at January 1	$ (51,415)	(41,050)
Share of other comprehensive income of subsidiaries	(154)	(4)
Unrealized gains (losses) from investments in equity instruments measured at fair value through other comprehensive income	3,867	(10,361)
Balance at December 31	**$ (47,702)**	**(51,415)**

3) Unearned compensation cost

	2022	2021
Balance at January 1	$ (8,941)	-
Issuance of restricted stock to employees	-	(35,764)
Compensation cost arising from restricted stock issued to employees	8,941	26,823
Balance at December 31	**$ -**	**(8,941)**

(p) Share-based payment—Restricted stock to employees

As of December 31, 2022 and 2021, 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:

	2022	**2021**
Balance at January 1	926	-
Granted	-	926
Vested	(463)	-
Balance at December 31	**463**	**926**

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, 2022 and 2021, the compensation cost for the restricted shares of stock amounted to $8,941 and $26,823, respectively.

(ii) Employee compensation cost

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

	2022	2021
Compensation cost from restricted stock issued to employee	$ 8,941	26,823

(q) Earnings per share (“EPS”)

(i) Basic earnings per share

	2022	2021
Net income attributable to shareholders of the Company	$ 559,126	485,788
Weighted-average number of ordinary shares outstanding (in thousands)	106,846	100,898
Basic earnings per share (in dollars)	$ 5.23	4.81

(ii) Diluted earnings per share

	2022	2021
Net income attributable to shareholders of the Company	$ 559,126	485,788
Weighted-average number of ordinary shares outstanding (in thousands)	106,846	100,898
Effect of dilutive potential common stock (in thousand):		
Remuneration to employees	2,195	1,430
Restricted stock to employees	463	726
Weighted-average number of ordinary shares outstanding (including effect of dilutive potential common stock)	109,504	103,054
Diluted earnings per share (in dollars)	$ 5.11	4.71

(r) Revenue from contracts with customers

(i) Disaggregation of revenue

	2022	2021
Major products:		
Flash memory cards	$ 4,647,218	4,441,455
Memory modules	3,475,422	3,959,289
Others	101,915	21,952
	$ 8,224,555	8,422,696

(ii) Contract balances

	December 31, 2022	**December 31, 2021**	**January 1, 2021**
Notes and accounts receivable (including related parties)	$ 738,368	1,308,119	804,272
Less: loss allowance	(21,821)	(5,148)	(8,213)
	$ 716,547	1,302,971	796,059

	December 31, 2022	**December 31, 2021**	**January 1, 2021**
Contract liabilities (presented under other current liabilities)	$ 49,801	35,738	10,503

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, 2022 and 2021 that were included in the contract liability balances at January 1, 2022 and 2021, were $35,603 and $9,504, 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, 2022 and 2021, the Company estimated its remuneration to employees amounting to $83,479 and $62,103, respectively, and the remuneration to directors amounting to $10,683 and $8,926, 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

	2022	2021
Interest income from bank deposits	$ 5,219	1,101

(ii) Other gains and losses－net

	2022	2021
Foreign currency exchange gains	$ 42,354	5,611
Losses on financial assets and liabilities at fair value through profit or loss	(37,511)	(1,038)
Gain on disposal of property, plant and equipment	48	-
Impairment loss on non-financial assets	(303)	(140)
Others	7,744	2,422
	$ 12,332	6,855

(iii) Finance costs

	2022	2021
Interest expense from bank loans	$ 5,622	2,576
Interest expense from lease liabilities	595	612
	$ 6,217	3,188

(u) Financial instruments

(i) Categories of financial instruments

1) Financial assets

	December 31, 2022	December 31, 2021
Financial assets at fair value through profit or loss	$ -	110,748
Financial assets at fair value through other comprehensive income	29,616	25,749
Financial assets measured at amortized cost:		
Cash and cash equivalents	797,322	336,246
Notes and accounts receivable (including related parties)	716,547	1,302,971
Other financial assets (including current and non-current)	1,200,005	91,794
Subtotal	2,713,874	1,731,011
Total	$ 2,743,490	1,867,508

2) Financial liabilities

	December 31, 2022	December 31, 2021
Financial liabilities at fair value through profit or loss	$ 1,012	133
Financial liabilities measured at amortized cost:		
Short-term borrowings	92,145	251,979
Notes and accounts payable (including related parties)	625,614	870,190
Other payables (including related parties)	410,555	363,883
Lease liabilities (including current and non-current)	19,127	26,796
Subtotal	1,147,441	1,512,848
Total	**$ 1,148,453**	**1,512,981**

(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, 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

