Apacer

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Apacer Technology Inc.

2021 Annual Report

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I. Letter to Shareholders

Dear Shareholders:

In 2021, the COVID-19 pandemic continued, and the shipments stuck at ports along with the lack of materials from supply chains has increased the considerable uncertainty of the overall industry. The COVID alert was also raised to Level 3 across whole Taiwan in May, which undoubtedly aggravated the situation. With such tough and rapidly changing challenges of the market, ensuring the health and safety of the employees has been the top priority for companies aside from maintaining normal business operations. Through the experience of the operation in the industry and the development in the global market for years, Apacer has kept an effective communication with internal and external stakeholders with the real-time supply chain scheduling, which makes the Company's earnings per share after tax this year reach a historic high.

The consolidated operating revenue in FY 2021 was TWD 8.68 billion; the consolidated gross operating profit was TWD 1.45 billion; and the consolidated net profit after tax was TWD 490 million, and the earnings per share after tax was TWD 4.81. We briefly present the operating performance in FY 2021 and the operational plan for FY 2022 as follows:

1. Consolidated operating performance in FY 2021:

Unit: TWD 1,000

Item	2021	2020	Difference
Operating revenue	8,682,393	7,152,222	1,530,171
Gross operating profit	1,452,884	1,125,902	326,982
Net operating profit	573,060	345,419	227,641
Net non-operating income (expense)	4,213	25,250	(21,037)
Net profit after tax	485,781	290,460	195,321
Net profit attributable to shareholders of the parent company	485,788	290,469	195,319
Non-controlling interests	(7)	(9)	2
Earnings (Loss) per share after tax (in TWD)	4.81	2.88	1.93

2. Operating performance and main research results in FY 2021:

The operating and brand performances are summarized as follows:

(1) Apacer's product was recognized by the Taiwan Excellence Awards with the Silver Award.
(2) The Company has been invited to the Best Taiwan Global Brands evaluation for four consecutive years, and received the “Emerging Brands” award.

(3) Apacer's 2021 CSR Report won the "Golden Award" for electronic information manufacturers under the category of Corporate Sustainability Report in the Taiwan Corporate Sustainability Awards (TCSA). It was the 4th consecutive year for which Apacer has been recognized by the jury.
(4) Apacer was ranked in the top 5 of the industrial control SSD module manufactures in the world.

As of the end of 2021, Apacer has received or filed a total of 248 patents and applications in Taiwan and other countries. Taking a leading position in the trend of the market, we were also the first one to release the industrial-grade DDR5 memory series aimed at the areas of application that require high efficiency and budget, such as the embedded systems and industrial computers, the next generation of data centers and servers, etc. In addition, our technology is certified by the highest ANSI/ISA 71.94 G3 air quality standard. We hold the patent of anti-vulcanization memory modules which can be applied together with the CoreSnapshot SSD one-second backup and recovery firmware technology. There are practical applications by our customers already. Our consumer products were launched at the end of the year as well for an early introduction in the first year of DDR5. Furthermore, we have great achievements in the field of smart application. Besides the smart environmental monitoring solution successfully applied in the food courts of large factories, there are also successful cases of the AI+AOI automated optical defect inspection application, showing that we are on the right track with our strategy in this field.

3. Operational plan for FY 2022:

(1) Operational strategy

Apacer will focus on the development in the key field, the planning of the future technology and the digital transformation of the business as the three main directions to show our powerful growth momentum, carry out the sustainable development of ESG (environmental, social, and governance), and continually take care of all the stakeholders, moving towards the goal of becoming the leading information service integrator with digital storage as the core technology.

(2) Development strategies—Competitiveness in the following five aspects established through the three main kinds of business momentum

Data: Setting up the database to improve the operating benefits
R&D: Continuously developing new technologies and increasing the R&D capacity
Products: Understanding the customer needs and introducing products that solve the customer pain points
Marketing: Taking advantage of the martech trends to raise the brand awareness
Production: Enhancing the production efficiency and quality of products to boost the customer satisfaction

(3) Core policies on production and sale

Business operation has a lot to do with the changes of the global market. Faced with different challenges from the global supply chains, Apacer will endeavor to maintain the supplier relationship and real-time adjustments in strategies with the resilience and flexibility, stabilizing supplies and ensuring customers' interests first through the optimization of operation. Meanwhile, we will make good use of the marketing tools and focus on specific markets and application areas to increase our brand exposure and develop high-value customers.

The uncertainty in the macro economy might remain due to the global COVID-19 pandemic and the geopolitical tensions, but the demands for AI and 5G applications are everlasting for sure. Looking forward to 2022, Apacer plans to maintain the three main kinds of business momentum and continue developing in the application areas including smart IoT, cloud computing and AI. Also, with an eye to becoming an international AEO, the Sustainable Development Committee is set up to be responsible for the corporate governance implementation and the concerned ESG issues. We make efforts to fulfill our green commitment, care for the disadvantaged, look after the employees and ensure the stakeholder interests, encouraging the sustainable development of the overall economy and creating the sustainable management values that bring multiple benefits to the customers, employees as well as the society.

Chairman

General manager

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	April	We released he Disc Steno CP100, the world's first Disc Steno portable CD recorder. Disc Steno CP100 operates on the basis of "stand-alone", a state-of-the-art concept. Through integration of the card-reading function and recording technology, it transfers digital images from memory cards to CDs and enables more diverse usage of such images.
	August	We received the ISO 9001:2000 certification.
2004	January	The Disc Steno CP200 portable CD recorder and the Audio Steno MS400 USB flash drive won the Taiwan Excellence Award.
		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.
	May	We passed the test of Sony's SS-00259 standards for environmental protection, and our memory modules for notebooks and desktops passed the test of the "Restriction of Hazardous Substances" (RoHS) directive.
	June	We took the lead in the industry to release FB-DIMM products that meet the demands of servers and workstations for high bandwidth, speed and capacity.
		Our embedded flash memory modules received RoHS certification.
		Share Steno, the world's first OTG USB device for storage of digital images, won the National Award of Excellence.
	November	We established the e-Flash Business Development Center to actively develop industrial flash products for the storage solutions of OS and AP platforms.
2006	April	Our FB-DIMM passed the test of the Intel® Platform Memory Organization, making us the first DRAM manufacturer in Asia to receive the certificate. FB-DIMMs compatible with Intel® server platforms were released, and we became Intel®'s enabling partner.
	May	We unveiled world's first 2.5 inch SATA RAID flash drive (SRFD) that greatly increases data reliability and security.
	September	Our FB-DIMM became the first product of its kind worldwide to pass the CMTL compatibility test.
	October	Our AH520, AA220, FB-DIMM, and DDR400 VLP ECC RDIMM 2GB won the Taiwan Excellence Award.
		Our AH520 won the G-Mark international design award in Japan.
	November	We became an official supplier of memory modules for the 2006 World Cyber Games (WCG) in Italy. Our Handy Steno became compatible with the latest ReadyBoost technology for Windows Vista.
2007	January	We became the only official manufacturer of memory modules for Microsoft Windows Vista.
	March	To expand business in the Indian market, we founded Apacer Technologies Pvt Ltd. as our Indian subsidiary.
	May	Our "A+ Project for Enhancing Global Logistics Values" was selected as a pilot project sponsored by MOEA.
	June	The Company became an official supplier of memory modules for the Taiwan Regional Qualifier of the 2007 WCG.
	September	The objective of our 10th anniversary was to make us one of the three largest brands of memory storage in the world.
	November	The Company's AU860 MP4 player and AH225 USB flash drive won the G-Mark international design award in Japan.
2008	February	We unveiled the ADM III SSD, with a speed three times faster than its predecessors to meet the application demand on storage speed.
	March	We unveiled the Aeolus DDR3-1800MHz/1600MHz memory modules, which adopt the world's first active fan/dualL heat sink designed for overclocking.
	April	We were selected for the "Coaching Project for International Brand Management" of the Bureau of Foreign Trade, MOEA.
		Our AH421 won the 2008 iF Product Design Award.

2008	May	Our Aeolus active overclocking memory modules won the Taiwan Excellence Award, Innovation Award from the PC World magazine in Greece, and the Editor's Choice award from PC Magazine in Russia. In cooperation with Diskeeper, the leading manufacturer of disk defragmentation tools, we introduced the SSD+*Optimizer*, the world's first SSD solution with disk defragmentation software.
	June	In cooperation with RTD, the founder of PC/104 Consortium, we developed the micro SATA Disk Chip (SDC) SSD designed for PC/104 platforms.
	September	Our memory module products won the NOVA Channel Award as the first choice of retailers.
	October	Our AH225 and AH421 USB flash drives won the Best Iinnovation Award from Tweak in Germany.
	November	Our HT203 USB flash drive won the Rexware Golden Award in France.
2009	March	By exclusively adopting the innovative stacking technology, we unveiled SAFD 254, the only high-capacity industrial SSD which supports a wide range of operating temperature.
	April	We established an office in Shenzhen, China.
	November	We became an official supplier of memory modules for the 2009 WCG Finals in Chengdu, China. We established the VA-Consumer Product Department which covers four product lines: digital storage, multimedia entertainment, digital sharing, digital peripherals.
2010	January	The design of the power supplies of the proprietary port of our SDM 7P/180D LP industrial SSD won the 18th Taiwan Excellence Award.
	March	Our SmartBadge, which integrates demands for business security and data storage, won the iF Product Design Award.
	September	Our SmartBadge won the G-Mark international design award in Japan.
	December	We became listed on the Taiwan Stock Exchange.
2011	January	Our SUFD industrial SSD, AS602 consumer SSD, and AH128/AH129 USB flash drives won the Taiwan Excellence Award.
	February	We unveiled ultra-high speed industrial CFast cards, with a groundbreaking transmission speed three times faster than those of conventional IDE interfaces.
	November	We unveiled the world's fastest UHS microSDXC 64GB memory card with high capacity.
	December	Our AC232 external hard drive won the 20th Taiwan Excellence Award.
2012	January	We unveiled the 8GB DDR3 1600 UDIMM with ECC memory module for servers. With high capacity and processor speed, the product module enables servers to run flawlessly at high speed (12800MB/s).
	April	We unveiled the mPDM (mini PCIe Disk Module) modular SSD, which has higher transmission speed and provides higher storage capacity for high-end applications including web storage and business servers.
	May	The Comapny unveiled the DDR3-1600 ECC RDIMM memory module designed for storage servers.
	July	We unveiled the AC232 USB 3.0 high-speed portable hard drive with a stylish ocean pattern. The product features an exclusive anti-slip/anti-shock design and a flowery pattern, and it protects valuable data.
	September	We unveiled more ultra-high speed industrial CFast cards with a further enhanced speed to expand our share in the market of high-performance computing.
	December	Our SDM4 7P/180D ultra-slim SSD and WiFun AF750 portable wireless storage device won the 21st Taiwan Excellence Award.

2013	January	We unveiled three models of the latest SATA 3.0 SSDs with high-speed transmission interfaces, able to meet the demands for cloud applications, huge data volumes and mobility.
	March	As the trend of mobility has kept moving forward, we adopted three strategies for market planning: organizational innovation, model innovation, management innovation.
	June	We became the world's no. 1 supplier of industrial SSDs.
	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.
	August	We took the lead in the industry to unveil the 22 Pin SATA 6Gb/s high-speed modular SSD, along with mobile peripherals to meet the demands for mobile applications.
	November	We released the SSDWidget real-time monitoring software using cloud technology.
	December	We were the only industrial SSD manufacturer to win the 22nd Taiwan Excellence Award. The award-winning products: SSDWidget (the world's first cloud monitoring software), SFD 25A-M (the first ultra-slim SSD which is only 5mm-thin), CSD (a dual-drive SSD with groundbreaking and unique design).
2014	March	We unveiled our vision for business operations in 2014. We adopted H.O.R.S.E., the five operational strategies designed to provide more comprehensive user experience for business clients and end users, explore potential business opportunities in all aspects, and plan for the development of the global market.
	May	With rapid global growth of cloud applications and big data, we unveiled the SATA 3 high-capacity SFD 25H-M SSD, a whole new product with highly enhanced features.
	June	We continued to be ranked by Gartner as the world's no. 1 supplier of industrial SSDs in 2013.
	September	We participated in the Green Power Purchase Program launched by the government as we made commitments to green energy policies and the promotion of energy conservation and CO2 emission reduction.
	November	Chang Chia-kun, our President, was among the "Top 100 MVP Managers" selected by the magazine Manager Today. He also received the Outstanding IT Elite Award. These honors are highly respected in the IT industry.
	December	For the sixth consecutive year, we were honored with Taiwan Excellence Awards. Five products won awards at the 23rd edition of these Awards: UrKey Technology SSD (provides comprehensive data security and protection), Combo SDIMM (a hybrid SSD-DRAM memory module featuring innovative storage design), WP210 Apacer Power Speaker (a power speaker which breaks technological limits), AH450 USB3.0 (a USB flash drive with appearance of silver), AH175 (dual-functional OTG flash drive) + Apacer FileBridge mobile app (this combination provides integration of software and hardware).
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. We unveiled our vision for business operations in 2015. We launched the 3.0 Upgrade Plan, aiming to expand business operations and develop the global market by focusing on breakthroughs in four aspects: forming strategic niche alliances in the field of industrial control, following the trend of mobile devices, expanding business operations in eSports, and development of cloud integration.

2015	February	We entered into a co-branding partnership with Jimmy Liao, a famous picture book illustrator in Taiwan, in unveiling the Jimmy Limited Edition of the WP210 power speaker with wireless charging and the compact and adorable WS211 Bluetooth speaker.
	April	We unveiled the flagship Blade DDR4 overclocking memory module, a cross-generational, top-class DDR4 product which is compatible with the Intel Haswell-E processor and X99 chipset and boasts a clock rate of up to 3300 MHz, bringing unprecedented computing performance and energy-saving efficiency.
	May	We unveiled wholly new upgraded SSD solutions for industrial control, and offered high-speed, high-capacity SSD products of the PCIe and SATA 3 series.
	June	For the third consecutive year, we were ranked by the market research ageny Gartner as the world’s no. 1 supplier of industrial SSDs.
	July	Using the technologies of proprietary micro optics and spectrum measuring system integration, we developed lightweight and portable spectral luminance and color meters.
	October	We unveiled the high-capacity 16GB DDR3L 1600 SODIMM which passed the test of CMTL certification. Operating at a voltage of just 1.35V, the product shows impressive efficiency on a low-power and high-performance basis, becoming the world’s only high-capacity memory product that has passed the compatibility test of Intel® NUC 5i5MYBE/5i3MYBE/5i3RYH platforms.
	December	For the 7th consecutive year, we were honored by the Taiwan Excellence Award. Five products won at these 24th Awards: NFC SSD (upgrades data security and protection with wireless communication technologies), CoreAnalyzer software (with unique and innovative SSD analyzing technology), NOX DDR4 SO-DIMM (a memory module with high stability and performance), AH650 (a USB fingerprint flash drive that secures the user's private data), AH157/AH116 (lightweight, portable mini-sized USB flash drives).
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. Soon after release, the product won the 2016 Taiwan Excellence Award and was listed as one of the Top 100 Innovative Products of the 2015 IT Month.
	March	We unveiled our vision for business operations in 2016. Through developing core storage technologies, we focused on vertical applications for industries. Following trends in the consumer market, we seek to develop an IT-enabled service ecosystem integrating the storage, reception, analysis, control and sharing of information. The aim is to take the lead in the development of the growing areas of cloud application and IoT.
	May	We unveiled the first ALLONE controller, featuring the AvataRAM innovative storage solution with low latency and long lifespan.
	June	For the fourth consecutive year, we were ranked by the market research ageny Gartner as the world’s no. 1 supplier of industrial SSDs. In addition, we ranked 9th on DRAMeXchange’s survey of revenues of memory module manufacturers worldwide in 2015.
	August	We unveiled the AH190 dual-interface USB flash drive exclusively designed for Apple devices. The product passed the most stringent test of Apple MFi certification. We unveiled the UDM USB 3.0 1U modular SSD exclusively designed for 1U servers and with a height of just 22.4 mm. We unveiled the Z280 M.2 SSD which conformsed to the newest NVMe 1.2 standards and was the world’s first product of its kind to adopt the native PCIe Gen3 x4 interface specifications.

2016	October	We and Clevo Co. cooperated in developing the NOX DDR4 SO-DIMM heat-resistant memory with a clock rate of up to 3000 MHz. Performance was pushed to the limit with the aim to develop the world's best gaming laptops.
	November	In cooperation with the illustrator Crystal who is well-known in Taiwan, we unveiled several co-branded products including the AH333 USB flash drive and the AC233 portable hard drive. Our NOX DDR4 SO-DIMM was tested in combination with Gigabyte's BRIX ultra compact gaming computer. The test showed NOX DDR4 SO-DIMM, a product validated by real records, was the only laptop memory that could maintain stable operation when running at a clock rate of 3200 MHz.
	December	Victor Lin, our Vice President and CFO, won the 34th National Manager Excellence Award - Financial Manager. For the eighth consecutive year, we were honored with Taiwan Excellence Awards. Six products won in these 25th Awards: AS720 (an exclusive, proprietary dual-interface SSD), AS330 SSD in combination with the high-performance PANTHER DDR4 gaming PC memory module, AH180 (a USB 3.1 Type-C dual flash drive for mobile applications), AH159/AH118 (lightweight and super-mini USB 3.1 Gen 1.0/2.0 flash drives), AC830 (a military-grade shockproof portable hard drive), SDM7 7P/180D DP (an ultra compactindustrial SSD).
2017	January	BLADE, COMMANDO and PANTHER DDR4 Gaming PC Memory passed the QVL verification of leading companies to provide total support of the latest Intel® 200 series motherboards.
	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 to demonstrate the full capability of SSD.
	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. With the support of the integrated software kit (SDK) for selectable in-vehicle information and communication network cloud to provide control centers with intelligent and complete vehicle solutions such as fleet management, vehicle safety monitoring, and unmanned vehicle monitoring. The durable microSDHC/XC memory cards were introduced to provide the best solution with an all-weather safety surveillance system. The first anti-vulcanization series memory in the world was launched for the environment exposed to sulfur. The product has been highly recognized and is patented in many countries. The brand-new anti-vulcanization memory can effectively solve the problem of vulcanized corrosion from polluted environments, improve the overall service life of the system, and meet the requirements for stable operation for a long period of time in a harsh environment. The first anti-vulcanization series memory in the world was launched for the environment exposed to sulfur. The product has been highly recognized and is patented in many countries. The brand-new anti-vulcanization memory can effectively solve the problem of vulcanized corrosion from polluted environments, improve the overall service life of the system, and meet the requirements for stable operation for a long period of time in a harsh environment.