	December 31, 2021				
		Fair Value			
	Carrying amount	**Level 1**	**Level 2**	**Level 3**	**Total**
Financial assets at fair value through profit or loss — current:					
Open-ended mutual funds	$ 110,013	110,013	-	-	110,013
Derivatives — foreign currency forward contracts	414	-	414	-	414
Derivatives — foreign exchange swaps	321	-	321	-	321
	$ 110,748	110,013	735	-	110,748
Financial assets at fair value through other comprehensive income — non-current:					
Domestic unlisted stocks	$ 25,749	-	-	25,749	25,749
Financial liabilities at fair value through profit or loss — current:					
Derivatives — foreign currency forward contracts	$ 117	-	117	-	117
Derivatives — foreign exchange swaps	16	-	16	-	16
	$ 133	-	133	-	133

(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.

The fair values of open-ended mutual funds with standard terms and conditions, and traded in active markets are 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, 2022 and 2021.

(v) Movement in financial assets included in Level 3 of fair value hierarchy:

	2022	2021
Balance, beginning of year	$ 25,749	36,110
Gains (losses) recognized in other comprehensive income, and presented in unrealized gains (losses) on financial assets measured at fair value through other comprehensive income	3,867	(10,361)
Balance, end of year	**$ 29,616**	**25,749**

(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, 2022 and 2021, the Company’s maximum exposure to credit risk amounted to $2,743,490 and $1,867,508, 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, 2022 and 2021, the Company has insured credit insurance that cover accounts receivable amounting to $246,712 and $416,487, 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, 2022 and 2021, the Company had unused credit facilities of $1,829,440 and $1,612,131, 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, 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)	-
December 31, 2021					
Non-derivative financial liabilities:					
Short-term borrowings	$	251,979	(252,175)	(252,175)	-
Notes and accounts payable (including related parties)		870,190	(870,190)	(870,190)	-
Other payables (including related parties)		363,883	(363,883)	(363,883)	-
Lease liabilities		26,796	(27,853)	(9,276)	(18,577)
Derivative financial instruments:					
Foreign currency forward contracts：					
Inflow		-	46,476	46,476	-
Outflow		117	(46,593)	(46,593)	-
Foreign exchange swaps:					
Inflow		-	41,503	41,503	-
Outflow		16	(41,519)	(41,519)	-

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 fnancial 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, 2022				
	Foreign currency (in thousands)	**Exchange rate**	**TWD (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

	December 31, 2021				
	Foreign currency (in thousands)	Exchange rate	TWD (in thousands)	Change in magnitude	Pre-tax effect on profit or loss (in thousands)
Financial assets					
Monetary items					
USD	$ 43,187	27.690	1,195,848	1%	11,958
CNY	19,036	4.345	82,711	1%	827
JPY	43,430	0.240	10,423	1%	104
Financial liabilities					
Monetary items					
USD	33,608	27.690	930,606	1%	9,306
CNY	127	4.345	552	1%	6
JPY	276	0.240	66	1%	1

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 gain (loss) for the years ended December 31, 2022 and 2021 were $42,354 and $5,611, 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, 2022 and 2021 would have been $921 and $2,520, 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.

The investment target of open-ended mutual funds held by the Company are mostly monetary funds or bond funds. (accounted for as financial assets at fair value through profit or loss—current). The Company anticipates that there is no significant market risk related to the funds.

(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 ratio at the end of each reporting period was as follows:

	December 31, 2022	December 31, 2021
Total liabilities	$ 1,320,964	1,737,106
Total equity	$ 4,164,188	3,091,734
Liability-to-equity ratio	31.72%	56.19%

The total equity of the Company increased due to the issuance of additional 9,864 thousand shares of common stock in exchange for 4,932 thousand shares of common stock of UD on August 1, 2022 and issuance of additional 11,000 thousand of common shares in cash on November 17, 2022. In addition, the Company decreased its notes and accounts payable, and bank loans due to the decrease of stock level. The abovementioned increase in total equity of the Company and the decrease in its notes and accounts payable, and bank loans both resulted in the decreasing 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, 2022 and 2021, please refer to note 6(h).