2017	May	A celebration was held for our 20th anniversary. We have been rated by Gartner as the best industrial SSD supplier in the world for five consecutive years since 2012 , helping set a solid foundation for our leading position in the industrial market.
	August	We participated in the (Australasian Gaming Expo) in Sydney, Australia, and displayed a full range of storage solutions that we developed for gaming applications, including CF Card, CFast Card, SDM (SATA Disk Module), M.2 SSD, DRAM and other memory modules.
	September	The super gaming SSD - Apacer COMMANDO Series PT920 - was introduced to the market. The product uses the PCIe Gen 3 x4 high speed interface to ensure a reading/writing rate of 2500/1350 MB every second. The random write speed demonstrates excellent performance of 175,000 IOPs.
	October	The dedicated portable storage solution AH790 Rotary Disk for iPhone and iPad were launched. The product passes the Apple MFi certification to a maximum capacity of 64GB, and features rotary switching between Lightning and USB 3.1 Gen1 Type-A ports. We won the great honor of Taiwan Excellence Award for nine consecutive years. Six products of “innovative value” won in the 26th Taiwan Excellence Awards, including the PM110-25 SSD, with a PCIe interface, of military specifications, the SV250-7 Series of the new generation supported with the innovative Multi-PowerPath power supply technology, the DDR4 Memory Series for gaming competition and the PCIe SSD, the ASMini Pocket SSD as the first choice for businessmen, and the AC630, AC631 and AC632 portable HDs that passed the anti-drop certification of US military specifications.
	November	We worked with P714 Planet, a original illustration brand in Taiwan, to introduce three Apacer X P714 co-branded models - “Up in the Air”, “Escort” and “Support” - of AH336 USBs and AC233 USB 3.1 Gen 1 1TB portable HDs with “Dream Planet” as the concept of the creation. We won the “Silver Award” for the electronic information manufacturing industry in the Corporate Sustainability Report Category of the 2017 Taiwan Corporate Sustainability Awards (TCSA).
2018	February	We participated as an exhibitor in Embedded World 2018, the largest international trade fair for industrial computers held every year in Nuremberg, Germany. We demonstrated our rugged SSD technology 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.
	March	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, riding on a wave of demands for new servers in the global market.
	April	We introduced the technical-grade wide-temperature identification and established the market specifications.
	May	During the COMPUTEX exhibition, we used “Technology Community and Smart IoT” as the theme to display our latest technologies, products and software-hardware integration in six application fields across industrial IoT, transportation, national defense application, gaming and eSports and entertainments.
	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.
	July	We launched the brand-new high specification V30/V10 microSDXC/SDHC memory card.

2018	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 and optimize the automated optical inspection (AOI) results. Numerous well known manufacturers of panels and industrial computer have introduced this project into their factory. With great results from the positive investment in the vertical application market, we participated in the Australasian Gaming Expo fro two consecutive years to expand our share in the gaming storage market via our core technology.
	October	For the tenth consecutive year, we were honored by the Taiwan Excellence Awards for eight products that stood out this year, including industrial control, optics and consumer product applications. We also won the achievement award as the grand total of our awarded products has exceeded 50 products.
	November	To follow the burgeoning illumination inspection trend, Apacer attended the world’s largest Hong Kong International Lighting Fair and introduced the high customized solutions for measurement from the real-time illuminance sensing to the professional illuminance formula calibration.
	December	Appreciated by 435 professional judges of the most authoritative and representative Taiwan Corporate Sustainability Award, our 2017 corporate social responsibility report stood out among 148 competing enterprises and won the “Golden Award” in the electronic information manufacturing industry category. We participated in the InterBrand appraisal and ranked in the top-35 of Taiwan global brands and won the “Emerging Brands” award. We released the world’s fastest technical 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.
	February	At West 2019, we made our debut in the military equipment market with our advanced information security technology and rugged storage solutions. At 2019 Embedded World, we showcased our brand-new high-speed storage solutions which focused on AIoT/IoT core applications, bringing new momentum to our operations.
	March	As a start on smart city environmental monitoring, we participated in the Smart City Summit & Expo to promote our IoT solutions for environmental monitoring. We participated in the Japan IT Week in Tokyo, where we demonstrated our capabilities in industrial control.
	April	We released the industrial-grade DDR4 high-performance wide-temperature memory.
	May	We promoted the feature of instant upload of live photos for environmental monitoring, and the function of “event shot” was well-received by the market. We took part in the 5th COMPUTEX held at the Nangang Exhibition Center in Taipei, where we showcased our strategic plan under the title of “Smart IoT: Infinite Possibilities”.
	June	We were ranked in the top 5% of companies participating in the 5th Corporate Governance Evaluation, and we were invited to the ceremony.

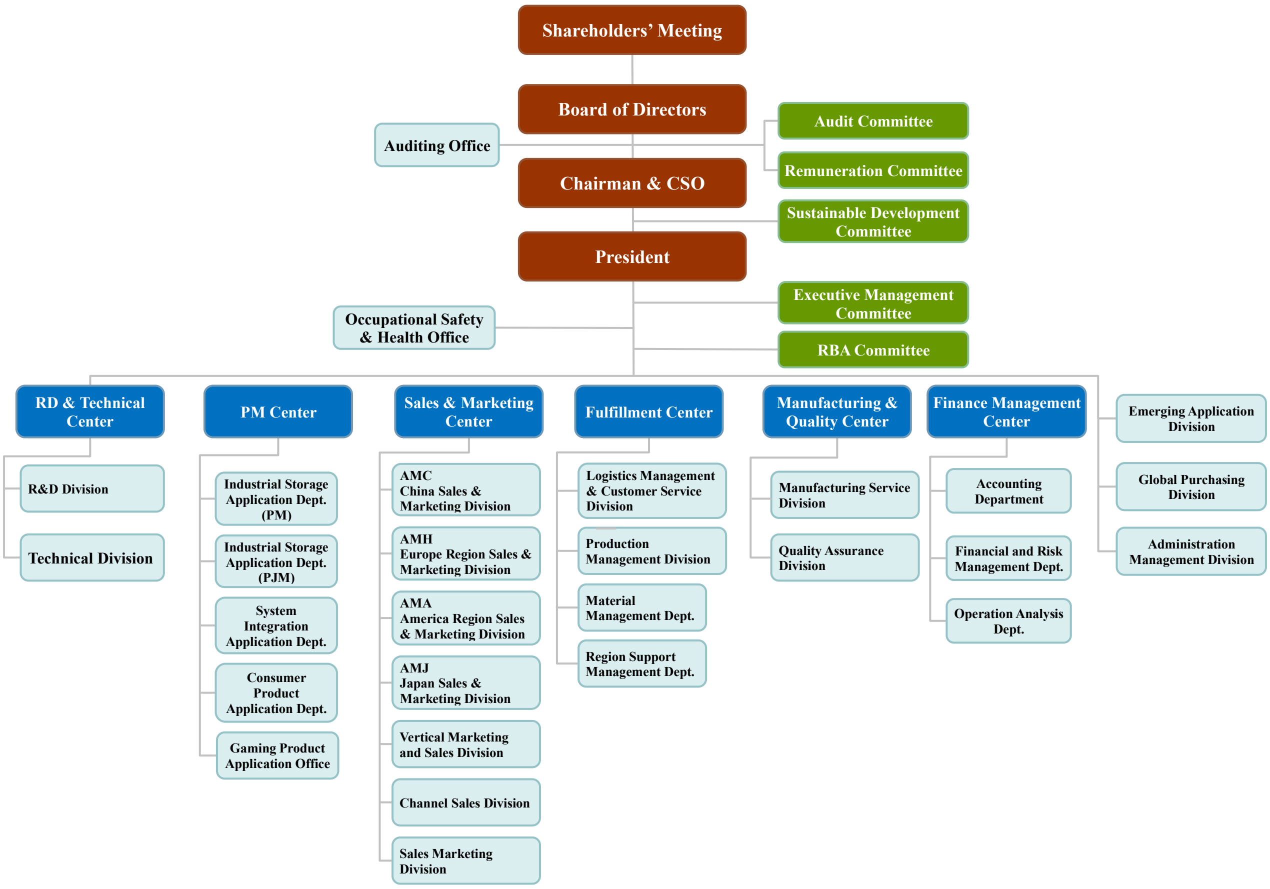
2019	July	We released the AS2280Q4 M.2 PCIe Gen4x4 SSD.
	August	We participated in the Australasian Gaming Expo in Sydney for the third time, and we showed our R&D capabilities by being the first manufacturer to introduce the latest 3D NAND SLC-liteX technology.
	October	The XR-DIMM passed the RTCA DO-160G test for airborne equipment, becoming the first of it We became the first manufacturer to release the full series of the DDR4-3200 industrial-grade memory, which supports the latest Intel® Cascade Lake and AMD Rome processor platforms.s kind to be dual-certified globally.
	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.
		For the first time, we took part in the Asia Agri-Tech Expo, where we exhibited our smart environmental monitoring capability based on dual strategies for groundbreaking transformation.
		We were certified as an iSports corporation in 2019 due to our continued promotion of the "Sports Day" and encouragement of employees to do exercise.
		For the second consecutive year, we won the "Golden Award" for electronic information manufacturers under the category of Corporate Sustainability Report of the Taiwan Corporate Sustainability Awards (TCSA).
2020	January	We cooperated with Advantech in promoting industrial cloud services, our first investment in smart factory application.
	February	The mass production of the high-capacity GB DDR4 industrial-grade memory began.
		We cooperated with Allxon, our strategic partner, in cloud-monitoring of SSDs and investing in the smart IoT market.
		We participated in Embedded World, held in Nuremberg, Germany, and demonstrated our industrial cloud services.
	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.
		To upgrade the IoT information security, the CoreSecrity2 advanced technology for information security protection was launched.
	June	We were the first manufacturer to create the industrial-grade wide-temperature DDR4 server memory.
	July	We acquired the 16949 automotive certification and aimed at the supply chain of in-vehicle applications.
		To add a new powerful member to our high-speed SSDs, the world's smallest industrial-grade PCIe BGA SSD was released.
		We introduced the NAS SSD.
	August	We collaborated with Allxon to develop the technology of IoT smart equipment management.
		Apacer showcased the two core smart IoT systems, AI optical inspection and intelligent epidemic prevention systems, in the automation exhibition.
	September	We researched and developed the first military shock-resistant server memory, XR-LRDIMM, with our high-end customization capability.
		We organized the "Cloud-edge Integration" online exhibition.
	October	To facilitate the upgrade of national defense and transportation, we launched the rugged shock-resistant SODIMM memory.
		Apacer received the honor of the Taiwan Excellence Awards.

2020	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 held an online product launch for our gaming brand, ZADAK.
		Apacer has been nominated for the Best Taiwan Global Brands for the third consecutive year, helping enhance our soft power.
		For the third consecutive year, we won the "Golden Award" for electronic information manufacturers under the category of Corporate Sustainability Report of the Taiwan Corporate Sustainability Awards (TCSA).
		Apacer once again received the RBA Silver Recognition.
		The latest AS722/AS721 USB 3.2 Gen2 USB-C external SSD was released.
		We became the first manufacturer to introduce the CoreSnapshot instant SSD backup and recovery technology.
	December	Apacer first participated in the photography exhibition in Taipei together with QNAP®.
		We cooperated with AOPEN to establish smart remote equipment management solutions.
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	Apacer gathered the business momentum, and was the first one to disclose the ESG policy.
		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.
	April	Focusing on the value improvement, Apacer showed impressive Q1 record.
	May	We introduced the innovative technology solutions for the new generation of DDR5 and patented PCIe heat sink in the COMPUTEX online exhibition.
	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 to promote the efficiency of resource usage in medical institutions.
	August	With the three main kinds of business momentum, Apacer's EPS hit a historical high as a listed company.
	November	With the considerable business momentum, Apacer's EPS continued to reach a historical high.
		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.
		We won the "Golden Award" for electronic information manufacturers under the category of Corporate Sustainability Report of TCSA.
	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.

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. (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.

Division	Tasks
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.
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.

Division	Tasks
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 HR strategies and management systems for general and factory affairs of the Company. (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

April 2, 2022

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	1.50%	450,268	0.44%	0	0.00%	Apacer Technology Inc., Chairman and CSO Acer Inc., Vice President M.B.A., Department of Management Science, Master's degree	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	5.60%	0	0.00%	0	0.00%	YODN Lighting Corp., Chairman Acer Inc., Operation and Investment Management Division, 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	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%	196,825	0. 19%	145,558	0.14%	0	0.00%	Apacer Technology Inc., President Apacer Memory America Inc., President M.B.A., Baruch College, CUNY M.E.E., NYU Polytechnic School	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	None	None	None
Director	Republic of China	Haydn Hsieh	2021.07.14	Male 65-69 years old	3 years	2015.6.15	0	0.00%	0	0.00%	0	0.00%	0	0.00%	Wistron NeWeb Corporation, Chairman and CSO 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
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	1.19%	0	0.00%	0	0.00%	Acer Inc., Chairman Acer Inc., CFO Acer Inc., Co-founder 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

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	Phison Electronics Corp.	2021.07.14	N/A	3 years	2018.05.30	10,050,000	9.87%	10,050,000	9. 87%	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	0.07%	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 Cheng-Chi 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 Stans Foundation, 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	None	None	None

(2) Major shareholders of the corporate shareholders:

March 30, 2021

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%) Employee provident fund entrusted to the investment account of Aberdeen Asset Management PLC in escrow at HSBC (2.98%) Fubon Life Insurance Co., Ltd. (2.75%) Pan Jian-Cheng (2.31%) Yang Jun-Yong (2.31%) Ouyang Zhi-Guang (1.76%) Yuanta Taiwan High-yield Leading Company Fund Account (1.45%) Investment account of Norges Bank in escrow at Citibank (1.45%) Chenghe Investment Co., Ltd. (1.20%) Wu Han-Wei (1.18%)

(3) Major shareholders of the corporate shareholders:

March 30, 2021

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%
Chenghe Investment Co., Ltd.	Pan Jian-Cheng	99%

(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.	● The director was or is not in a spousal relationship nor a relative within the second degree of kinship.	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.	● The director was or is not in a spousal relationship nor a relative within the second degree of kinship.	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: M.B.A., Baruch College, CUNY; M.E.E., NYU Polytechnic School ● 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.	● The director was or is not in a spousal relationship nor a relative within the second degree of kinship.	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.	● The director was or is not in a spousal relationship nor a relative within the second degree of kinship.	1
George Huang, Director	● Education: B.S., Department of Electronics Engineering, National Chiao Tung University ● Experience: Acer Inc., Chairman; Acer Inc., CFO; Acer Inc., Co-founder; PChome Online Inc., Independent Director; BIONET Corp., Independent Director; Apacer Technology Inc., Director; Les enphants Co. Ltd., Director; Motech Industries Inc., Director. ● None of the circumstances under Article 30 of the Company Act applies to the director.	● The director was or is not in a spousal relationship nor a relative within the second degree of kinship.	1

Qualifications / Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
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.	● The director was or is not in a spousal relationship nor a relative within the second degree of kinship.	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; Wistron NeWeb Corp., Director; Wistron ITS Corp., Director; ZIGONG ART SHARING CO., LTD., Director; Allxon Inc., Supervisor.	● 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	1

Qualifications / Name	Professional qualifications and experience	Independence	Number of other public companies where the member also serves on a remuneration committee
	● 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.	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; CDIB Private Equity (China) Corporation, Director; CDIB Capital Management Corporation, Supervisor; CDIB Biomedical Venture Capital Corporation, Supervisor. ● 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.	2

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

Independent director qualifications \ Name of independent director	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

Name of independent director / Independent director qualifications		Max Wu	Philip Peng	Cathy Han
8.	A director, supervisor, managerial officer, or shareholder holding five percent or more of the shares, of a specified company or institution with any of the following (1)~(4) conditions that has a financial or business relationship with the Company.	None	None	None
(1)	It holds 20 percent or more and no more than 50 percent of the total number of issued shares of the Company.	None	None	None
(2)	It holds shares, together with those held by any of its directors, supervisors, and shareholders holding more than 10 percent of the total number of shares, in an aggregate total of 30 percent or more of the total number of issued shares of the Company, and there is a record of financial or business transactions between it and the Company. The shareholdings of any of the aforesaid persons include the shares held by the spouse or any minor child of the person or by the person under others' names.	None	None	None
(3)	It and its group companies are the source of 30 percent or more of the operating revenue of the Company.	None	None	None
(4)	It and its group companies are the source of 50 percent or more of the total volume or total purchase amount of principal raw materials (those that account for 30 percent or more of total procurement costs, and are indispensable and key raw materials in product manufacturing) or principal products (those accounting for 30 percent or more of total operating revenue) of the Company.	None	None	None
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

April 2, 2022

<table>
<tr><th rowspan="2">Title</th><th rowspan="2">Nationality</th><th rowspan="2">Name</th><th rowspan="2">Gender</th><th rowspan="2">Start date of office</th><th colspan="2">No. of shares held</th><th colspan="2">Shares held No. of shares held</th><th colspan="2">Shares held in the name of others</th><th>Educational background and experience</th><th>Concurrent posts in other companies</th><th colspan="3">Managerial officers in a spousal relationship or within the second degree of kinship</th></tr>
<tr><th>Number of shares</th><th>Shareholding ratio</th><th>Number of shares</th><th>Shareholding ratio</th><th>Number of shares</th><th>Shareholding ratio</th><th></th><th></th><th>Title</th><th>Name</th><th>Relation</th></tr>
<tr><td>Chairman and CSO</td><td>Republic of China</td><td>Austin Chen</td><td>Male</td><td>2012.06.13</td><td>1,525,633</td><td>1.50%</td><td>450,268</td><td>0.44%</td><td>0</td><td>0.00%</td><td>Apacer Technology Inc., Chairman and CSO
Acer Inc., Vice President
M.B.A., Department of Management Science, National Chiao Tung University</td><td>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</td><td>None</td><td>None</td><td>None</td></tr>
<tr><td>President</td><td>Republic of China</td><td>Chang Chia-Kun</td><td>Male</td><td>2014.04.01</td><td>196,825</td><td>0.19%</td><td>145,558</td><td>0.14%</td><td>0</td><td>0.00%</td><td>Apacer Technology Inc., President
Apacer Memory America Inc., President
Baruch College CUNY of M.B.A.
NYU Polytechnic School of M.E.E.</td><td>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</td><td>None</td><td>None</td><td>None</td></tr>
<tr><td>Vice President</td><td>Republic of China</td><td>Luo Rong-Fa</td><td>Male</td><td>2020.07.01</td><td>15,443</td><td>0.02%</td><td>0</td><td>0.00%</td><td>0</td><td>0.00%</td><td>Apacer Technology Inc., Vice President
Apacer Technology Inc., Special Assistant to the President's Office
JoiiUp Technology Inc., Chairman
B.S., Department of Forestry and Nature Conservation, Chinese Culture University</td><td>Apacer Technology Japan Corp., Director</td><td>None</td><td>None</td><td>None</td></tr>
<tr><td>Vice President</td><td>Republic of China</td><td>Huang Mei-Hui</td><td>Female</td><td>2018.08.01</td><td>42,885</td><td>0.04%</td><td>0</td><td>0.00%</td><td>0</td><td>0.00%</td><td>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</td><td>—</td><td>None</td><td>None</td><td>None</td></tr>
</table>

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held No. of shares held		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
Vice President	Republic of China	Luo Xue-Ru	Female	2018.08.01	39,739	0.04%	1,869	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	94,348	0.09%	15,340	0.02%	0	0.00%	Apacer Technology Inc., CTO of the RD & Technical Center Apacer Technology Inc., Senior Head of the RD & Technical Center Apacer Technology Inc., Senior Manager of the R&D Division Apacer Technology Inc., Manager of the Hardware Development Department M.S., Department of Mechanical Engineering, National Taiwan University of Science and Technology	—	None	None	None
CFO	Republic of China	Lai Zi-Wen	Female	2013.07.14	27,024	0.03%	0	0.00%	0	0.00%	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	None	None	None
Senior Head	Republic of China	Yin Hua-Jun	Female	2020.07.01	77,956	0.08%	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

Title	Nationality	Name	Gender	Start date of office	No. of shares held		Shares held No. of shares held		Shares held in the name of others		Educational background and experience	Concurrent posts in other companies	Managerial officers in a spousal relationship or within the second degree of kinship		
					Number of shares	Shareholding ratio	Number of shares	Shareholding ratio	Number of shares	Shareholding ratio			Title	Name	Relation
Senior Head	Republic of China	Yu Yao-Tse	Male	2022.01.01	9,826	0.01%	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
Assistant Manager	Republic of China	Huang Yi-Cheng	Male	2022.02.23	5,791	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	—	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	Cash amount	Share amount	Cash amount	Share amount	Apacer	All companies in financial report	
Chairman	Austin Chen	2,000,000	2,000,000	-	-	7,748,522	7,748,522	410,000	410,000	10,158,522 2.09%	10,158,522 2.09%	15,410,000	15,410,000	108,000	108,000	7,700,000	-	7,700,000	-	33,376,522 6.87%	33,376,522 6.87%	-
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	-	-	1,177,938	1,177,938	200,000	200,000	5,227,938 1.08%	5,227,938 1.08%	-	-	-	-	-	-	-	-	5,227,938 1.08%	5,227,938 1.08%	-
Independent Director	Philip Peng																					
Independent Director	Hsieh Hui-Chuan (Note 1)																					
Independent Director	Cathy Han (Note 1)																					

Note 1: The independent director, Hsieh Hui-Chuan, resigned on July 13, 2021; the independent director, Cathy Han, was inaugurated on July 14, 2021.

Note 2: 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 39.

Note 3: 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	Hsieh Hui-Chuan, Cathy Han	Hsieh Hui-Chuan, Cathy Han	Hsieh Hui-Chuan, Cathy Han	Hsieh Hui-Chuan, Cathy Han
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	Chang Chia-kun, Teddy Lu Haydn Hsieh, George Huang Phison, Max Wu, Philip Peng	Teddy Lu Haydn Hsieh, George Huang Phison, Max Wu, Philip Peng	Teddy Lu Haydn Hsieh, George Huang Phison, Max Wu, Philip Peng
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.)			Austin Chen	Austin Chen
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	10 (Vice) Presidents	10 (Vice) Presidents	10 (Vice) Presidents	10 (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

Title	Name	Salary (A)		Retirement pension (B)		Bonus and special allowance (C)		Employee remuneration (D)				The total amount of A, B, C and D, and the percentage in net income after tax		Remuneration from reinvestment businesses other than subsidiaries
		Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer	All companies in financial report	Apacer		All companies in financial report		Apacer	All companies in financial report	
								Cash amount	Share amount	Cash amount	Share amount			
President	Chang Chia-Kun	11,693,000	11,693,000	432,000	432,000	8,648,500	8,648,500	7,970,000	-	7,970,000	-	28,743,500 5.92%	28,743,500 5.92%	-
Vice President	Luo Rong-Fa													
Vice President	Huang Mei-Hui													
Vice President	Luo Xue-Ru													

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	-	-
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.)	Luo Rong-Fa	Luo Rong-Fa
5,000,000 dollars (incl.) ~ 10,000,000 dollars (not incl.)	Huang Mei-Hui, Luo Xue-Ru	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	4 (Vice) Presidents	4 (Vice) Presidents

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

Unit: TWD

	Title	Name	Share amount	Cash amount	Total	The total amount in net income after tax (%)
General manager	Chairman and CSO	Austin Chen	0	14,560,000	14,560,000	3.00%
	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				

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 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	Ratio of total remuneration in 2020 to net income after tax	Ratio of total remuneration of all the companies in the consolidated statements in 2020 to net income after tax
Director	3.17%	3.17%	3.85%	3.85%
President and Vice President	5.92%	5.92%	10.29%	10.29%

(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 director 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) Procedure of Remuneration Payment 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) Operation status of the Board of Directors

The Board of Directors held 7 meetings in 2021. 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	7	0	100%	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 (Note 1)	4	0	100%	Inaugurated on July 14, 2021.
Independent Director	Hsieh Hui-Chuan (Note 2)	2	1	67%	Resigned on July 13, 2021.

Note 1: A new election and resignation for the Company's eighth Board of Directors was completed on July 14, 2021. There were three Board of Directors meetings in total convened before the resignation in 2021.

Note 2: The Company's ninth Board of Directors has held four meetings in total after the election.

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 expressed by any independent director, and such dissent or reservation is recorded in the minutes or a 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
2021.02.24	1st meeting in 2021	Proposal for distribution of the remuneration for employees and directors in FY 2020 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.
2021.08.04	5th meeting in 2021	Proposal for salary adjustment (including managers) 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.

2021.12.16	7th meeting in 2021	Proposal for distribution of the performance bonus for managers in 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.
2021.12.16	7th meeting in 2021	Proposal for distribution of the employee remuneration for managers in 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.

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, 2021	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 2021, 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", "CSR" and "Corporate Governance". Important decisions of the Board of Directors are published regularly, and investor conferences are held on a period 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 2021 were 76.5.

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

The Audit Committee held four meetings in 2021. The attendance of its members is described below:

Title	Name	Actual number of persons present (attended)	Number of meetings attended by proxy	Actual attendance rate (%)	Remarks
Chairperson	Max Wu	4	0	100%	Inaugurated on July 14, 2021 for another consecutive term
Member	Philip Peng	4	0	100%	Inaugurated on July 14, 2021 for another consecutive term
Member	Cathy Han (Note 1)	2	0	100%	Inaugurated on July 14, 2021
Member	Hsieh Hui-Chuan (Note 2)	2	0	100%	Resigned on July 13, 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
2021.02.24	1st meeting in 2021	The business report and self-prepared financial statements of FY 2020 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2021.02.24	1st meeting in 2021	Proposal to issue the "Internal Control System Declaration" of FY 2020 was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2021.02.24	1st meeting in 2021	Proposal for amendment of the "Internal Control System" and "Rules for Implementation of the Internal Audit System" for the "Sale and Collection Cycles" was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2021.04.15	2nd meeting in 2021	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
2021.08.04	3rd meeting in 2021	The quarterly consolidated financial statements for the second quarter of FY 2021 were adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2021.08.04	3rd meeting in 2021	Proposal for amendment of the "Internal Control System" and "Rules for Implementation of the Internal Audit System" for the "Procurement and Payment Cycles" was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2021.10.31	4th meeting in 2021	Proposal for amendment of partial provisions of the "Risk Management Policies and Procedures" was adopted.	Approved by all of the Audit Committee members	Approved by all of the directors present
2021.10.31	4th meeting in 2021	The internal audit plan of FY 2022 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
2021.02.24	1st meeting in 2021	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.
		Proposal for amendment of the "Internal Control System" and "Rules for Implementation of the Internal Audit System" for the "Sale and Collection Cycles" was adopted.	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.
2021.04.15	2nd meeting in 2021	Review of the internal audit report	Acknowledged with no other suggestions.

2021.08.04	3rd meeting in 2021	Review of the internal audit report	Acknowledged with no other suggestions.
		Proposal for amendment of the "Internal Control System" and "Rules for Implementation of the Internal Audit System" for the "Procurement and Payment Cycles" was adopted.	1. Adopted and submitted to the Board of Directors for a resolution. 2. Acknowledged with no other suggestions.
2021.10.31	4th meeting in 2021	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
2021.02.24	1st meeting in 2021	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.
2021.10.31	4th meeting in 2021	1. Independence 2. Responsibility of the reviewer for review of the interim financial report 3. Review scope and method 4. Review findings 5. Annual audit plan 6. Competent authorities' concerns 7. Important updates in 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 shareholder's equity (1) Does your company have an internal procedure and act accordingly for handling shareholders' suggestions, doubts, disputes, and lawsuits? (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? (3) Does your company have a firewall mechanism in place to control the risks between the company and its affiliates?	 V V 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) 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. (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.	No difference

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

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	**No**	**Summary**	
			D. Implementation of diversification policy for the composition of the Board of Directors:	

Core diversification Item / 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	✓	✓	✓	✓	✓

Item	Yes	No	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.

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 guidelines for evaluating the performance of the Board of Directors and conduct regular performance evaluation every year? Does your company submit the results of the performance evaluation to the Board of Directors? Are the results used as the basis for the remuneration and nomination for re-election of individual directors?	V		(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. In 2021, the achievement rates of the performance evaluations of the Board of Directors, Audit Committee and Remuneration Committee were higher than 90%, and the results thereof were reported at the board meeting held on February 23, 2022 and the meetings of functional committees.	No difference
(4) Does your company assess the independence of the CPAs on a regular basis?	V		(4) The Company's Audit Committee assesses the qualifications and independence 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. 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.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			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. 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.	
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 of the Board of Directors and shareholders' meetings)?	V		We established the "CSR Committee" in 2015, which was further renamed as the "Sustainable Development Committee" in 2021. It has a subordinate "Working Group on Corporate Governance" headed by the CFO. The Working Group on Corporate Governance is responsible for planning and executing corporate governance matters, providing information required for 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 status of business in FY 2021 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. 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 16, 2021 to ensure the fulfillment of the Ethical Corporate Management Best Practice Principles.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			7. Arranging for the "Sustainable Development Committee" to report the implementation and results related to the Corporate Social Responsibility 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 16, 2021 to ensure the fulfillment of the Corporate Social Responsibility 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
7. Disclosure of information (1) Does your company have a website to disclose the financial and corporate governance information of the company?	V		(1) Apacer website: (http://www.apacer.com/). We disclose information about our business, financial status, and implementation of corporate governance on our website.	No difference

Item	Description			Differences with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
(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. A business marketing division is set up to maintain 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.	No difference
(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 Q3 financial reports and monthly operating performance before the required time limit?	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 2021 financial report was published and filed on 2022/02/25, and our Q1, Q2 and Q3 financial reports and monthly operating performance were published and filed before the required time limit.	No difference

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

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

5. Continuing education of directors:

Title	Name	Course date	Organizer	Course	Education hours	Does the course meet the requirements?
Chairman	Austin Chen	2021/08/11	Securities and Futures Institute	Regulations and Operational Practices of the Audit Committee	3	Yes
		2021/09/01	Financial Supervisory Commission	13th Taipei Corporate Governance Forum	3	Yes
Director	Teddy Lu	2021/08/12	Taiwan Corporate Governance Association	Privacy Protection and Information Security Governance	3	Yes
		2021/11/11	Taiwan Corporate Governance Association	What's on the Investors' Mind: Discussion on the Corporate Sustainability Transformation Based on the ESG Investment and Finance	3	Yes
Director	Chang Chia-Kun	2021/09/10	Taiwan Corporate Governance Association	Achievement of the values of Business Mergers and Acquisitions: A Discussion on the Integration after Business Mergers and Acquisitions and Setup of the Management System	3	Yes
		2021/09/15	Securities and Futures Institute	Discussion on the Remuneration for Employees and Directors Based on the Amended Article 14 of the Securities and Exchange Act	3	Yes
Director	Haydn Hsieh	2021/10/26	Taiwan Corporate Governance Association	Competition for Management Rights and Sharing of Relevant Cases	3	Yes

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

		2021/10/29	Taiwan Corporate Governance Association	Discussion on the Blueprint 3.0 of Corporate Governance and the Responsibility of Directors	3	Yes
		2021/10/29	Taiwan Corporate Governance Association	Crisis Management Strategies Related to Business Operations and Public Opinions	3	Yes
Director	George Huang	2021/10/20	Securities and Futures Institute	2021 Legal Compliance Session of the Insider Equity Transaction	3	Yes
		2021/12/07	Taiwan Stock Exchange Corporation	2021 Cathay Sustainable Finance and Climate Change Summit	3	Yes
Representative of legal person as director	Weng Wen-Jie	2021/09/07	Securities and Futures Institute	Discussion on the Corporate Governance 3.0 from the Prosecutors' Perspective	3	Yes
		2021/10/26	Securities and Futures Institute	Discussion on the Corporate Tax Governance and Tax Technology Solution Based on the ESG Trends and the Pandemic	3	Yes
Independent Director	Max Wu	2021/10/29	Taiwan Corporate Governance Association	ESG Trends and Practice Analysis	3	Yes
		2021/10/29	Taiwan Corporate Governance Association	Discussion on How to Ensure a Board of Directors and Functional Committees with High Efficiency Based on the Performance Evaluation of the Board of Directors	3	Yes
Independent Director	Philip Peng	2021/04/27	Securities and Futures Institute	A Discussion on the Employee Reward Strategy and Tool Applications	3	Yes

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<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
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		2021/07/27	Taiwan Corporate Governance Association	Reorganization of Overseas Holding Company: The Impact of Migration Evaluation and Global Anti-Base Erosion on Multinational Corporations	1.5	Yes
		2021/09/01	Financial Supervisory Commission	13th Taipei Corporate Governance Forum	6	Yes
		2021/10/26	Taiwan Corporate Governance Association	Competition for Management Rights and Analysis of Relevant Cases	3	Yes
		2021/10/29	Taiwan Corporate Governance Association	Crisis Management Strategies Related to Business Operations and Public Opinions	3	Yes
		2021/10/29	Taiwan Corporate Governance Association	Discussion on the Blueprint 3.0 of Corporate Governance and the Responsibility of Directors	3	Yes
		2021/12/07	Taiwan Stock Exchange Corporation	2021 Cathay Sustainable Finance and Climate Change Summit	6	Yes
Independent Director	Cathy Han	2021/10/29	Taiwan Corporate Governance Association	Crisis Management Strategies Related to Business Operations and Public Opinions	3	Yes
		2021/10/29	Taiwan Corporate Governance Association	Discussion on the Blueprint 3.0 of Corporate Governance and the Responsibility of Directors	3	Yes

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<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
<tr><td></td><td></td><td></td><td>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	2021/08/11	Securities and Futures Institute	Regulations and Operational Practices of the Audit Committee	3
		2021/09/01	Financial Supervisory Commission	13th Taipei Corporate Governance Forum	3
President	Chang Chia-Kun	2021/09/10	Taiwan Corporate Governance Association	Achievement of the values of Business Mergers and Acquisitions: A Discussion on the Integration after Business Mergers and Acquisitions and Setup of the Management System	3
		2021/09/15	Securities and Futures Institute	Discussion on the Remuneration for Employees and Directors Based on the Amended Article 14 of the Securities and Exchange Act	3
CFO	Lai Zi-Wen	2021/08/19 2021/08/20	Accounting Research and Development Foundation	Continuing Education Program for the Accounting Managers of Issuers, Securities Firms and Exchanges	12

7. Implementation of risk management policies and risk assessment standards:
The Company has established the "Risk Management Policy and Procedures" on August 4, 2021 and has been approved by the Board of Directors to disclose the scope of risk management and organizational structure. The company regularly (at least once a year) submits and reports the risk management operation to the board of directors. FY 2021 operation has been reported to the board of directors on December 16, 2021. Please refer to our website for details.
(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.</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>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 23, 2022.</td><td></td></tr>
<tr><td>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.</td><td>V</td><td></td><td>The improved items in 2021 are as follows:
1. Independent directors communicate with internal audit supervisors and accountants and disclose them on the website.
2. We will continue to strengthen corporate governance and establish and improve the regulations related thereto.</td><td>No difference</td></tr>
</table>

(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:

April 2, 2022

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 Information on supervisors and directors on page 25-26 for the relevant information.	Please refer to Information on supervisors and directors on page 25-26 for the relevant information.	2	Convener
Independent Director	Philip Peng			0	
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 three meetings (A) in the most recent FY, and the attendance of its members are described below:

Title	Name	Number of meetings attended (B)	Number of meetings attended by proxy	Attendance rate (%) (B/A)	Remarks
Convener	Max Wu	3	0	100%	
Member	Philip Peng	3	0	100%	
Member	Hsieh Hui-Chuan	1	0	100%	Resigned on July 13, 2021
Member	Cathy Han	2	0	100%	Inaugurated on July 14, 2021

Other matters to be specified:

1. If the Board of Directors does not adopt or revise the suggestions of the Remuneration Committee, the decision must indicate the date of Board of Directors meeting, term, contents of the proposal, Board of Directors resolution and how we handle the Committee's opinions (if the amount of remuneration adopted by the Board of Directors is higher than that suggested by the Committee, the differences and reasons must be indicated): None.
2. In the event that any member of the Remuneration Committee has expressed dissent or reservation over the Committee's decisions, and that the dissent or reservation has been recorded or delivered in writing, the decision shall indicate the date of the Committee's meeting, term, contents of the proposal, opinions of all the members, and how the opinions of a member is handled: None.