(ii) Reconciliation of liabilities arising from financing activities were as follows:

	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

	January 1, 2021	Cash flows	Non-cash changes Acquisition	December 31, 2021
Short-term borrowings	$ 98,350	153,629	-	251,979
Lease liabilities	14,999	(8,449)	20,246	26,796
	$ 113,349	145,180	20,246	278,775

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

	2022	2021
Subsidiaries:		
AMA	$ 479,467	847,142
Others	1,421,694	1,549,527
The Company’s key management personnel (the Company’s director)	8,412	11,609
	$ 1,909,573	2,408,278

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

		2022	2021
Subsidiaries	$	2,585	1,013
The Company's key management personnel—Phison (the Company's director)		1,073,281	1,154,468
Other related parties		432	-
	$	1,076,298	1,155,481

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, 2022	December 31, 2021
Accounts receivable from related parties	Subsidiaries:			
	AMC	$	60,729	82,156
	AMH		57,224	49,047
	AMA		30,804	23,490
	AMK		17,378	22,545
	Others		14,601	8,369
	The Company's key management personnel (the Company's director)		377	2,420
		$	181,113	188,027

(iv) Payables

Account	Related-party categories		December 31, 2022	December 31, 2021
Accounts payable to related parties	Subsidiaries	$	413	629
	Other related parties		135	-
	The Company's key management personnel－Phison (the Company's director)		134,255	202,608
Other payables to related parties	Subsidiaries		1,437	1,407
	The Company's key management personnel (the Company's director)		146	75
		$	136,386	204,719

(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	2022	2021
Operating expenses	Associate	$ 50	50
	Other related parties	3	-
	The Company's key management personnel (the Company's director)	440	266
		$ 493	316

(c) Compensation for key management personnel

	2022	2021
Short-term employee benefits	$ 78,344	64,842
Post-employment benefits	432	432
Share-based payments	3,875	11,623
	$ 82,651	76,897

8. Pledged assets: None

9. Significant commitments and contingencies:

As of December 31, 2022 and 2021, 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:

	2022			2021		
	Cost of revenue	Operating expenses	Total	Cost of revenue	Operating expenses	Total
Employee benefits:						
Salaries	155,492	452,147	607,639	143,160	398,523	541,683
Insurance	13,432	26,703	40,135	12,877	25,408	38,285
Pension	5,600	13,245	18,845	5,395	12,934	18,329
Remuneration to directors	-	16,533	16,533	-	14,777	14,777
Others	8,474	24,286	32,760	8,629	43,160	51,789
Depreciation	18,660	22,944	41,604	19,982	22,450	42,432
Amortization	3,101	6,680	9,781	2,000	9,941	11,941

For the years ended December 31, 2022 and 2021, the information on the number of employees and employee benefit expense of the Company is as follows:

	2022	2021
The number of employees	477	467
The number of non-employee directors	7	7
Average employee benefits	$ 1,488	1,413
Average employee salaries	$ 1,293	1,178
Average employee salaries adjustment rate	9.76%	20.70%
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, 2022:

(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, 2022 Shares/ Units	Carrying Value	Percentage of Ownership	Fair value	Note
The Company	Stock: Formosa Golf and Country Club Corp.	-	Financial assets at fair value through other comprehensive income －non-current	3.6	8,908	0.01%	8,908	-
The Company	Stock: OTO Photonics Inc.	-	Financial assets at fair value through other comprehensive income －non-current	3,772	20,708	11.30%	20,708	-
AMS	Stock: Futurepath Technology (Shenzhen) co., ltd	-	Financial assets at fair value through other comprehensive income －non-current	31.5	153	0.03%	153	-

(iv) Marketable securities for which the accumulated purchase or sale amounts for the year exceed $300 million or 20% of the paid-in capital:

(In Thousands of Shares / Thousands of Units)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counter-Party	Name of Relationship	Beginning Balance		Acquisitions		Disposal				Ending Balance	
					Shares	Amount	Shares	Amount	Shares	Amount	Carrying Value	Gain (Loss) on Disposal	Shares	Amount (Note)
The Company	Common stock: UD INFO Corp	Investments accounted for using equity method	UD INFO Corp.'s shareholders	-	-	-	4,932	380,815	-	-	-	-	4,932	419,568

Note: The ending balance includes shares of profits/losses of investees and other related adjustment.

(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)	(479,467)	(6) %	OA30	-	-	30,804	4 %	
The Company	AMK	The Company's subsidiary	(Sales)	(113,948)	(1) %	OA30	-	-	17,378	2 %	
The Company	AMH	The Company's subsidiary	(Sales)	(719,323)	(9) %	OA30	-	-	57,224	8 %	
The Company	AMC	The Company's subsidiary	(Sales)	(523,636)	(6) %	M60	-	-	60,729	8 %	
The Company	Phison	The Company's director	Purchases	1,073,281	18 %	M45	-	-	(134,255)	(21) %	
UD	Phison	The Company's director	Purchases	130,914	72 %	M45	-	-	(79,955)	(78) %	
AMA	The Company	AMA's parent company	Purchases	479,467	98 %	OA30	-	-	(30,804)	(100) %	
AMK	The Company	AMK's parent company	Purchases	113,948	100 %	OA30	-	-	(17,378)	(100) %	
AMH	The Company	AMH's parent company	Purchases	719,323	100 %	OA30	-	-	(57,224)	(100) %	
AMC	The Company	AMC's parent company	Purchases	523,636	100 %	M60	-	-	(60,729)	(99) %	