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

Date	Meeting	Proposal of the Remuneration Committee	Resolution of the Remuneration Committee	The Company's action on the Committee's opinion
2021/02/24	1st meeting in 2021	Proposal for distribution of the remuneration for employees and directors in FY 2020	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.
2021/08/04	2nd meeting in 2021	Proposal for adjustment of the salary for managers in FY 2021	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.
2021/12/16	3rd meeting in 2021	Proposal for transfer of the Company's managers	Approved by all of the Committee members present	Approved by all of the directors present
2021/12/16	3rd meeting in 2021	Proposal for distribution of the performance bonus for managers in FY 2021	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.
2021/12/16	3rd meeting in 2021	Proposal for distribution of the employee remuneration for managers in FY 2021	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.
2021/12/16	3rd meeting in 2021	Work plan for the Remuneration Committee in 2022	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:

<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>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?</td><td>V</td><td></td><td>1. The Company's “Corporate Social Responsibility Committee (CSR Committee)” was renamed as the “Sustainable Development Committee” in 2021 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 Committee includes the “ESG Team” and the “Risk Management Team”. The ESG 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. Regular review meetings are held quarterly to follow up on the progress of implementation, and their operation was reported to our senior management (quarterly) and the Board of Directors (annually).
The items of implementation and the results thereof reported to the directors in 2021 are as follows:
<table>
<tr><th>Reports</th><th>Results of implementation</th></tr>
<tr><td>E (Environmental)</td><td>(1) The disposable chopsticks are strictly prohibited.
(2) The Company, together with the suppliers, promotes the recycling of packaging materials.
(3) The Company continuously adopts the halogen-free electronic products.</td></tr>
<tr><td>S (Social)</td><td>(1) Two sessions of internal ESG training course were provided.
(2) The Apacer Academy and the learning maps have been established, and the vaccination insurance was added for the staff.</td></tr>
</table>
</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			Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			(continued) | | (3) The project "Apacer with You" was carried out to donate supplies and receipts to the Huashan Social Welfare Foundation Tucheng Branch, and invite the employees to contribute to the New Year food collection for the elderly living along. (4) The supplier conference was held to clarify Apacer's ESG policy as well as completing the customer satisfaction survey and the ESG questionnaire survey for suppliers. | | G (Governance) | (1) The CSR Committee was changed into the Sustainable Development Committee. (2) We won the "Golden Award" for electronic information manufacturers under the category of Corporate Sustainability Report of TCSA (for four consecutive years). (3) The Company has been nominated as one of the "Emerging Brands" of the Best Taiwan Global Brands (for four consecutive years). (4) Apacer's product was recognized by the Taiwan Excellence Awards with the Silver Award. |	
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?	V		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 2021 to December 2021. 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 relevance to our main	We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies.

<table>
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<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
<tr><td></td><td></td><td></td><td>business and the level of impact on major topics are as described below:
<table>
<tr><td>Material issue</td><td>Risk assessment item</td><td>Description</td></tr>
<tr><td>E (Environmental)</td><td>Environmental impact and management</td><td>Apacer has been certified by the ISO 14001 and receives certifications on a regular basis.</td></tr>
<tr><td>S (Social)</td><td>Serious communicable disease</td><td>We review the backup on production premises and the emergency response plans every six months.</td></tr>
<tr><td rowspan="2">G (Governance)</td><td>Information security</td><td>(1) Our IT is simultaneously optimized in terms of 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>Supply chain management: raw material shortage</td><td>(1) Apacer's procurement staff actively look for alternative materials and second sources.
(2) We adjust the inventory, pull-in report for rush orders, and mechanism based on the needs.</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</td><td>We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed</td></tr>
</table>

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<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
<tr><td></td><td></td><td></td><td>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>Companies.</td></tr>
<tr><td>(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?

(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?</td><td>V

V</td><td></td><td>(2) We have put effort into improving the sources and enhancing the efficiency of resource usage, in order to achieve the objectives of waste reduction and lower the environmental impact.

(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.
<table>
<tr><th>Risk/ opportunity</th><th>Description</th><th>Potential financial impact</th><th>Response strategies</th></tr>
<tr><td>Risk</td><td>Increasingly tightened restriction of environmental laws and regulations</td><td>There is a risk of being punished for failing to conform with the environmental policies in a timely manner, or a risk of increase in operating cost and limitations on the supplies of energy or resources due to the strict regulations.</td><td>Continually keep track of the changes in laws and regulations, and foresee the trends and possible changes of laws and regulations based on the experience of external consultants and industry peers and the international cases to develop the response strategies.</td></tr>
<tr><td>Risk</td><td>Higher cost of carbon emission management</td><td>To control the carbon emission, the Company might need to update the equipment and</td><td>When updating the equipment, consider the equipment with low power consumption first</td></tr>
</table></td><td></td></tr>
</table>

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

		reduce the production, which would bring us a higher operating cost and a lower revenue.	with maintaining the quality as the principle.
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 and further bring potential business opportunities.	Strengthen the corporate image of green production by introducing energy-saving and carbon-reducing production and entering the market for green products, etc.

Item of Implementation	Status of implementation			Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
			For more information about the climate change risk management, please refer to pages 40 - 43 of the 2020 Corporate Sustainability Report.	
(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. Compared to 2020, the carbon emission in 2021 has decreased by 10%. 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 43 - 46 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 and other benefits)? Is the operating performance or results properly reflected in the remuneration for	 V V		 (1) We are in continuous compliance with the “Labor Standards Act” and have never illegally employed any worker under the age of 16. Also, we prohibit forced labor and do not allow any minor 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 wide-scale 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) As of the end of 2021, the Company’s statistics on the gender of employees around the world show a rather balanced gender ratio, with 51% of female employees and 49% of male employees. The employees of our headquarters have been analyzed based on the employee type, and the result shows that 1.7% are senior management, with a gender ratio of 1:1. 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	 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	
employees?			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? (4) Does your company have effective programs for the development and training of employees' career skills? (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	V V V		(3) We provide a safe and healthy work environment, and in 2019, we switched the OHSAS 18001 occupational safety and health system certification to the ISO 45001 certification and passed it. In addition, we conduct annual health examinations, and all new and current employees must receive safety and health training. (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 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) 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.	

Item of Implementation	Status of implementation			Differences with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies and reasons
	Yes	No	Summary	
protection policies and complaint procedures for the consumers or 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, 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: Since 2018, 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. In the RBA evaluation in 2020, all the evaluated suppliers were rated as Level "A" and 100% compliant with the RBA regulations. C. Supplier commendation: We annually hold a supplier conference to not only express our sustainable management philosophy but also commend the excellent suppliers for their great performance.	

<table>
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<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
<tr><td>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?</td><td>V</td><td></td><td>We adopt the GRI Standards published by the Global Reporting Initiative for sustainability reporting, and we prepare our reports based on its Core options within this internationally accepted reporting framework. The reports fully disclose the economic, environmental and social issues which our stakeholders are concerned with. To ensure transparency and credibility of the information disclosed, the independent and credible BSI (British Standards Institution) has been commissioned to provide assurance to the reports in accordance with the Type 1, moderate assurance standard of the AA1000 Assurance Standard (2008) and the Core options of the GRI Standards.</td><td>We are in compliance with the Sustainable Development Best Practice Principles for TWSE/TPEx Listed Companies.</td></tr>
<tr><td colspan="5">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 “CSR Best Practice Principles”, and there have been no differences.</td></tr>
<tr><td colspan="5">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</td></tr>
<tr><td colspan="5">8. If your company’s CSR reports have been verified by any relevant verifying agency, please describe in detail: Our 2020 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 2021 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.</td></tr>
</table>

(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 has established "Ethical Corporate Management Policies" which were adopted at the board meeting on November 5, 2020. To implement ethical management, the Board of Directors and senior management have designated the HR units to carry out the ethical management policies and preventive programs. This has been included in the routine audit, and reports are regularly submitted by the units to the Board of Directors annually and published on our internal website for employees to read. So far we have not found any material violation.	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 "Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies"?	V		(2) We have established the "Procedures for Ethical Management and Guidelines for Conduct" and "Whistleblowing System" to regulate unethical conduct and preventive measures. 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", the employee must be dismissed. We promote these rules during regular education and training sessions to ensure the employees understand the regulations they are required to follow during work. All contracts between Apacer and its suppliers include clauses on ethical management. We have established effective systems for accounting and internal control. Auditors regularly examine the extent of compliance with these systems in order to effectively prevent unethical conduct.	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	
(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 "Procedures for Ethical Management and Guidelines for Conduct" and "Whistleblowing System" which are implemented by the implementing units and audited by the auditing units. The relevant regulations can be reviewed and revised from time to time if required.	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) All contracts between Apacer and its suppliers include clauses on ethical management.	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 conduct prevention programs and the supervision and implementation thereof?	V		(2) According to our "Procedures for Ethical Management and Guidelines for Conduct", the HR units are designated as the units responsible for the implementation of corporate ethical management. The units coordinate with each department in implementing ethical management within the scope of the department's functions and carrying out related matters in accordance with the "Procedures for Ethical Management and Guidelines for Conduct", and regularly present reports regarding the implementation of ethical management at the Board of Directors meeting on an annual basis. The Company's "Ethical Corporate Management Policies" were adopted at the board meeting held on November 5, 2020. According to Article 5 of the "Procedures for Ethical Management and Guidelines for Conduct", the following implementation items of ethical management in 2021 were reported at the board meeting on December 16, 2021: ● Incorporation of ethical management values into the Company's business strategy	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	
			● 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) In the case of a conflict of interest in business, the relevant person notifies his/her manager and recuses himself/herself in accordance with the employment contract to prevent any conflict of interest. The circumstances and standards of conflicts of interest are clearly specified in our Code of Ethical Conduct. Personnel are required to recuse themselves and, in the event that they have learned or are facing similar circumstances, to report to their immediate superiors, managers of the HR unit, or the Board of Directors in an adequate manner. 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 audit the compliance with the unethical conduct prevention programs? Or are audits conducted by commissioned CPAs?	V		(4) In accordance with the competent authority's regulatory updates, letters and directives, we have revised our internal control and accounting systems on a regular or if needed ad hoc basis to meet operational requirements. The internal auditing units conduct assessment based on the risks of the main operating processes and design the annual audit plans. The auditors conduct audits pursuant to the plans in order to verify the status of implementation of the system and the control of defects (or risks).	In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.

Item for evaluation	Description			Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons
	Yes	No	Summary	
(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 2021, we organized internal ethical management training sessions (including labor, health and safety, environmental health, ethical standards, management systems and other RBA-related issues), which were attended by a total of 453 persons. We also demonstrated the importance of ethical management (which was included in our introduction to the RBA operation promoted by the Company) to the suppliers in the supplier conference externally held in August 2021.	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? (2) Does your company establish standard operating procedures for investigation of matters reported by whistleblowers, measures to be taken following the conclusion of investigation and relevant mechanisms for confidentiality? (3) Does your company take any measures to protect whistleblowers from improper treatment as a result of their whistleblowing?	V V V		(1) We have the "Whistleblowing System", which clearly states whistleblowing and reward systems and stipulates that the managers of the auditing and HR units are designated as the persons responsible for these matters. (2) The "Whistleblowing System" includes relevant operating procedures, follow-up measures for defect improvement and mechanisms for confidentiality. (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. In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies. In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.

<table>
<tr><th rowspan="2">Item for evaluation</th><th colspan="3">Description</th><th rowspan="2">Differences with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies and reasons</th></tr>
<tr><th>Yes</th><th>No</th><th>Summary</th></tr>
<tr><td>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?</td><td>V</td><td></td><td>We have disclosed the “Ethical Corporate Management Best Practice Principles”, “Procedures for Ethical Management and Guidelines for Conduct” and “Whistleblowing System” on our website, and we monitor the development of domestic and international regulations concerning ethical management. Moreover, we encourage our directors, supervisors, managers, and employees to make suggestions and thereby review and improve the Company's Ethical Management Best Practice Principles with the aim to achieve better outcomes of ethical management.</td><td>In compliance with the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies.</td></tr>
<tr><td colspan="5">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.</td></tr>
<tr><td colspan="5">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 16, 2021, we have not received any report regarding violation of the relevant codes and conduct guidelines.</td></tr>
</table>

(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. Apacer's personnel responsible for financial information transparency have received certificates designated by the competent authority, as follows:

Certificate	**No. of person(s)**	
	Internal audit	**Financial accounting**
Certified Public Accountant (CPA) of the Republic of China (Taiwan)	1	0
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 23, 2022

Based on the result of self-inspection of Apacer's internal control system in 2021, we hereby declare the following:

1. We acknowledge that the Board of Directors and managers are responsible for the establishment, implementation and maintenance of the internal control system. We have established such a system, with the aim to provide reasonable assurance concerning the effectiveness and efficiency of operations (including profits, performance and protection of asset safety), reliability of financial reporting, and compliance with relevant regulations.
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. Each component includes several elements. Please see the Regulations for the aforementioned items.
4. We have used the aforementioned 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, 2021, 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 of financial reporting and compliance with relevant regulations, 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 meeting on February 23, 2022. All nine Directors present approved the content of this Declaration, and none of them expressed dissent. This information is declared as an addition.

Apacer Technology Inc.

Chairman: Austin Chen signature

President: Chang Chia-Kun signature

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 BoD 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
2021.07.14	Proposal to ratify the business report and financial statements of FY 2020 was adopted.	The proposal was adopted without revision.
	Proposal to ratify the profit distribution in FY 2020 was adopted.	The proposal was adopted without revision. Cash dividends were paid on August 5, 2021.
	Proposal for amendment of the "Articles of Incorporation" was adopted.	The proposal was adopted without revision. The amendments to the Articles of Incorporation were registered on July 30, 2021.
	Proposal for amendment of the "Rules of Procedure for Shareholders' Meeting" was adopted.	The proposal was adopted without revision.
	Full re-election of directors due to expiration of the current term.	The proposal was adopted without revision.
	Proposal to exempt newly elected directors and their representatives from non-compete restrictions was adopted.	The proposal was adopted without revision.

B. Important resolutions of the Board of Directors

Term of the Board of Directors	Time	Proposal
1st meeting in 2021	2021.02.24	1. Proposal for distribution of the remuneration for employees and directors in FY 2020 was adopted. 2. The business report and self-prepared financial statements of FY 2020 were adopted. 3. Proposal for distribution of the profit of FY 2020 was adopted. 4. Proposal to issue the "Internal Control System Declaration" of FY 2020 was adopted. 5. Proposal for amendment of the "Internal Control System" and "Rules for Implementation of the Internal Audit System" for the "Sale and Collection Cycles" was adopted. 6. Proposal for amendment of the "Rules of Procedure for Shareholders' Meeting" was adopted. 7. Proposal to hold a new election of the directors due to expiration of the current term was adopted. 8. The list of candidates nominated for directors (including independent directors) after discussion was adopted. 9. Proposal to exempt newly elected directors and their representatives from non-compete restrictions was adopted. 10. Proposal to convene the regular Shareholders' Meeting in FY 2021 was adopted.

Term of the Board of Directors	Time	Proposal
2nd meeting in 2021	2021.04.15	1. Philip Tang and Steven Shih, the CPAs of KPMG Taiwan, were commissioned to act as the CPAs of the Company's financial statements, and the evaluation of their independence and resolution concerning their remuneration were adopted. 2. The quarterly consolidated financial statements for the first quarter of FY 2021 were adopted.
3rd meeting in 2021	2021.06.17	1. Proposal to decide the date and location of the postponed regular Shareholders' Meeting in FY 2021 was adopted.
4th meeting in 2021	2021.07.14	1. Proposal for Chairman elections was adopted. 2. Proposal to appoint the fifth session of the Remuneration Committee was adopted.
5th meeting in 2021	2021.08.04	1. Proposal for salary adjustment (including managers) in FY 2021 was adopted. 2. The quarterly consolidated financial statements for the second quarter of FY 2021 were adopted. 3. Proposal for establishment of the "Risk Management Policies and Procedures" was adopted. 4. Proposal for amendment of the "Internal Control System" and "Rules for Implementation of the Internal Audit System" for the "Procurement and Payment Cycles" was adopted.
6th meeting in 2021	2021.10.31	1. The quarterly consolidated financial statements for the third quarter of FY 2021 were adopted. 2. Proposal for amendment of partial provisions of the "Risk Management Policies and Procedures" was adopted. 3. The internal audit plan for FY 2022 was adopted.
7th meeting in 2021	2021.12.16	1. The strategic development and operational plans of FY 2022 were adopted. 2. Proposal for distribution of the performance bonus for managers in FY 2021 was adopted. 3. Proposal for distribution of the employee remuneration for managers in FY 2021 was adopted. 4. Proposal for transfer of the Company's managers was adopted. 5. Proposal to apply for extending contracts with financial institutions concerning the credit line and transaction limit for hedging financial products in FY 2022 was adopted.
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 "Internal Control System Declaration" of FY 2021 was adopted. 5. Proposal for transfer of the Company's accounting manager was adopted. 6. Proposal for amendment of the "Procedures for Acquisition or Disposal of Assets" was adopted. 7. Proposal for amendment of partial provisions of the "Corporate Governance Best Practice Principles" was adopted. 8. Proposal for amendment of 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 Steven Shih, the CPAs of KPMG Taiwan, were commissioned to act as the CPAs of the Company's financial statements, and the evaluation of their independence and resolution concerning their remuneration were adopted.

Term of the Board of Directors	Time	Proposal
		2. The quarterly consolidated financial statements for the first quarter of FY 2022 were adopted. 3. Proposal for issuance plan of private placement of new common shares was adopted. 4. Proposal to renew cause for convening the regular Shareholders' Meeting in FY 2022 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:

Title	Name	Date Assumed	Date Dismissal	Reason for Resignation or Dismissal
CFO and Accounting Manager	Lai Zi-Wen	2013.07.14	2022.02.23	Dismiss Accounting Manager for Position Adjustment

4. Information on CPA's professional fees

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 Steven Shih Chen Tsai-Huang	2021	3,620	715	4,335	-

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

(1) In the event the amount of non-audit professional fees paid to a CPA, the CPA's firm and any of its affiliates is at least 25% of that of audit professional fees, the amounts of audit and non-audit professional fees and the contents of non-audit service must be disclosed: N/A

(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="5">April 15, 2021</td></tr>
<tr><td>Reasons and description of change</td><td colspan="5">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 Steven Shih.</td></tr>
<tr><td rowspan="3">The commissioner or CPA terminates or declines the commission</td><td colspan="3">Parties
Circumstance</td><td>CPA</td><td>Commissioner</td></tr>
<tr><td colspan="3">Commission was terminated on his/her initiative</td><td>Not applicable</td><td>Not applicable</td></tr>
<tr><td colspan="3">(Extension of) Commission was declined</td><td>Not applicable</td><td>Not applicable</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="5">None</td></tr>
<tr><td rowspan="7">Any differences in opinions with the issuers?</td><td rowspan="5">Yes</td><td></td><td colspan="3">Accounting principles or practice</td></tr>
<tr><td></td><td colspan="3">Disclosure of financial reports</td></tr>
<tr><td></td><td colspan="3">Scope or steps of audits</td></tr>
<tr><td></td><td colspan="3">Other</td></tr>
<tr><td></td><td colspan="3"></td></tr>
<tr><td>None</td><td colspan="4">V</td></tr>
<tr><td colspan="5">Description</td></tr>
<tr><td>Other matters for disclosure</td><td colspan="5">None</td></tr>
</table>

(2) On the successor CPAs:

Accounting firm	KPMG Taiwan
Name of CPA	Philip Tang, Steven Shih
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 served in the CPAs' firm(s) or any affiliate 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	2021		2022, until April 2	
		No. of increase (decrease) of shares held	No. of increase (decrease) of shares pledged	No. of increase (decrease) of shares held	No. of increase (decrease) of shares pledged
Chairman & CSO	Austin Chen	-	-	-	-
Director and concurrent President	Chang Chia-Kun	-	-	-	-
Director	Teddy Lu	-	-	-	-
Director	Haydn Hsieh	-	-	-	-
Director	George Huang	-	-	-	-
Independent Director	Max Wu	-	-	-	-
Independent Director	Philip Peng	-	-	-	-

Title	Name	2021		2022, until April 2	
		No. of increase (decrease) of shares held	No. of increase (decrease) of shares pledged	No. of increase (decrease) of shares held	No. of increase (decrease) of shares pledged
Independent Director	Hsieh Hui-Chuan (Note1)	-	-	-	-
Independent Director	Cathy Han (Note1)	-	-	-	-
Vice President	Luo Rong-Fa	-	-	15,443	-
Vice President	Huang Mei-Hui	-	-	33,606	-
Vice President	Luo Xue-Ru	-	-	30,885	-
CTO	Li Jun-Chang	-	-	27,024	-
CFO	Lai Zi-Wen	-	-	27,024	-
Senior Head	Yin Hua-Jun	-	-	34,746	-
Senior Head	Yu Yao-Tse (Note2)	-	-	8,721	-
Accounting Manager	Huang Yi-Cheng (Note3)	-	-	5,791	-

Note 1: The independent director, Hsieh Hui-chuan, resigned on July, 2021; the independent director, Cathy Han, was inaugurated on July, 2021.
Note 2: Yu Yao-Tse was promoted to senior head on January, 2022.
Note 3: Huang Yi-Cheng was promoted to accounting manager on February, 2022.

(2) Information on share transfer: None.

Name	Reason for Transfer	Transfer Date	Transferee	Relation with the Transferee	Shares	Transfer Price
Chang Chia-Kun	Grant	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:

April 2, 2022 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.	10,050,000	9.87%	-	-	-	-	-	-	-
Teddy Lu	5,699,906	5.60%	-	-	-	-	-	-	-
Austin Chen	1,525,633	1.50%	450,268	0.44%	-	-	-	-	-
Chuang,Chung-Li	1,240,000	1.22%	-	-	-	-	-	-	-
George Huang	1,207,041	1.19%	-	-	-	-	-	-	-
UBS Europe SE Investment Account with Citibank Taiwan	1,152,731	1.13%	-	-	-	-	-	-	-
Masa Chang	1,020,000	1.00%	-	-	-	-	-	-	-
Yongjin Investment Co., Ltd.	726,000	0.71%	-	-	-	-	-	-	-
Yang Jun-Yong	580,699	0.57%	-	-	-	-	-	-	-
Credit Suisse Group AG Hosting Investment Account with Standard Chartered	506,000	0.50%	-	-	-	-	-	-	-

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, 2022 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%

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, 2022
Unit: Share/1,000s of TWD

M/Y	price (dollar)	Authorized capital stock		Paid-in capital stock		Remarks		
		Number of shares	Amount	Number of shares	Amount	Capital sources	Property other than cash as substitute for share price	Approval date and document no.
1/2021	10	200,000,000	2,000,000	101,824,346	1,018,243	Note	None	None

Note: We issue employee restricted stock in 2021.

B. Type of shares

Unit: Share

Type	Authorized capital stock			Remarks
	Outstanding shares	Unissued shares	Total	
Common stock	101,824,346 (issued)	98,175,654	200,000,000	

C. Information on general declaration systems: None

(2) Structure of shareholders

April 2, 2022

Structure / Number	Government agency	Financial institution	Other corporate bodies	Individual	Foreign institutions	Total
Shareholders (persons)	0	0	238	40,905	62	41,205
No. of shares held (share)	0	0	12,946,572	83,758,175	5,119,599	101,824,346
Shareholding ratio (%)	0.00%	0.00%	12.71%	82.26%	5.03%	100%

(3) Ownership distribution

April 2, 2022

Share	Shareholders	No. of shares held (share)	Shareholding ratio (%)
1 to 999	25,192	933,953	0.92%
1,000 to 5,000	13,364	25,792,889	25.33%
5,001 to 10,000	1,520	12,098,352	11.88%
10,001 to 15,000	371	4,726,516	4.64%
15,001 to 20,000	247	4,614,159	4.53%
20,001 to 30,000	186	4,747,216	4.66%
30,001 to 40,000	80	2,924,693	2.87%
40,001 to 50,000	71	3,312,614	3.25%
50,001 to 100,000	111	7,800,743	7.66%
100,001 to 200,000	35	4,892,001	4.8%
200,001 to 400,000	13	3,981,787	3.91%
400,001 to 600,000	7	3,378,112	3.32%
600,001 to 800,000	1	726,000	0.71%
800,001 to 1,000,000	0	0	0%
1,000,001 or more	7	21,895,311	21.52%
Total	41,205	101,824,346	100.00%

(4) Major shareholders

April 2, 2022

Share / Major shareholder	No. of shares held (share)	Shareholding ratio (%)
Phison Electronics Corp.	10,050,000	9.87%
Teddy Lu	5,699,906	5.60%
Austin Chen	1,525,633	1.50%
Chuang,Chung-Li	1,240,000	1.22%
George Huang	1,207,041	1.19%
UBS Europe SE Investment Account with Citibank Taiwan	1,152,731	1.13%
Masa Chang	1,020,000	1.00%
Yongjin Investment Co., Ltd.	726,000	0.71%
Yang Jun-Yong	580,699	0.57%
Credit Suisse Group AG Hosting Investment Account with Standard Chartered	506,000	0.50%

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

Unit: TWD/1,000 shares

Item \ Year			2020	2021	Financial information of 2022, as of March 31
Market price per share (Note 1)	Maximum		54.40	58.80	53.30
	Minimum		30.20	37.20	43.40
	Average		41.18	44.64	47.14
Net value per share	Before allocation		27.85	30.36	29.17
	After allocation		25.83	27.47	-
Earnings per share	Weighted average shares		100,898	100,898	101,335
	EPS (before adjustment)		2.88	4.81	1.57
	EPS (after adjustment)		2.88	4.81	-
DPS	Cash dividend		2.02	2.89	-
	Stock grants	-	-	-	-
		-	-	-	-
	Accumulated unpaid dividend		-	-	-
ROI analysis	PE (Note 2)		14.30	9.28	-
	PD (Note 3)		20.39	15.45	-
	Cash dividend yield % (Note 4)		4.91	6.47	-

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 2021 was approved by the Board of Directors on February 23, 2022. A cash dividend of TWD 294,272,360 will be distributed to the shareholders.

(7) The influence of the stock grants 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 2021 approved by the Board of Directors

Unit: TWD

Disclosed Information	Amount
Dividends to be distributed to employees - Cash	$62,103,000
Dividends to be distributed to employees - Stock	-
Remuneration to be distributed to directors	$8,926,460
Number of shares to be distributed to employees as dividends and the percentage it occupies in surplus to capital increase	None
Imputation after proposed distribution of dividends to employees and remunerations to directors Earnings per share	4.81 (basic) 4.71(diluted)

Note: Information related to the distribution of profit in 2021 can be accessed through the Market Observation Post System.

D. Actual distribution of the remuneration to employees and directors in 2020:

Distribution of the remuneration to employees and directors in 2020 was adopted at the shareholders’ meeting on February 24, 2021. The approved distribution was not different from the estimate. The details are described below:

Unit: TWD

Profit Distribution for FY 2020	Actual distribution	Book estimation	Difference
Dividends distributed to employees - Cash	33,993,000	33,993,000	-
Dividends distributed to employees - Stock	-		
Remuneration distributed to directors and supervisors	5,598,814	5,598,814	-

E. Names of the top-10 employees receiving the highest remuneration from the profit of 2020 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	-	8,018,000	8,018,000	2.76%
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	Xie Zheng-Zhong				
Deputy Head	Chuan Sen-yu				

(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, 2022

Type of employee restricted stock (Note 1)	1st issuance of employee restricted stock in 2021
Effective date	July 7, 2020
Issuance date (Note 2)	January 6, 2021
Number of issued employee restricted shares	926,539 shares
Issue price	TWD $0 (Issuance as a bonus)
Ratio of number of issued employee restricted shares to Ratio of 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	463,275 shares
Number of employee restricted shares from which the restriction has not been removed	463,264 shares
Ratio of number of employee restricted shares from which the restriction has not been removed to the total issued shares (%)	0.45%
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:

	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	0.60%	303,058	0	0	0.30%	303,054	0	0	0.30%
	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										
	Assistant Manager	Huang Yi-Cheng										
Employee	Senior Head	Xie Zheng-Zhong	212,331	0.21%	106,166	0	0	0.11%	106,165	0	0	0.10%
	Head	Chuan,Sen-Yu										
	Head	Chiu,Hsien-Hui										
	Deputy Head	Lin Zhi-Liang										
	Deputy Head	Huang Jian-Zhong										
	Deputy Head	Lin,Hsia-Yun										
	Deputy Head	Li,Wen-Chuan										
	Senior Manager	Tseng,Yuan-Hung										
	Manager	Kuo,Hui-Chen										
	Manager	Hsu,Mei-Hui										

7. Status of new share issuance in connection with mergers and acquisitions: N/A.
8. Implementation status of financing plans: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	2021	
	Sales amount	Sales percentage
Flash memory	4,587,046	52.83%
Memory module	4,073,395	46.92%
Other	21,952	0.25%
Total	8,682,393	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 (M.2 /SDM / mSATA /ADM)

(F) SATA/ATA Disk Chip (SDC/ADC)

(G) 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

(N) microSDHC UHS-I U1 Card, high speed UHS-I U3 V30 and A1 and A2 microSDHC /SDXC Card, USB3.2 Gen 1 Type-C Portable Flash Drive

(O) USB3.1 fingerprint protection USB
(P) USB 2.0 & USB 3.2 Gen 1 USB
(Q) 2.5” SATAIII, mSATA, M.2 and PCIe interface SSD
(R) External SSD
(S) USB 3.2 Gen 1 Portable Hard Drive
(T) USB 3.2 Gen 1 Drop-resistant Portable Hard Drive of Military Specifications
(U) Military PCIe U.2 SSD
(V) Enterprise SATA3.0/PCIe 2.5” SSD
(W) Luminance meter / Light meter / Stroboscope
(X) USB3.0 SSD Module
(Y) Anti-vulcanization DDR4 Module
(Server DIMM / Ultra DIMM / Rugged SODIMM)
(Z) Industrial IoT solutions (planning and building of smart active disaster prevention system and automated production line/packaging station, AI prediction/reporting system for smart factories, design and development of 2D/3D war room)
(AA) Smart healthcare solutions (planning and building of smart environmental safety monitoring system, smart real-time physiology/fall reporting system, LINE AI smart service management system, consulting service for long-term care plan 2.0 subsidies/engineering planning)
(BB) Optical inspection solutions (customized AI+AOI optical inspection system, planning and building of automated defect inspection system , ODM design and development services for optical equipment)
(CC) Rugged DDR4 XR-DIMM Module
(DD) High speed DDR4 2666 wide-temperature memory module
(EE) 32-Bits DDR4 SODIMM Module
(FF) DDR4 2933/3200 memory module
(GG) High speed DDR4 2933/3200 wide-temperature memory module
(HH) DDR4 32GB UDIMM/SODIMM ECC DIMM ECC SODIMM memory module
(II) Rugged DDR4 XR-LRDIMM Module
(JJ) DDR5 UDIMM memory module

D. New products to be developed
(A) DDR5 SODIMM/ECC DIMM/ECC SODIMM memory module
(B) DDR5 REG DIMM server memory module
(C) SDXC UHS-II Card

(D) Storage SSDs used by servers: PCIe U.2, U.3 SSD / BGA SSD / M.3 module / EDSFF module
(E) Mid-tower air-cooled chassis
(F) All-In-One water cooling Dual Pump Solution
(G) Gen4 PCIe SSD RGB
(H) AR smart navigation management system
(I) UV optical testing device
(J) Fall detection mmWave sensor
(K) Gen 5 PCIe SSD

(2) Overview of the industry

A. Status quo and development 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

As the initial Gartner report shows, the revenue of the global semiconductor market grew by 25.1% to the amount of USD 583.5 billion in 2021 and exceeded the threshold of USD 500 billion for the first time. (Fig. 1)

As the global economy rebounded in 2021, a shortage in the supply chain of the semiconductors occurred especially in the automobile industry. In addition, the strong demands and the rising price of the logistics services and raw materials pushed the average selling price (ASP) of the semiconductors upward, resulting in overall growth of the income in 2021.

The 5G smartphone market was another contribution to the growth of the revenue in the semiconductor industry. The production volume of the smartphones doubled in 2021 to 555 million pieces, in comparison with the 250 million pieces in 2020. The sanction that the White House imposed against HUAWEI launched a transfer of orders to other smartphone OEM companies in China and pushed the supply of the 5G chip sets growing in favor of the suppliers such as Qualcomm, MediaTek and Skyworks. In the meantime, HiSilicon, a subsidiary of HUAWEI, suffered a decline in revenue from USD 8.2 billion in 2020 to about USD 1 billion in 2021.

Intel dropped to the second place with a growth rate of 0.5% in 2021. It has the lowest growth rate among the Top-25 suppliers.

Again, memories became the component that had the best performance. This was mainly because hyperscale cloud service providers needed more service deployments to meet the demands for remote work, learning and entertainment, and the demand for PCs and ultra-mobile devices on the end markets grew. The revenue in the memory sector increased by USD 42.1 billion in 2021 compared to 2020, occupying 33.8% of the overall revenue growth in the semiconductor industry.

DRAM has the best performance in the memory sector with an annual revenue growing by 40.4% to the amount of USD 92.5 billion in 2021. The strong demands for servers and PCs led to undersupply of DRAM. This drove a rising average selling price (ASP) in double digits within one year.

2021年排名	2020年排名	IC供應商	2021年收入(百萬美金)	2021年市佔率(%)	2020年收入(百萬美金)	2020年市佔率(%)
1	2	三星電子	75,950	13.0	57,729	31.6
2	1	英特爾	73,100	12.5	72,759	0.5
3	3	SK海力士	36,326	6.2	25,854	40.5
4	4	美光科技	28,449	4.9	22,037	29.1
5	5	高通	26,856	4.6	17,632	52.3
6	6	博通	18,749	3.2	15,754	19.0
7	8	聯發科	17,452	3.0	10,988	58.8
8	7	德州儀器	16,902	2.9	13,619	24.1
9	10	英偉達	16,256	2.8	10,643	52.7
10	14	AMD	15,893	2.7	9,665	64.4
		其他 (前10名以外)	257,544	44.1	209,557	22.9
		總半導體	583,477	100.0	466,237	25.1

Source: Gartner (January 2022)

Fig. 1 The Top-10 global semiconductor suppliers in 2021

As Taiwan Institute of Economic Research (TIER) points out, there are factors affecting the boom of the global semiconductor industry in recent years, but actually the out-of-balance between the supply and demand in the industry indicates the uncertainty at the supply end on the international chip market and the unbalanced production and sale of the chips. Though many semiconductor manufacturers announce expansion of their production capacity, the current shortage of chips cannot be solved completely due to the time-consuming deployment of new production lines. This indicates that the domestic and international semiconductor industries will be fairly prosperous and have a stable growing trend in 2022.

The global economy has started recovering and the consumption restored gradually after the pandemic. A new round of investment occurs in many industry sectors and an investment level exceeding that prior to the pandemic is expected in 2022 to drive a short-term demand for semiconductors. The trend of digital transformation in the overall economy may also bring the applications of the semiconductors to a new level (e.g. mobile payment and autonomous vehicles in the digital transformation applications). Furthermore, the 5G, high performance computing, AI, IoT, electronization and electrification of vehicles, NEV, metaverse, and other end application markets create a core development for which more semiconductors will be needed in a medium to long term period. For example, the demand of 5G mobile phones and related communication devices for semiconductors is growing rapidly in both category and quantity. Emerging applications require substantially more semiconductors, indicating that the ubiquitous computation will be the next killer application and make semiconductors indispensable in our daily life. To sum up, the semiconductor will keep growing at the demand end in the overall development environment.

In general, vehicles, 5G, cloud computing, AI, metaverse, IoT, AI, high performance computing and other emerging applications will remain significantly supporting the structural demand for semiconductors in a medium to long term period. Many leading suppliers release their expansion plans one after another and new capacity is expected available in 2023 at the earliest. Hence, the structural undersupply of the semiconductors will last to 2022 and the problem of tension between the supply and demand will not be solved completely until 2023, especially to the advance process, and even the mature process. As a result, the sales of the global semiconductors will still have a growth rate of about 10% in 2022.

As for the operating revenue of DRAM, the quotation of three leading DRAM manufacturers had dropped earlier. However, their performance in 4Q21 was quite different. The shipment volume of Samsung and Micron declined due to weak end demands. However, SK Hynix experienced growth against the trend with the support in the server and graphic fields. Samsung and Micron declined by 9% and 8% in price and quantity respectively, while SK Hynix enjoyed a growth rate of about 3%. As for the market share, Samsung remained No. 1 with a market share of 42.3%, following by SK Hynix with a market share up to slightly less than 30%. The market share of Micron dropped a little to 22.3% (Fig. 2).

Unit: Millions of US$

Ranking	Company	Revenue			Market Share	
		4Q21	3Q21	QoQ (%)	4Q21	3Q21
1	Samsung	10,580	11,680	-9.4%	42.3%	44.0%
2	SK Hynix	7,426	7,225	2.8%	29.7%	27.2%
3	Micron	5,587	6,091	-8.3%	22.3%	22.9%
4	Nanya	769	856	-10.1%	3.1%	3.2%
5	Winbond	259	269	-3.5%	1.0%	1.0%
6	Powerchip	67	68	-1.2%	0.3%	0.3%
	Others	346	381	-9.2%	1.4%	1.4%
Total		25,035	26,569	-5.8%	100.00%	100.00%

Note 1: 3Q21－USD 1 = KOW 1,160; USD 1 = TWD 27.9

Note 2: 4Q21－USD 1 = KOW 1,183; USD 1 = TWD 27.8

Source: TrendForce Corp., February 2022

Fig. 2 2021 Q4 DRAM brand ranking by operating revenue

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.