(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: December 31, 2022	Original Investment Amount: December 31, 2021	Balance as of December 31, 2022: Shares	Balance as of December 31, 2022: Percentage of Ownership	Balance as of December 31, 2022: Carrying Value	Net Income (Loss) of the Investee	Investment Income (Loss)	Note
The Company	AMA	USA	Sales of memory modules and storage memory devices	610	610	20	100.00%	296,483	16,837	16,837	
The Company	ACYB	British Virgin Islands	Investment and holding activity	18,542	18,542	2,636	100.00%	45,768	4,211	4,211	
The Company	AMJ	Japan	Sales of memory modules and storage memory devices	2,918	2,918	0.2	100.00%	20,910	2,406	2,406	
The Company	ATPL	India	Auxiliary sales of memory modules and storage memory devices	915	915	29	100.00%	1,430	51	51	
The Company	AMK	Hong Kong	Sales of memory modules and storage memory devices	20,917	20,917	5,000	100.00%	12,306	423	423	
The Company	AMH	Netherlands	Sales of memory modules and storage memory devices	130,469	130,469	80	100.00%	65,543	11,799	11,799	
The Company	JoiiUp	Taiwan	Cloud services and software development	7,500	7,500	750	11.48%	444	(8,014)	(920)	
The Company	UD	Taiwan	Manufacture and sales of memory modules and storage memory devices	380,815	-	4,932	68.54%	419,568	61,655	38,939	

(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, 2022	Investment Flows: Outflow	Investment Flows: Inflow	Accumulated Outflow of Investment from Taiwan as of December 31, 2022	Net Income (Loss) of Investee	% of Ownership of Direct or Indirect Investment	Investment Income (Loss)	Carrying Value as of December 31, 2022	Accumulated Inward Remittance of Earnings as of December 31, 2022
Apacer Electronic (Shanghai) Co., Ltd (AMC)	Sales of memory modules and storage memory devices	15,357 (USD 500 thousand)	Type 2	15,357 (USD 500 thousand)	-	-	15,357 (USD 500 thousand)	4,172	100.00 %	4,172 (Note 2)	42,022	-
Shenzhen Kylinesports Technology Co. (AMS)	Sales of gaming products	22,975 (USD 748 thousand)	Type 2	18,368 (USD 598 thousand)	-	-	18,368 (USD 598 thousand) (Note 5)	(807)	99.00 %	(799) (Note 3)	12,845	-

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$30.715.

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, 2022	Investment Amounts Authorized by Investment Commission, MOEA	Upper Limit on Investment Authorized by Investment Commission, MOEA
The Company	33,725 (USD1,098 thousand)	37,841 (USD1,232 thousand)	2,498,513

(iii) Significant transactions with investee companies in Mainland China:

Please refer to section "Information on significant transactions" for detail description.

(d) Major shareholders:

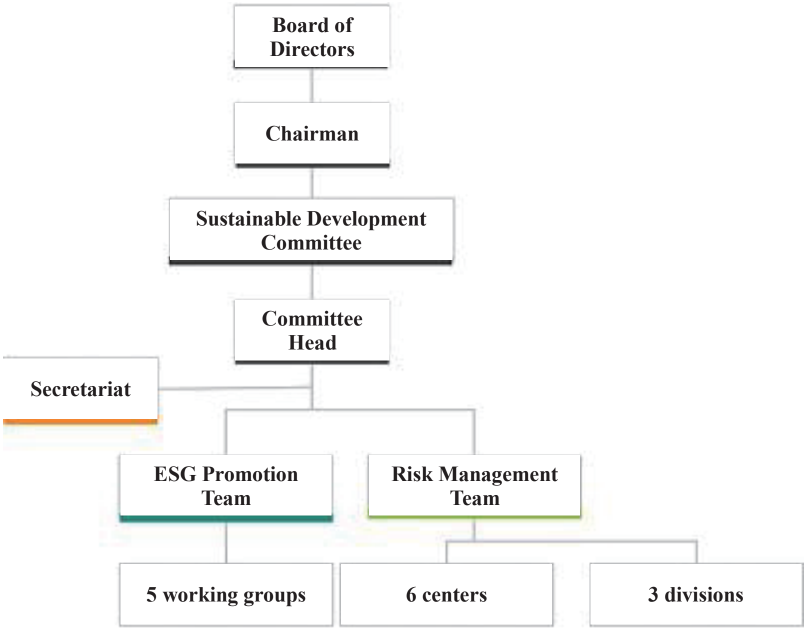
Shareholding Major Shareholder's Name	Shares	Percentage
Phison Electronics Corporation	12,554,580	10.23%
Acer Inc.	11,000,000	8.96%

14. Segment information:

Please refer to the consolidated financial statements for the years ended December 31, 2022 and 2021 for disclosure of segment information.