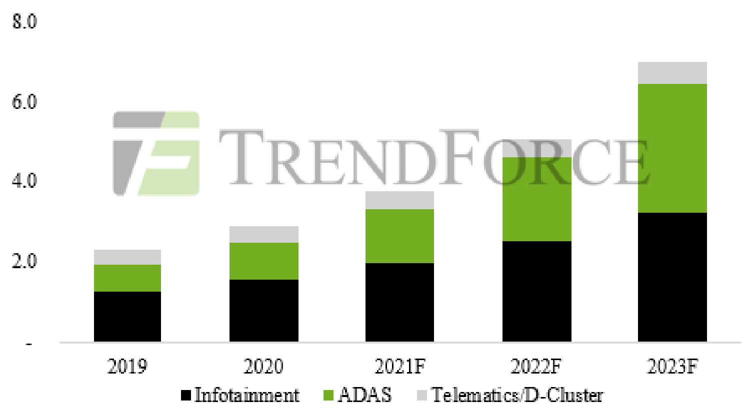
Mobile devices have played a role that drives the growth of the global semiconductor market in recent years, and their built-in functions have become more diversified. In addition, many brands of smartphones have emphasized the performance of the multi-camera function, therefore increasing the demand 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.

Two DRAM applications must be mentioned especially: memories for vehicles and metaverse devices.

Currently, DRAM 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. 3)

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.



Source: TrendForce Corp.

Fig. 3 2019~2023 Average in-vehicle DRAM consumption (unit: GB)

Metaverse was the most fashionable term in the second half of 2021. As TrendForce points out, building the metaverse that is more complicated than the cyber world requires a powerful data computing core, a network environment of low latency for transmission of massive data, and an AR/VR device with better display effect at the client end. This will bring more demands for memories, more advanced wafer manufacturing processes, 5G network communications, and development of display technologies.

As for the memory, the conceptual framework of the metaverse requires the support of the edge computing. This will expectedly bring more activating factors to data centers, drive the growth of micro-servers and edge computing applications, stimulate more demand for the capacity of the DRAM in a single machine, and improve the efficiency of the storage media simultaneously as well as making the higher writing speed of SSD in comparison with HDD become a required option.

c. Overview of major DRAM suppliers

(a) Prices dropped in 2021 Q4 and the profitability of DRAM manufacturers was reversed downward

In the respect of the profitability, the optimized cost brought about by the increased percentage of the advance process could not make up the decline of the price due to the drop of the quotation. The profitability of the three leading manufacturers went downward in 4Q21. The operating income of Samsung, for example, declined from the previous 53% to 50%. The operating income of SK Hynix dropped from 47% in Q3 to 45%, though the shipment volume went upward. The operating income of Micron, the third largest manufacturer, was reduced from 42% in the previous quarter to 41% during the period from September to April (Fig. 4). The 1Q22 OEM contract price dropped by 8-10%. Though the range of the drop in 2Q22 will be expectedly narrowed, a rising trend is not foreseeable. The DRAM suppliers are still facing a trend of declined profitability and the three leading manufacturers can do nothing but increase the percentage of their advanced processes and optimize their product portfolio to mitigate the impact of the quotation.

Company	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21
Samsung	32%	41%	41%	36%	34%	46%	53%	50%
SK hynix	26%	35%	29%	26%	29%	38%	47%	45%
Micron	16%	21%	25%	21%	26%	38%	42%	41%
Nanya	13%	20%	14%	9%	17%	31%	38%	37%

Source: TrendForce Corp., February 2022

Fig. 4 Operating profit margins of DRAM manufacturers

(b) The output of the DDR3 products was reduced while more DDR5 products were put into mass production

The memory specifications have been transferred to DDR4 or LPDDR4 in many consumer electronics such as medium-end and high-end TVs and OTT products and the soar-up of the DDR3 price in the first half of 2020 has further increased the penetration of DDR4. However, DDR3 1/2/4GB is still an important component to the applications that do not have special requirements for the speed, bandwidth and capacity of the memory, especially network communication products. As for the suppliers, on the other hand, the supply could be maintained during the period when the price of DDR3 soared up in the first half of 2020, but all the three leading manufacturers adjusted their DDR3 capacity downward again to cope with the reversed downward trend of the price in the second half of the year. The supply of the DDR3 dropped substantially due to the transfer of the old processes to the production of logic ICs, or introduction of 20nm to DDR4 4Gb like what Samsung was doing.

As the era of high frequency and speed comes with the applications of AI, big data, IoT and HPC (High Performance Computing), the demands for storage and rapid access speed up the upgrade of the memory. On the other hand, the Intel Alder Lake-S 12G Core processor is the first product supporting the new DDR5, indicating the introduction of the unprecedented DDR5 application to the market. Though the roll out of the AMD's DDR5-supporting platform is somewhat delayed, the Zen 4 processor is expectedly available in the middle of 2022 and will make additional contribution to the growth of DDR5. All the three leading suppliers are proactively investing in the mass production of the DDR5 products. SK Hynix has recently developed an 24Gb DDR5 sample with the largest capacity in a single DRAM chip. It uses the EUV process and the 4G 10nm (1α) technology to increase the capacity from 16Gb of a single 1y chip to 24Gb at an increasing rate of 33%. DDR5 is expected to be used in the server CPU mass production at a percentage of about 20% at the end of this year and over 50% at the end of next year. Micron also invests many R&D resources in the field of DDR5. Like SK Hynix, the penetration of DDR5 will expectedly reach up to 20% at the end of this year. The product will mainly be used in the PC and server applications in the first and second half of the year respectively. Samsung announced that it will introduce the most advanced DDR5 solution in the industry on the basis of the EUV and 1alpha nm technology.

(c) Expansion of the plants became slower and stabler and the increase in bits was dependent on the process transition

The worsened shortage of materials in the supply chain slower down the purchase of the DRAM products. Though the manufacturers allege a low inventory level, it actually starts increasing in general if WIP (Water Bank) is incorporated in the calculation. The manufacturers plan the expansion of the plants in a stable and conservative manner this year and do not execute the previous plan to expand the plants substantially. As for the contribution to the increase in bits, the ratio between the sources from the increased capacity and process transition is 4:6. In general, the supply of the industry in bits will grow by about 19% this year.

(d) DRAM plant process transition schedule

For process technology, Samsung still focuses on the transit of the process to 1Znm or even to the 1alpha nm of the next generation in 2022. The proportion of 1Znm was in line with the increase in production of P2L. It will be increased to about 40% at the end of 2022. The 1alpha nm was put into production in a small quantity in the second half of 2020 with P1L playing a key role in the production. Line 17 will be introduced in 2022. 1alpha nm is produced using the EUV machine. Unlike the 1Znm that is only introduced partially (only one layer of 1Znm), the 5L EUV technology will be applied to the new 1alpha nm.

In the planning of the process, SK Hynix improves the yield rate of the advanced process stably. Transition to the advanced 1Z nm and 1alpha nm processes are the focus this year. This not only ensures the increase of the bits, but also enhances the advantage in the cost. Both process will have a joint percentage of more than 50% at the end of 2022 as estimated. In addition, the 1 alpha nm will be the first process for which SK Hynix introduces the EUV machine.

As the R&D of the most advanced 1Znm and 1 alpha nm processes progresses smoothly, the output of both products increases substantially. Micron Technology Taiwan (the former Inotera) has currently 30% of 1alpha nm and the 1Ymn process occupies 30% of the production capacity. 1Z nm is ignored directly as planned. Micron Memory Taiwan (the former Rexchip) ignores 1Y nm and transits from 1X nm to 1Z nm directly. Currently, the production volume of the 1alpha nm products is increased substantially. Part of the wafers was impaired during transition to the 1Ynm process due to the limited space of the plant in Hiroshima, Japan. The office next to the plant in Hiroshima is currently used as an extension to ensure the plant can maintain a capacity of more than 100K after transition to the advanced process.

The PSMC 25nm process has been introduced to mass production for a relatively long period of time. However, since DDR4 4Gb products have basically already failed, the focus of this process is mainly on DDR3 4Gb products. Though the 20nm process is used, it is at the very beginning stage and there is no initial yield rate available.

Nanya arranges the self-developed 1Anm 1Bnm at the same time and conducts the R&D simultaneously. The progress is slightly left behind the schedule. The 1Anm will enter the sample delivery stage in the first half of 2022 and be put into mass production in Q3 in the hope to have an output of 10% at the end of 2022. The major product is currently 20nm at a percentage of about 80%. Since the market of DDR4 8Gb is weak, Nanya transfers some capacity of 20nm from DDR4 back to DDR3 for more profit. (Fig. 5.)

Company	Current Generation	Under Transition	Next Generation
Samsung	1Ynm/1Znm	1Anm	1Bnm
SK Hynix	1Ynm	1Znm	1Anm
Micron	1Ynm/1Znm	1Anm	1Bnm
Nanya	20nm	1Anm	1Bnm
Changxin	1Xnm	1Ynm	

Source: Compiled by Apacer in 2022

Fig. 5 Evolution of the DRAM process

(e) Supply-demand development of the industry

There are two positive factors at the PC end in 2021 Q4 and 2022 Q1. One of them is the mitigation of the shortage in material and the other one is the strong demand for commercial machines and the continuous growth of the ODM shipment volume. This is helpful to reduce the excessive DRAM stocks further. However, the opportunities brought about by these to positive factors will disappear gradually in 2022 Q2 and it cannot be excluded that the NB ODM shipment volume will have a seasonal rescission at the time, and, in this case, the price of the DRAM will be determined depending on the actual situation of the supply and demand.

In the resent investor conferences, however, the three leading suppliers predicted the medium to long term development of the memories in a positive manner. They introduced the EUV technology to ensure an increase of the bits on an ongoing basis. Micron emphasizes the in-vehicle DRAM as the product line that has the strongest growth momentum. 140GB DRAM has been used in the 2022 L3 autonomous vehicles. Micron expects that the compound annual growth rate of the DRAM content on the automobile market will reach up to 40% in the coming three years.

(B) Current status of the flash memory market

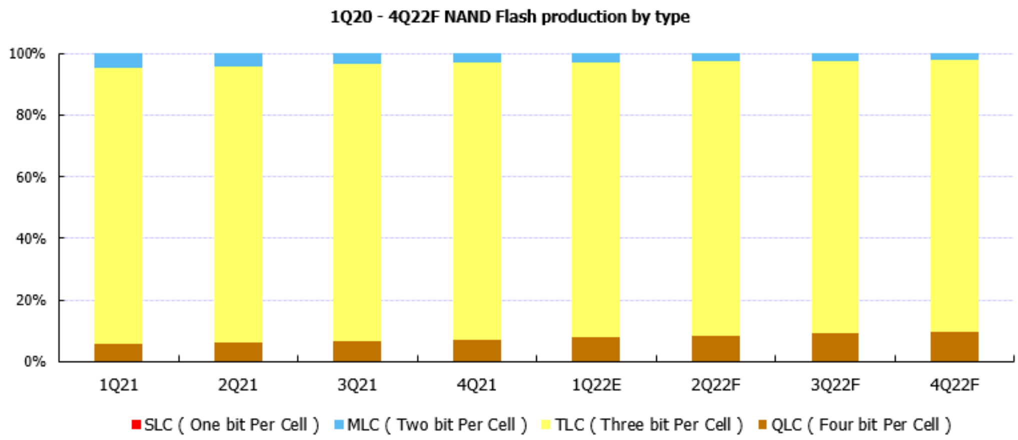
a. Market size

The global digital transformation has been stimulated from the outbreak of the COVID-19 at the beginning of 2020 to the post-pandemic era. The demand for the semiconductor products and NAND Flash storage media has been increased on the global market. These and the population of the 5G wireless technology directly bring about the high growth momentum of various storage applications. As the survey information of TrendForce shows, the sales performance of the NAND Flash products on the market started dropping in the second half of 2021, but the operating revenue grew substantially in comparison with 2020 due to the demands for the remote and cloud services stimulated by the pandemic. The total operating revenue was USD 68.6 billion with a growth rate of 21.1%. More layers are stacked on the NAND Flash structure and the increase rate of the bits remains more than 30% at the supply end. However, Western Digital and Kioxia announced the pollution of their 3D NAND Flash process on February 10, 2022. According to their reports, 16EB NAND Flash products might be disposed due to the pollution and 10% of the market share would be affected in Q1. As estimated, the total production value of the NAND Flash products in 2022 will reach up to USD 74.19 billion with a growth rate of 7.4%.

As for the supply, in 2022 the output of 3D NAND wafer production will be about 97% and the supply of 2D NAND Flash products will drop to 3%. In 2022, the TLC architecture will still be the key factor on the market with a proportion of more than 90%. Due to the slow transition of the QLC in the practical applications, an output proportion close to 10% is expected in Q4.

The 92/96L NAND Flash products have been reduced to about 20% in 2022. The 1XXL technology will be the core and the Enterprise SSD will be transited to the 1XXL structure continually and it will have a percentage between 40~45% IN 2022. As for the 1YYL products, the Micron 176L structure is the focus currently. SK Hynix has introduced the technology to the smartphone brand manufacturers. Samsung plans to deliver samples to the customers from 2022 Q1. As estimated, the 1YYL products will have a percentage of more than 27% in 2022 Q4. The output by bit in 2021 was 572,013M (8Gb equiv.) with a growth rate of 39% in comparison with 2020. A growth rate of about 30% to 743,644M (8Gb equiv.) is expected in 2022.

For product structure, SLC applications focus on demandable embedded SSDs of 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 bit output has dropped to 0.1% due to the significant increase of the 3D output. MLC occupies 2.5%. Thanks to the increased output percentage of the 3D NAND Flash products, TLC will have a percentage of about 88% in 2022 Q4 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 10% at the end of 2022. However, the transition of QLC is slower and the growth of the proportion is limited because of the durability and price considerations. As for the more advanced PLC (Penta_Level Cell), no commercialized products are expected in the coming years when the acceptance of the QLC products remains low. (Fig. 6)



Source: TrendForce Corp., March 2022

Fig. 6 Global NAND Flash production analysis by product structure

According to the operating revenue of NAND Flash manufacturers in 4Q21:

The market demand for the smartphones in China was weak and the PC OEM customers were trying to reduce their Client SSD stocks. Though the demand of the data centers grew, their purchase momentum was affected by the shortage of materials, such as CPU and PMIC (Power Management IC). The port congestion problems were serious and the quantity of cases was not sufficient for the assembly. Consequently, Samsung suffered a reduction of 5% in the shipment volume of NAND Flash products in bits in 2021 Q4 and the average unit price dropped by about 5% due to oversupply. In 2021 Q4, the fluctuation of the exchange rate led to a reduced operating revenue of the NAND Flash products by 6.1% to the amount of USD 6.11 billion in comparison with the previous quarter. However, Samsung remained the leading company in this field with its market share of 33.1%.

Kioxia experienced a strong demand of its data center customers in 2021 Q4. However, this advantage was offset by the reduction of the Client SSD stocks, and thus the purchase, at the PC OEM end, leading to a decline of about 1% in the shipment volume in bits. The average unit price was not rebounded after the market demand became weaker; however, the steady unit price of Kioxia was better than the price of other suppliers. After taking the effect of the exchange rate into account, the operating revenue of the Kioxia’s NAND Flash products in 2021 Q4 was declined by 2.6% to the amount of USD 3.544 billion in comparison with the previous quarter, and came in second place.

Thanks to the continuous purchase of the 5G flagship smartphones by leading American customers in 2021 Q4, the impact of the weak sale of the Client SSD and Enterprise SSD on Western Digital (WDC) was offset and a growth rate of 13% in bits was ensured. However, the average unit price was declined by 6% because the consumer products occupied a higher percentage in the sales volume. The operating revenue of the NAND Flash products increased by 5.2% this quarter to the amount of USD 2.620 billion.

The PC OEM and data center customers of Micron also adjusted their inventory in 2021 Q4. Though it continued introducing the 176L products, the shipment volume in Q4 remained at the same level as Q3 and the average unit price was declined by about 5% because the supply grew faster than the demand, resulting in a reduced operating revenue of the NAND Flash products by 4.7% to the amount of USD 1.878 billion in 2021 Q4.

Thanks to the continuous purchase of the data center customers and leading American smartphone companies, SK Hynix enjoyed a growing shipment of more than 10% in bits. However, the average unit price dropped by nearly 10% because the shipment of smartphones in China became weaker and PC OEM customers adjusted their inventory and the overall growth momentum was offset as a result. The operating revenue of SK Hynix's NAND Flash products grew by 2.8% to the amount of USD 2.615 billion in 2021 Q4.

Intel has finished the Phase I merger project for the sale of its NAND Flash business to SK Hynix. The new company is named Solidigm. The Enterprise SSD capacity in 2021 Q4 was affected by the shortage in the PMIC (Power Management IC) supply chain and, consequently, the shipment volume in bits was declined by 5% in the quarter. Since the demand for notebooks remained strong, Solidigm increased the shipments of PC QLC SSD in bits to reduce the capacity and the average unit price dropped in comparison with the previous quarter as a result. Consequently, the operating revenue of its NAND Flash products in Q4 was only USD 996 million with a quarterly reduction of 9.9%. (Fig. 7)

As estimated originally, the effect of the low season in 2022 Q1 would lead to an extension of the oversupply to Q2 and all the contract prices would drop. However, the pollution of the 3D process materials occurring to the Kioxia/WD joint venture plant at the beginning of February reversed the supply-demand relation on the market. The rising price was reflected first in the NAND Flash products. This may likely lead to a rising contract price in 2022 Q2.

Company	Revenue		Market Share (%)	
	2021Q4	QoQ (%)	2021Q4	2021Q3
Samsung	6,110.0	-6.10%	33.1%	34.50%
Kioxia	3,543.6	-2.60%	19.2%	19.30%
WDC	2,620.0	5.20%	14.2%	13.20%
SK Hynix	2,615.0	2.80%	14.1%	13.50%
Micron	1,878.0	-4.70%	10.2%	10.40%
Intel	996.0	-9.90%	5.4%	5.90%
Others	718.4	15.80%	3.9%	3.30%
Total	18,481	0.01	100%	100%

Unit: Millions of US$

Note 1: 2021 Q3 - USD 1 = KOW 1,160.1; USD 1 = JPY 110.1
Note 2: 2020 Q4 - USD 1 = KOW 1,183.3; USD 1 = JPY 113.6
Note 3: As a policy of Intel, the Optane SSD related products have been excluded from the calculation of the operating revenue since 2021 Q1.

Source: TrendForce Corp., February 2022

Fig. 7 2021 Q4 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.

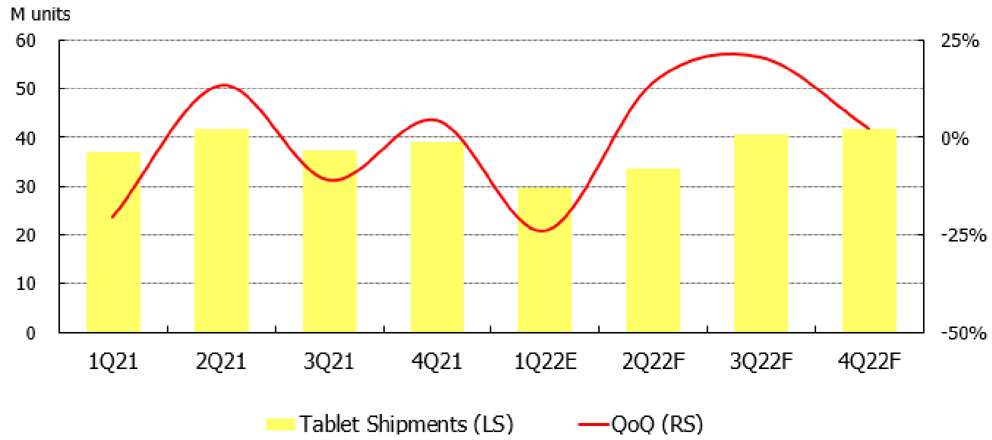
Smartphone: The shipment volume of smartphones in 2021 was 1.347 billion pieces (Fig. 8) with a growth rate of 5% in comparison with 2020. Thanks to the promotion activities in the second half of 2021 for the demands in high seasons and festivals , the total production volume of the smartphones in Q4 was 356 million pieces with a growth rate of 9.5%. This was the best quarterly performance in 2021. The new Apple smartphones were the main contribution to the quarterly growth. The total production volume of the Android smartphones was 270 million pieces remaining at the same level as the previous quarter. However, since the demands in the festivals at the end of 2021 was not so strong as expected and supply of the 4G and 5G low-end processor chips was substantially improved, the sale of high-end smartphones on the market slowed down while the supply of the middle-end and low-end smartphones was tight, especially the Android models. The sale of smartphones in China, the largest consumer market in the world, was weak. The leading manufacturers have not shipped smartphones to Russia since the outbreak of the Ukrainian-Russian War at the beginning of March. These made the leading manufacturers become conservative in their production schedule in Q1 of 2022. However, a significant increase of 40% is expected in the the sales volume of 5G smartphones in 2022, and the percentage of the share will expectedly exceed 50%. The average memory capacity of a 5G smartphone is at least 128GB and the growing average capacity of the smartphones every year is an inevitable trend.

Brand	Market share		
	2020	**2021**	**2022 (estimated)**
Samsung	22.20%	23.30%	23.25%
Apple	18.31%	20.77%	21.62%
OPPO	12.24%	17.12%	17.70%
Xiaomi	12.83%	16.59%	17.08%
Vivo	9.69%	11.17%	11.55%
Transsion	4.89%	7.16%	7.90%
Honor	0.00%	3.47%	6.28%
Lenovo	3.17%	4.38%	4.43%
Huawei	16.68%	3.17%	2.59%
Others	11.00%	9.43%	8.17%
	1.283 billion pieces	**1.347.5** billion pieces	**1.394** billion pieces

Source: InSpectrum (March 2022, with the ranking based on the sales results in 2021)

Fig. 8 2020–2022 production ranking of global smartphones by brand

Tablet: The stay-at-home economy emerging from the pandemic was declined gradually in 2021 and the sale of the tablets for binge-watching and games became slowing down, too. According to IDC's research, the shipment volume of the tablets in 2021 Q4 was 46 million sets with a decline of 11.9% in comparison with 2020 Q4. This was the second declination after the outbreak of the pandemic in 2020. The total shipment volume of the tablets on the global market was 168.8 sets (Fig. 9) in 2021 with a growth rate of 3.2%. This was the best performance over the past five years. The ranking of the Top-5 brands remained the same as Q4 of the previous year, and only the number of the market share changed slightly. Apple was ranked first with a shipment volume of 57.80 million sets following by Samsung (30.90 million sets), Lenovo (17.70 million sets), Amazon (16.10 million sets), Huawei (9.70 million sets), and other brands (36.70 million sets).



Source: TrendForce Corp., February 2022

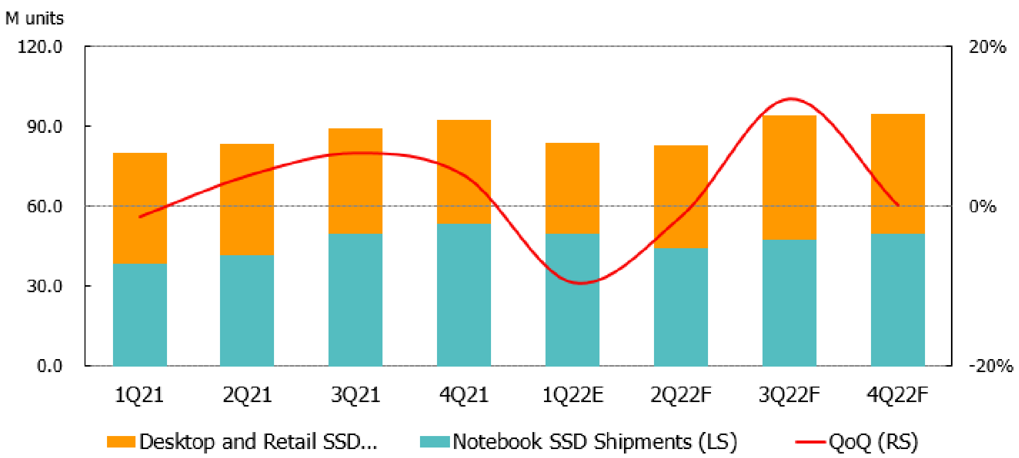
Fig. 9 2019–2022F global tablet shipment volume

SSD: The adoption rate of SATA SSD was substantially reduced for the Client SSD (Fig. 10) and the shipment percentage of the 128GB products dropped, too; this trend was favorable to slightly increase the average capacity from 549GB to 570 GB. As for the PC OEM customers, the growth rate of the total demands will be expectedly 22% in 2022. SSD is obviously better than HDD in the reading and writing speed. Intel and AMD will use PCIe as the core for their platforms of the next generation and, thus, the penetration of the PCIs SSD will be increased. These will be favorable to push the adoption rate of the SSD up to 92% in 2022. The SSD process has been transited to the 1YYL TLC products. Micron has provided PC OEM customers with 176L TLC SSD products since 2021 Q3. SK Hynix will provide its 176L SSD solution in 2022 Q2 while Samsung will not introduce its 176L solution until 2022 Q3. Kioxia/WD just transited to 112L process in 2021 Q4 and, thus, postponed the delivery of the wafer samples for its 162L SSD solution of the next generation. The mass production will be launched in 2022 Q4 at the earliest. The China-based YMTC plans to provide its 128L PC OEM SSD products in 2022 Q1 in the hope to acquire the verification from the PC OEM brand manufactures and take this opportunity to enter the supply chain for leading manufactures.

PCIe 4.0 is the core of the SSD products. However, the lack of the Intel Alder Lake chips in 2022 Q1 led to an adoption rate of PCIe 4.0 less than what was expected. The shipment percentage of the PCIe 4.0 products in 2022 will be 34.1% as estimated. The manufacturers of the PCIe 5.0 SSD plan to start the mass production in 2024. Even so, the products will be supplied with the advance players as the sales target and the penetration will not exceed 5% until 2025.

More and more manufactures will start supplying QLC in 2022. The existing manufacturers are WD, Solidigm, and Micron. SK Hynix and Samsung will provide QLC products in the second half of 2022. Kioxia plans to provide 162L OLC SSD products in 2023. The shipment percentage of the OLC products will be only 11% at the end of 2022. However, as all the manufacturers start supplying OLC, the OLC SSD products will likely make a contribution to the growth in 2023 and a penetrate rate of about 19.4% is expected.

The 2D MLC SSD target niche markets, and most SSD manufacturers have stopped producing or selling the 2D MLC SSD since the NAND Flash manufacturers have gradually reduced the output of MLC. It will be used mainly in industrial products and in-vehicle applications.



Source: TrendForce Corp., February 2022

Fig. 10 2020–2022F global Client SSD shipment volume

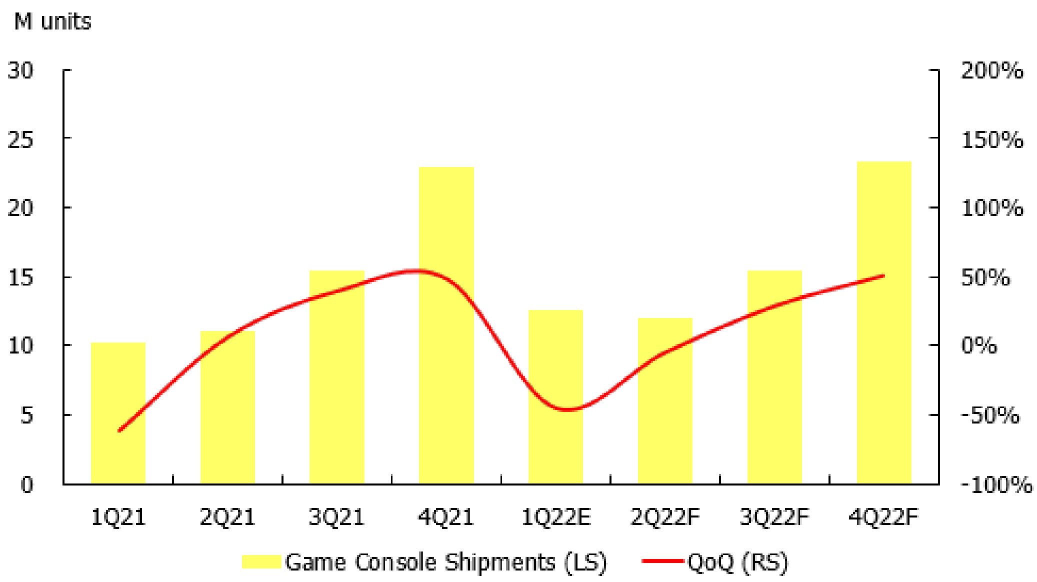
Benefiting from the COVID-19, products like Chromebooks and tablet-like NBs (such as Surface Pro, 2-in-1 NBs) experiences explosive growth on the educational market. However, the high season on the market faded away in 2021. HP performed the best on the Chromebook market in 2021. It had a shipment volume of 10.20 million sets with a growth rate of 8.5% YoY and a market share of 28%. Lenovo ranked second with a shipment volume of 8.30 million sets and a growth rate of 23.9% YoY. Acer ranked third with a shipment volume of 6.40 million sets, a growth rate of 4.9% YoY, and a market share of 17%. Dell and Samsung ranked fourth and fifth respectively. (Fig. 11)

Brand	2021 shipment volume	2021 market share	2020 shipment volume	2020 market share	YoY
HP	10.2	28%	9.4	29%	8.5%
Lenovo	8.3	22%	6.7	21%	23.9%
Acer	6.4	17%	6.1	19%	4.9%
Dell	5.4	15%	5.7	18%	-5.3%
Samsung	3.2	9%	1.8	6%	77.8%
Others	3.4	9%	2.8	9%	21.4%
Total	37	100%	33	100%	13.5%

Source; IDC, February 9, 2022

Fig. 11 2021 shipment volume and market share of Chromebook brand manufacturers

The new game console models introduced to the market in the recent two years and the deferred demands as a result of the material shortage in 2020 drove the growth in the sales volume of the game consoles in the first half of 2021. However, the negative factors such as global port congestion and pandemic in the second half of 2021 affected the sales performance during the Christmas period when a sales peak should be expected. Consequently, the annual sales volume of the game consoles was only 51.257 million sets (including Xbox one, Xbox Series X / S, Switch, PS4 and PS5). The sales volume of Nintendo Switch was 26.19 million sets and came in first place followed by Sony PS5 (14.31 million sets) and Microsoft Xbox Series X / S (8.14 million sets). Though the COVID-19 pandemic, transport and material shortage will be expectedly mitigated in 2022, the chaos of the supply chain and the bottleneck in the capacity will remain. Expectedly, 57.94 million sets of game consoles will be sold on the global market with a grow rate of 13%. Nintendo Switch will remain in the leading position, but the sales volume will start declining as the product is sold in its fifth year. However, Nintendo plans to offer a modified Switch model at the beginning of 2023 and this may support a slightly rising sales volume. By working with AMD, Sony uses PCIe4.0 SSD as the storage interface for its PS series products and adds an optimized design for SSD to the access architecture of the PS5 model. The high marketability of the PS5 game console on the global market further drives the sales of the SSD. (Fig. 12)

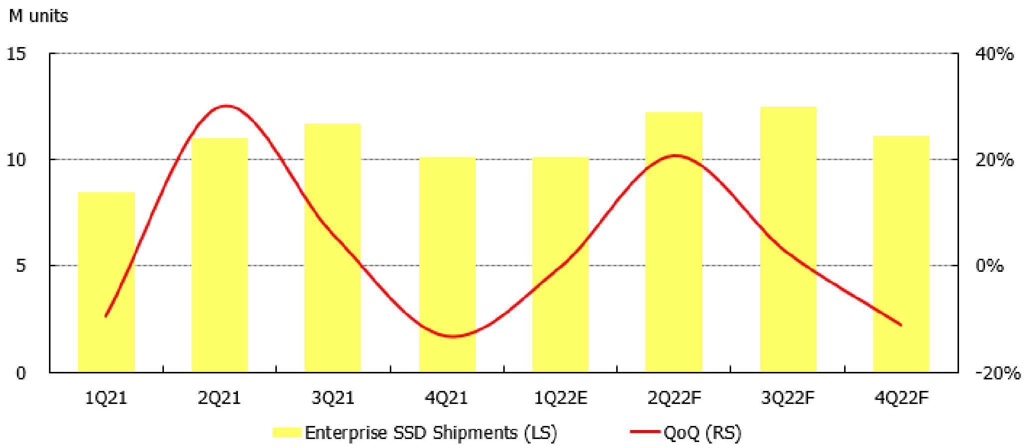


Source: TrendForce Corp., February 2022

Fig. 12 2021–2022F global game console shipment volume

The application of the Enterprise SSDs (generally meaning SSDs installed in servers) has continued to grow steadily (Fig. 13). 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, every supplier has sped up the R&D of Enterprise SSD products to enter the next process level. In addition to the Samsung and Intel 128L/144L TLC SSD as the major shipments, WD and Kioxia will transit to 112L. Though Micron has provided 176L PCIe 4.0 products for its customers to test, a substantially increased quantity of the shipments will not be expected until 2022 Q2. SK Hynix has started supplying 128L PCIe 4.0 products to its customers in North America. Solidigm is the major supplier of OLC SSD. Other supplies may likely put their PCIe QLC SSD into mass production in 2023. The shipment peak of the hyperscalers has ended and the shortage of materials on the global market has suppressed the growth of the worldwide purchase capacity. Though companies were increasing their information facilities to meet the requirements of the hybrid work mode in the future and, thus, support the SSD demands partially, the purchase capacity of the customers in North America was affected due to adjustment of their inventories in 2021 Q4, leading to a decline of the purchase volume by about 10% in comparison with the previous quarter. Intel and ADM plan to put the

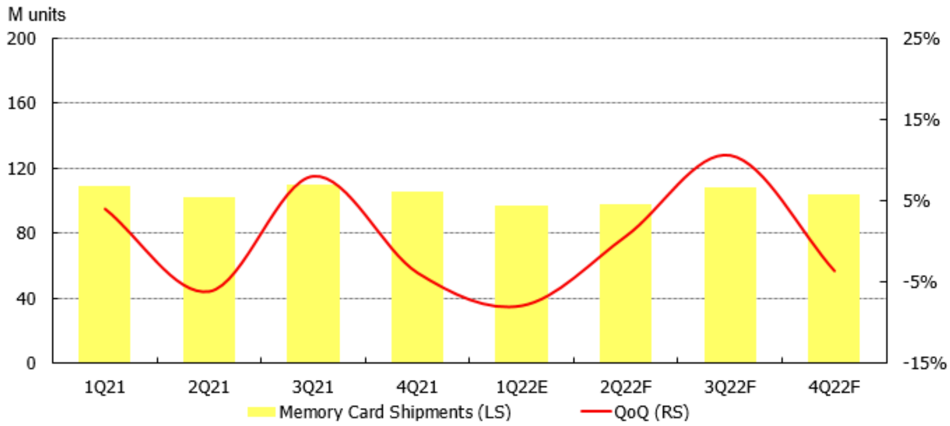
Eagle Stream and Genoa into mass production in the first half of 2022. In addition to PCIe G5, CXL (Computer Express Link) will be incorporated as a supported solution. According to the survey of the TrendForce, the NAND Flash suppliers are catching up with the mass production schedule of the Eagle Stream and plan to introduce the PCIe G5 SSD solution in Q2 or Q3 of 2022.



Source: TrendForce Corp., February 2022

Fig. 13 2021-2022F global Enterprise SSD shipment volume

Memory cards: The memory card market relies on the demand from non-Apple cellular phones. The shipment volume of feature phones declined by about 18% in 2021 with a total of 330 million pieces, leading to a shipment volume of 427 million memory cards (Fig. 13) with a drop of 13% in comparison with 2020. The shipment volume of memory cards is expected to decline every year due to the emerging cloud services and the dropping shipment volume of feature phones, and the shipment volume for 2022 is expected to decline by 5%. The SD Association announced the SD8.0 specifications in 2020. With the help of PCIe 4.0 technology, SD Express memory cards using the SD 8.0 specifications can demonstrate a transmission speed of up to 4Gb/s to meet the requirements of more advanced applications. However, the growth of the advanced SD cards will be limited prior to the mass production of the terminal support products. In addition, leading memory card manufacturers invest in the QLC support solutions. As the memory card capacity is transferred to 32/64GB, an increase in the shipment percentage of the QLC is expected every quarter in 2022.