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

Risk management organization structure and functions:



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

1. Financial status

Unit: TWD 1,000

Item \ Year	2022	2021	Difference	
			Amount	%
Current assets	4,598,725	3,765,156	833,569	22.14
Long-term investments	30,213	27,420	2,793	10.19
Property, plant and equipment	917,402	861,356	56,046	6.51
Right-of-use assets	46,445	32,455	13,990	43.11
Intangible assets	245,556	43,147	202,409	469.11
Other assets	183,695	148,534	35,161	23.67
Total assets	6,022,036	4,878,068	1,143,968	23.45
Current liabilities	1,609,246	1,713,603	(104,357)	(6.09)
Non-current liabilities	108,881	72,595	36,286	49.98
Total liabilities	1,718,127	1,786,198	(68,071)	(3.81)
Share capital	1,226,882	1,018,243	208,639	20.49
Capital reserve	924,322	389,146	535,176	137.53
Retained earnings	2,100,373	1,819,067	281,306	15.46
Other equities	(87,389)	(134,722)	47,333	(35.13)
Treasury shares	-	-	-	-
Equity attributed to stockholders of the company	4,164,188	3,091,734	1,072,454	34.69
Non-controlling interests	139,721	136	139,585	102,636.03
Total equity	4,303,909	3,091,870	1,212,039	39.20

Changes of more than 20%, or more than TWD 10 million are described below:

1. The increase in “current assets”: This was mainly due to the significant increase in cash and cash equivalents as a result of the increase in consolidated entities and the cash capital increase by way of private placement in this year.
2. The increase in “right-of-use assets”: This was mainly due to the higher book value of right-of-use assets as a result of the long-term lease renewal for the overseas office.
3. The increase in “intangible assets”: This was mainly due to the better goodwill and increase in identifiable intangible assets as a result of the business merger and acquisition.
4. The increase in “other assets” was mainly due to an increase in deferred income tax.
5. The increase in “non-current liabilities”: This was mainly due to a rise in non-current liabilities as a result of the increase in consolidated entities in this year.
6. The increase in “share capital” and “capital reserve”: There was a significant rise in the share capital and capital reserve due to the new share issuance for acquisition of UD info’s shares and the inclusion of Acer through cash capital increase by way of private placement in this year.
7. The increase in “other equities”: This was mainly due to the recognition of conversion differences in the financial statements of overseas business entities and the unearned stock based employee compensation.
8. The increase in “non-controlling interests”: There was a significant rise in the non-controlling interests mainly due to the business merger and acquisition.

2. Financial performance

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

Unit: TWD 1,000

Item \ Year	2022	2021	Difference	
			Amount	%
Operating revenue	8,797,035	8,682,393	114,642	1.32
Gross operating profit	1,688,414	1,452,884	235,530	16.21
Operating income	694,122	573,060	121,062	21.13
Non-operating income and expenses	19,353	4,213	15,140	359.36
Net profit before tax	713,475	577,273	136,202	23.59
Net profit for the current period	576,991	485,781	91,210	18.78
Other comprehensive income for the period (net income after taxes)	54,844	(25,859)	80,703	(312.09)
Total consolidated income for the current period	631,835	459,922	171,913	37.38

Changes of more than 20%, or more than TWD 10 million are described below:

1. The increase in “operating income”, “net profit before tax”, “net profit for the current period”, and “total consolidated income for the current period”: This was mainly due to the rapid adjustment to sales strategies in response to the weak global market demand in this year, together with the effect of merger and acquisition, which led to a significant rise in profits.
2. The increase in “non-operating income and expenses”: This was mainly due to the increase in interest income and income from insurance compensation.
3. The increase in “other comprehensive income for the period”: This was mainly due to the recognition of conversion differences in the financial statements of overseas business entities and the unearned stock based employee compensation.

(2) 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, our company expects to achieve its sales target for 2023.

3. Cash flow

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

Unit: TWD 1,000

Item \ Year	2022	2021	Difference	
			Amount	%
Operating activity	1,797,221	(321,343)	2,118,564	(659.28)
Investment activity	(917,456)	421,572	(1,339,028)	(317.63)
Financing activity	(144,341)	(62,341)	(82,000)	131.53

Changes of more than 20%, or more than TWD 10 million are described below:

1. The increase in net cash inflow from operating activities was mainly due to the decrease in inventory purchases as a result of the adjustment to inventory level.
2. The increase in net cash outflow from investment activities was mainly due to an increase in time deposits with a term of three months or longer in the current period.
3. The increase in net cash outflow from financing activities was mainly due to the decrease in short-term loans in the current period.

(2) Improvement plan for lack of liquidity: None.
(3) Cash flow analysis for the coming year:

Unit: TWD 1,000

Cash balance at beginning of period	Net cash flow from activities	Annual cash inflow	Cash surplus (deficiency) amount	Remedy for cash shortage	
				Investment plan	Financial plan
1,419,376	(216,582)	(358,892)	843,902	-	-

4. The effect upon financial operations of any major capital expenditures during the most recent fiscal year: None.
5. The reinvestment policy of the past year, reasons for profits or losses, the improvement plan and investment plan for the coming year:
   (1) The reinvestment policy of the past year: Our company's reinvestment policy mainly aimed to increase revenue and profit.
   (2) 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.
   (3) 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.
6. Risk matters requiring analysis and evaluation
   (1) 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
      A. 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 consolidated company’s net profit before tax in 2022 would decrease or increase by TWD 921,000.

      B. 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.

Unit: TWD 1,000; %

Item / Year	2022
Consolidated net operating income (A)	8,797,035
Consolidated net operating profit (B)	694,122
Consolidated net gains (losses) from foreign exchange (C)	44,437
(C)/(A)	0.51%
(C)/(B)	6.40%

C. Inflation

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

(2) 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

A. Our company engagement in high-risk, high-leverage investments: None.

B. Our company has not lent out, endorsed, or guaranteed any third-party funding.

C. 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".

(3) Future R&D plan and expected R&D expenses

A. Our research and development plan for 2023 includes the following:

(A) 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 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 45,000,000 in R&D for this area in 2023.

(B) 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 35,000,000 in R&D for this area in 2023.

(C) 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 20,000,000 in R&D for this area in 2023.

(D) 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 TWD 10,000,000 in R&D for this area in 2023.

B. Estimated investments in R&D

Our R&D expenses in 2022 were TWD 165,679,000. We expect to invest TWD 163,273,000 in research and development in 2023. Competition in the market for consumer and embedded storage and 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.

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

(A) Mastery of high-speed transmission core technologies and R&D of storage applications and algorithms.

(B) R&D personnel experienced in software, hardware, system and system architecture.

(C) Electromechanical integration capabilities for firmware, hardware, mechanisms, and systems.

(D) Capabilities in storage testing and verification as well as system technical support.

(4) Impacts from changes in domestic/foreign important policies and laws on the finance and business of the Company, 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.

(5) Impacts from changes in technology (including cyber security risk) and industry on the finance and business of the Company, 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.

(6) Impacts from changes in corporate image on 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.

(7) Expected benefits and potential risks from a merger or acquisition:

On June 2, 2022, the Company’s Board of Directors adopted the proposal for a merger with UD info Corp. The purpose of the proposal is to enhance the competitiveness in the market and increase the operational synergy of the Group. Both companies have their own strengths in terms of customer applications, which will facilitate the development of the memory business, expansion of the overseas niche markets, and promotion of the existing application fields. After forming a strategic alliance through share exchange, both parties have progressively implemented the cooperation plan. As the combination of the respective technical strengths is helpful to the expansion of the product applications and market share of the Group, there will be a beneficial effect on the finances, business and shareholders’ equity of the Company.

(8) 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.

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

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

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

(10) 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.

(11) Impacts and risks from changes in the Company's operating rights, and response measures: None.

(12) Litigation and non-litigious events

A. 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.

B. 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.

(13) Other major risks and response measures: None.

7. Other important matters: None.

VIII. Special Items

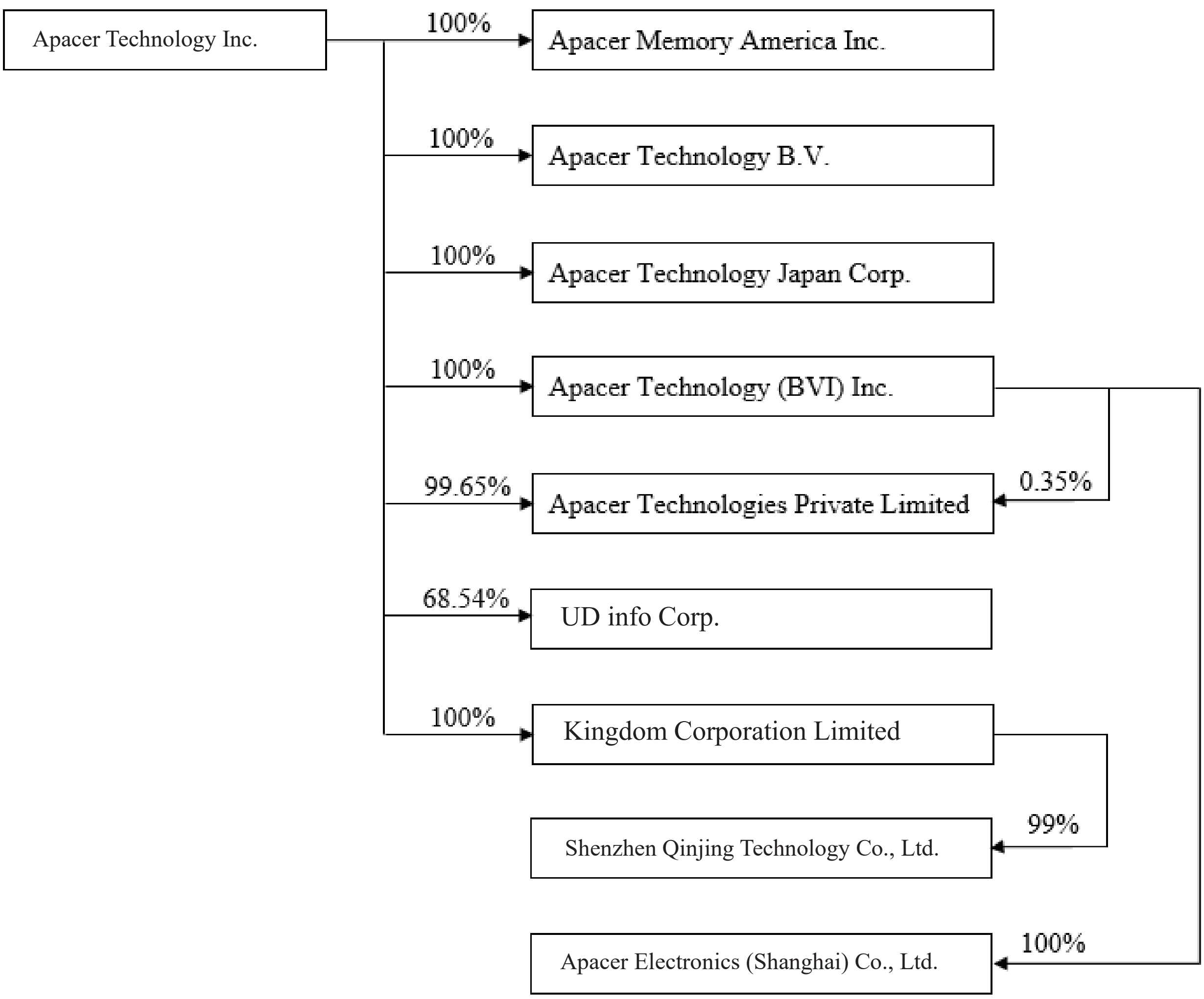
1. Information on affiliated companies

(1) Consolidated business report of affiliated companies

A.Overview of affiliated enterprises

(A) Organization chart of affiliated companies

December 31, 2022



(B) Basic information of each company

December 31, 2022

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=1:30.715)	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=1:30.715)	Professional investment and foreign stock holding
Apacer Technology Japan Corp.	2000.07.21	Roppoto Fa Center, 1-9-1, Nagase, Mihama-Ku, Chiba-Shi, Chiba, Japan	JPY 10,000,000 (JPY:TWD=1:0.233)	Sales of memory modules and 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=1:0.371)	Assisting sales of memory modules and storage memory devices

Company name	Date of establishment	Address	Amount of paid-up capital	Main business items
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=1:3.939)	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: 30.715)	Sales of memory modules and storage memory devices
Apacer Electronics (Shanghai) Co., Ltd.	2001.10.16	Room 207, No.80 Xinling Road, Shanghai Pilot Free Trade Zone, China	USD 500,000 (USD:TWD=1: 30.715)	Sales of memory modules and storage memory devices
Shenzhen Qinjing Technology Co., Ltd.	2016.06.03	Room 2505, Block A, World Trade Plaza, Fuhong Road, Futian Avenue, Futian District, Shenzhen, China	RMB 5,000,000 (RMB:TWD=1: 4.422)	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

(C) Information on the same shareholders involved with or controlling affiliated companies: None.

(D) 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.

(E) Information on directors, supervisors, and president of the affiliated companies

December 31, 2022

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%
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 & supervisor	Apacer Technology Inc. Directors: Chen Ming-Ta, Chang Chia-Kun, Huang Mei-Hui Supervisor: Lai Zi-Wen	4,931,960 shares	68.54%

B. 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	346,683	50,200	296,483	594,704	21,091	16,837	841.87
Apacer Technology (BVI) Inc.	18,542	45,768	0	45,768	0	(63)	4,211	1.56
Apacer Technology Japan Corp.	2,918	29,063	8,153	20,910	72,158	3,797	2,406	12,032.62
Apacer Technologies Private Limited	915	1,743	313	1,430	1,314	92	51	1.77
Kingdom Corporation Limited	20,917	37,001	24,695	12,306	112,907	1,293	423	0.07
Apacer Technology B.V.	130,469	145,697	80,154	65,543	796,221	11,912	11,799	148.39
Apacer Electronics (Shanghai) Co., Ltd.	15,358	110,853	68,831	42,022	567,847	4,751	4,172	-
Shenzhen Qinjing Technology Co., Ltd.	22,975	13,105	130	12,975	152	(967)	(807)	-
UD info Corp.	71,962	690,761	328,021	362,740	736,897	167,369	132,980	18.48

(2) Consolidated financial statements of the affiliated enterprises: Please refer to pages 177-318.

(3) Affiliates reports: Not applicable.

2. Private placement of securities in the most recent FY as of the date on which the annual report was printed:

Item	Private placement of securities in 2022 Issuance date (share distribution date): December 15, 2022 Number of shares: 11,000,000 shares
Type of securities privately placed	Common stock
Date of approval by the shareholders' meeting, and the number of shares	On May 31, 2022, 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 11,000,000. The process was carried out at 1-2 times within a year upon the date of the resolution of the shareholders' meeting.
The basis for determination of the price and its reasonableness	November 3, 2022 was set as the price determination date of private placement for this time (1st time). According to the resolution of the shareholders' meeting on May 31, 2022, the reference price for the private placement was calculated based on 80% of the higher one of the following two base prices: (A) The stock price calculated based on the simple average closing price of the common shares for either the 1, 3, or 5 business days before the price determination date, after adjustment for any distribution of accumulated unpaid dividend, cash dividends or capital reduction, was TWD 40.70, TWD 40.42, or TWD 40.16 respectively, and the stock price calculated based on the simple average closing price of the common shares for 1 business day before the price determination date, after adjustment for any distribution of accumulated unpaid dividend, cash dividends or capital reduction was selected (TWD 40.70). (B) The stock price calculated based on the simple average closing price of the common shares for 30 business days before the price determination date, after adjustment for any distribution of accumulated unpaid dividend, cash dividends or capital reduction, was TWD 39.92.

<table>
<tr><td></td><td colspan="5">The higher one of the two base prices above or TWD 40.70 was selected as the reference price. After detailed consideration, the actual subscription price of this private placement was determined to be TWD 33 per share or 81.08% of the reference price. This met the resolution of the shareholders' meeting requiring that the actual price should not be less than the resolved minimum percentage.</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.</td></tr>
<tr><td>Full payment date</td><td colspan="5">November 17, 2022</td></tr>
<tr><td rowspan="2">Information on placees</td><td>Private placement target</td><td>Qualification</td><td>Subscription quantity (TWD)</td><td>Relationship with the Company</td><td>Involvement in the Company's operations</td></tr>
<tr><td>Acer Inc.</td><td>Article 43-6, Paragraph 1, Subparagraph 2 of the Securities and Exchange Act</td><td>363,000,000</td><td>None</td><td>None</td></tr>
<tr><td>Actual subscription (or conversion) price</td><td colspan="5">TWD 33 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 TWD 33 per share or 81.08% of the reference price (TWD 40.7), which was not less than the minimum percentage resolved at the shareholders' meeting.</td></tr>
<tr><td>The effect of the private placement on the shareholders' equity</td><td colspan="5">The Securities and Exchange Act has a restriction of three years on transfers of privately placed securities, and relevant regulations regarding the qualifications for placees. 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.</td></tr>
<tr><td>Use of the funds raised in the private placement and implementation progress of the plan</td><td colspan="5">All the funds have been utilized for the working capital turnover of the Company.</td></tr>
<tr><td>Realization of private placement benefits</td><td colspan="5">The Company's working capital has been replenished, which is helpful to the enhancement of competitiveness and expansion of markets.</td></tr>
</table>

3. 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.
4. Other necessary supplementary items:
   None.
5. Matters that have a significant impact on shareholders' equity or the prices of securities as set forth in Article 36, Paragraph 3, Subparagraph 2 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 30, 2023

Apacer

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Taiwan Stock Exchange Market Observation Post System: http://mops.twse.com.tw
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