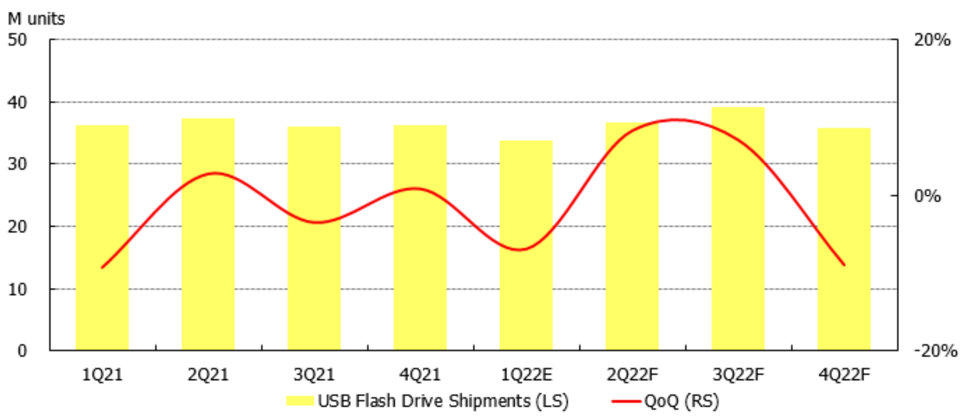


Source: TrendForce Corp., February 2022

Fig. 14 2020–2022F global memory cards shipment volume

Flash drives: In the circumstances in which the shipment volume was affected by COVID-19 and the disposable incomes of consumers were reduced, a total of 146 million flash drives was shipped in 2021 with a declination of about 10%. The total shipment volume in 2022 is expected to be the same (Fig. 15). Since Int

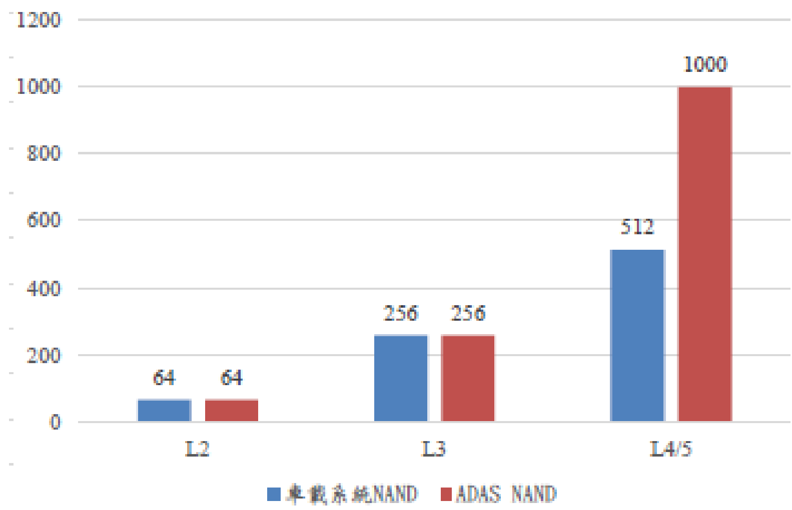
el Alder Lake fully supports USB4.0, the game consoles of the new generation require high speed and capacity, and the supply of wafers for module manufacturers is tight this year, the shipment percentage of the advanced flash drives will be expectedly increased in a shorter period of time to optimize the profitability of the manufacturers.



Source: TrendForce Corp., February 2022

Fig. 15 2020–2022F global flash drive shipment volume

Automobile market: 2021 is a tough year to motor vehicle manufacturers because the supply chain of the parts and components and the production capacity of chips were affected by the pandemic. It was a normal that no vehicles are available for delivery against the orders. The production volume of the vehicles was affected due to the lack of the chips on the global market. About 58 million new vehicles were sold globally in 2021 and 6.50 million of them were electric vehicles, indicating a growth rate of 108% in comparison with the 3.10 million electric vehicles in 2020. The sales volume of new vehicles was just doubled. As a result, the market share of the new electric vehicles was increased from 4% to 9%, in which BEV occupied a share of 6.1%. However, this did not affect the population of the BEV (Battery Electric Vehicle) and PHEV (Plug-in Hybrid Electric Vehicle) models. They had an amazing growth rate of 59% YoY in December 2021 and the total sales volume of the year was doubled with an increased market share from 4% in 2020 to 9% in 2021. The sales achievement of new electric vehicles in 2021 was very eye-catching for their outstanding growth figure and the reversed rising trend of the new electric vehicles in the circumstances in which the overall automobile market ran into a difficult situation. A total of 907,000 new electric vehicles were sold on the global market in December 2021, setting a new sales record in a single month and creating a growth rate of 59% in comparison with the sales volume in December 2020. According to a survey by IHS, the number of self-driving cars will grow at a pace of 63% between 2020 and 2040, and in-vehicle memory products and technologies have brought higher requirements. Self-driving has redefined memory demand, and suppliers of memory solutions are faced with new challenges in the memory capacity, speed and safety. As Gartner predicts, the in-vehicle memory market will grow to USD 6.3 billion in 2024. This is doubled amount in comparison with the USD 2.4 billion in 2020. Currently, the automotive technology depends more on mass data. The vehicle equipped with the ADAS system must execute more than 100 million lines of code and several hundred trillion operations with the operational amount very close to a data center, making new electric vehicle models operate like a data center with wheels. The 2022 electric vehicle model will be equipped with the Level 3 (L3) autonomous driving functions defined by the Society of Automotive Engineers (SAE), build-in 140GB DRAM and NAND of 1TB or higher. These vehicles have a higher demand for memory capacity (Fig. 16).



Source: Compiled with reference to news reports

Fig. 16 NAND capacity requirement by driving levels

Smart Speaker: The global shipment volume of smart speakers and display for domestic use was 163 million sets in total with a growth rate of 21% in comparison with 2021. China market was the largest source of the growth. On the European and American markets on which consumers must stay at home due to the pandemic, the annual growth rate in the shipment volume of the smart speakers was only 3% in 2021. Consumers like smart speakers because products in the ecological chain of smart home were innovated and introduced to the market continually, such as smart TVs, smart monitors, smart door locks and smart lamps. The global Top-5 smart speaker manufacturers are in sequence Amazon, Google, Baidu, Alibaba, and Apple. Entry-level smart speakers are equipped with small-capacity 1GB/2GB DDR3 and 1GB/4GB SLC NAND Flash. Smart speakers with middle and high prices are equipped with 4Gb/8Gb DDR3L and 4GB MLC/8GB eMMC. The memory capacity used for smart speakers is different from that of smartphones and tablets that have high capacities of 64GB, 128GB and even 256GB, 512GB or 1TB and can quickly consume large portions of the production capacity of memory. However, with the constant development of IoT, cloud applications and artificial intelligence technologies, smart speakers will be the core equipment of a smart home. The integration of smart speakers with screens can realize more applications in different scenarios. Smart speakers with screens are mostly equipped with low-power 1GB/2GB LPDDR3 and 4GB/8GB eMMC. The growth of smart speakers with screens is faster than that of ordinary smart speakers.

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 20% at the end of 2022 as estimated. 1XXL products will be the focus in 2022 and a share between 40% and 45% is expected. The production volume will be adjusted downward very quarter and transited to 1YYL products, which will expectedly have a share of about 27% in 2022 Q4.

i. Samsung currently focuses on 128L(V6), which occupied 50% in the total output. A transition to the mass production of 176L(V7) is expected in the second half of 2022.

ii. Kioxia/WD 112L(BiCS5) products are increased every quarter with the goal to reach up to more than 60% at the end of 2022. 96L(BiCS4) remains the focus in the first half of the year and 162L(BiCS6) will be offered at the end of 2022. As being affected by the pollution of the 3D process materials at the end of January 2022, both the Yokkaichi and Kitakami plants were shut down to cope with the accident. Though the production was recovered to the level before the accident in the middle of March, there were still many uncertainties.

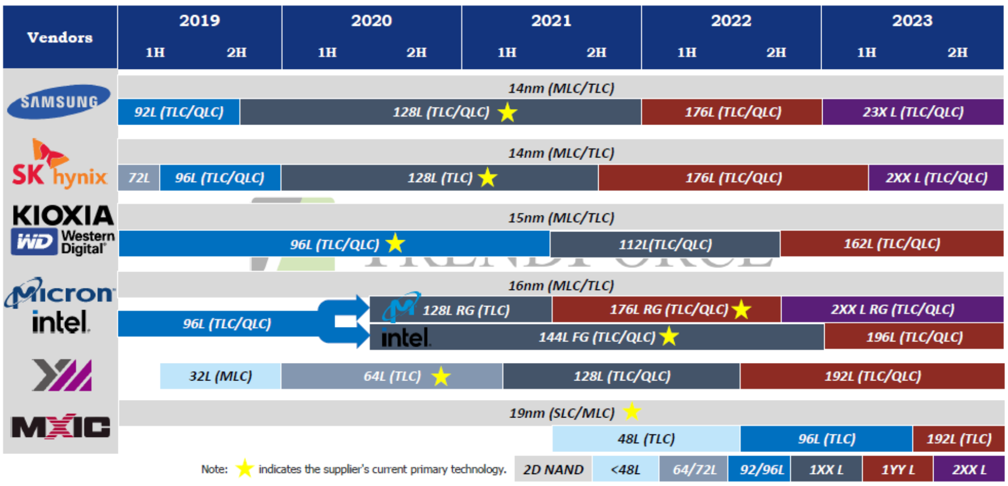
iii. In addition to increasing the proportion of 128L(V6) to more than 80%, SK Hynix will first increase the proportion of 176L(V7) in 2022.

iv. 176L (B47R) is the core product in Micron's shipments. The production lines are upgraded continuously and used to replace the old 64L and 96L processes. The upgraded 2XXL solution is under development.

v. Intel has finished the Phase I merger project for the sale of its NAND Flash business to SK Hynix. The new company is named Solidigm. SK Hynix incorporates the 128L NAND Flash in the Enterprise SSD solution to increase the market share of the Enterprise SSD. The mass production is expected in the second half of 2022. Whether the R&D and quality of the product are kept at the Intel's level is worthy to be observed.

vi. To cope with the goal of nationalization that the Chinese government pursues, YMTC will march toward an important milestone in 2022 to transfer its focus to 128L and try to narrow the gap between YMTC and other manufacturers in the cost and technology. It will also develop the 176L technology.

(For detailed description of the 2D/3D product technologies of manufacturers, see Fig. 17).



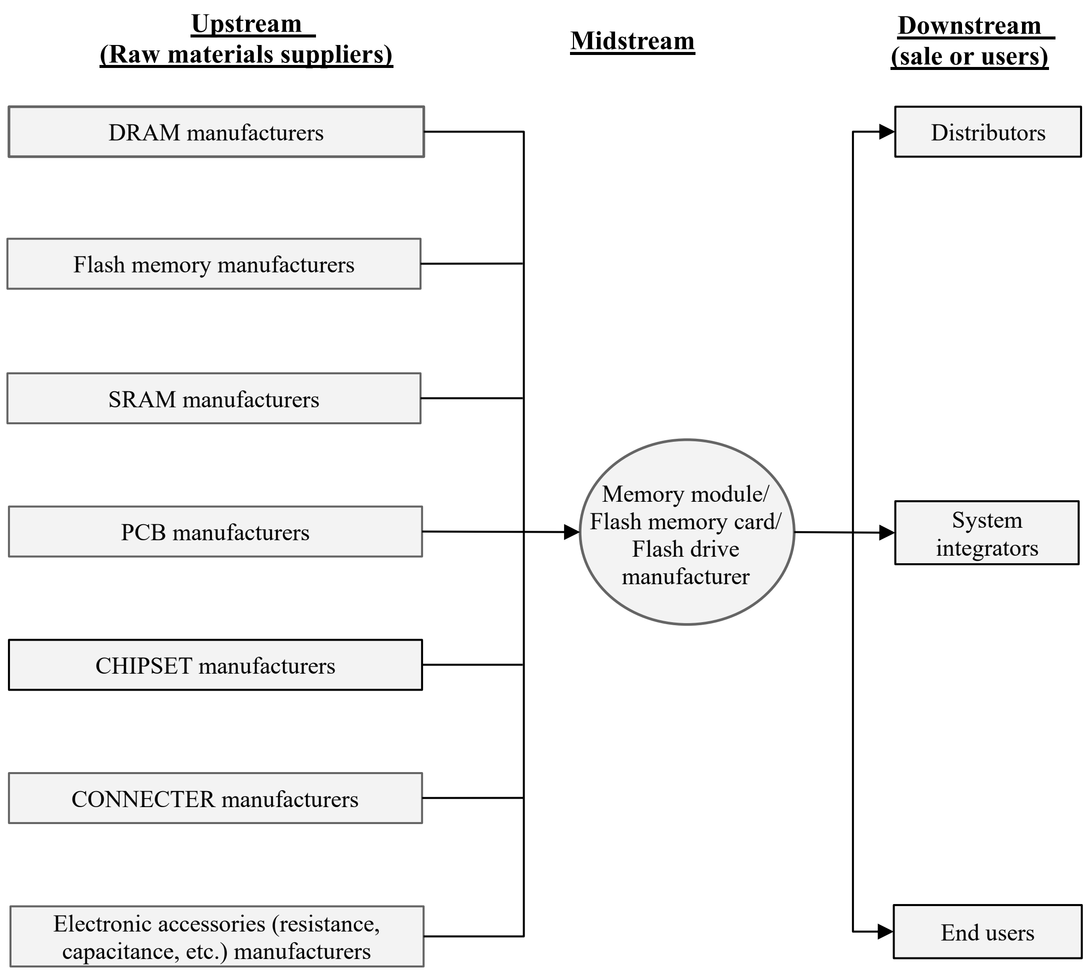
Source: TrendForce Corp., February 2022

Fig. 17 NAND Flash 2D/3D products technologies of manufacturers

(b) Industry supply and demand development

In 2022 Q1, the bit output will grow significantly because the manufacturers at the supply end are transiting to the processes with more layers. As for the capacity, the 12" wafer production in 2021 Q4 and 2022 Q1 grew by 3.3% and dropped by 5.4% respectively, or grew by 9% and dropped by 03% in bits. The pollution of the material occurring to Kioxia/WD was the reason for the declination in 2022Q1. According to the survey and analysis of the TrendForce, the 3D NAND production for a period of about one month was affected and, thus, the production volume was reduced by 100K. This pollution accident has fierce subsequent effect on the supply and demand. Another declination is originally expected in 2022 Q2, but a rising price is seen earlier due to the accident. The third quarter is the traditional high season and a growth momentum is expected.

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 format is mainly DDR4, and will gradually go into DDR5 in 2022. At the same time, the capacity of DDR4 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.

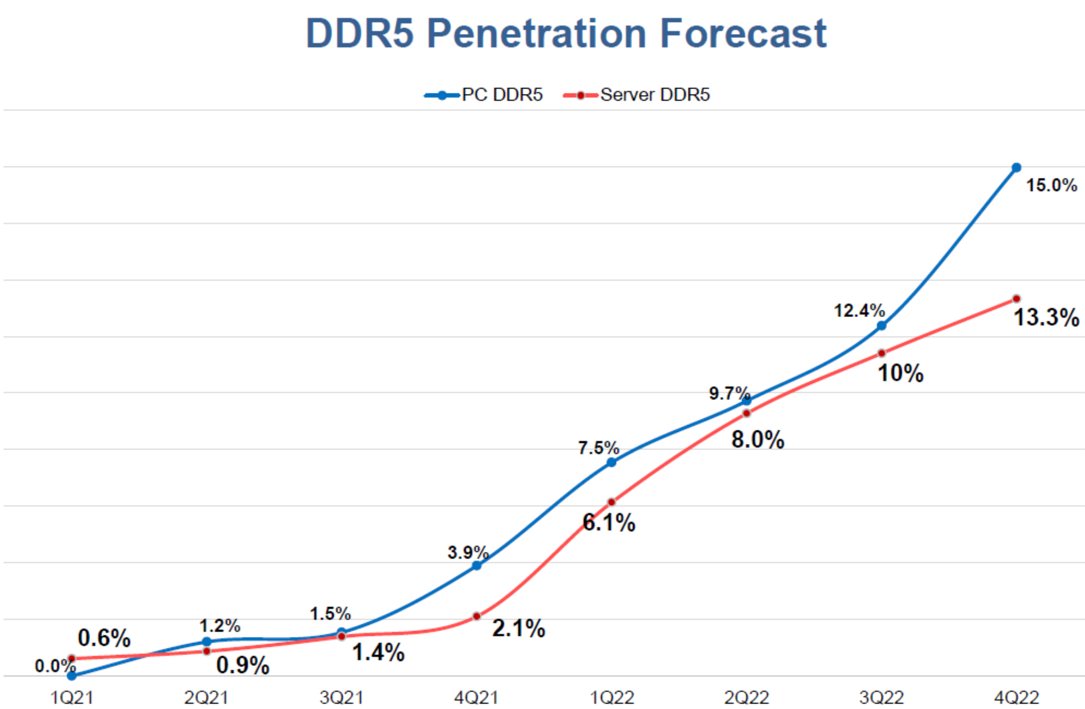
c. Hight speed:

In coordination with the speed growth of CPU, the processing speed advance of DRAM has become very important. In 2021, more than 90% of the DDR4 PC OEM memory modules were 3200Mhz. The penetration of the new DDR5 PC DRAM will be expectedly 15% in 2022.

(Fig. 18 and 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

Fig. 18 Comparison of DDR specifications



Source: inSpectrum, February 2022

Fig. 19 Estimated DDR5 penetration

(B) the development trend of flash memory

a. The main growth momentum came from the increasing storage capacity of smartphones and SSDs. The capacity of mobile phone memory and SSDs has increased. For Enterprise SSD applications, the average capacity has increased following the high growth in cloud computing and the rise of IoT. The CSPs (Cloud Service Providers) are increasing their shipments. The shipment volume of the servers will expectedly further grow by 4.5% in 2022. As for the average capacity of the Enterprise SSD, the new server CPU platform starts to support PCIe Gen4 and more SSD transmission channels. The number of the cores and the computational capability are increased substantially and, thus, using SSD of large capacity is helpful to manifest higher computing power, reduce the nodes for the server, and optimize the total acquisition cost. In the respect of applications, the demand for AI and big data computation grows continuously to stimulate the growth of the average Enterprise SSD capacity. Hence, with the incorporation of the new Intel Sapphire Rapids platform, PCIe Gen5 support is expected and a further growth rate of 33.5% in the average capacity is foreseen thanks to the increase of the transmission speed. Since the NAND Flash suppliers may narrow their 2022 capacity expansion plans, TrendForce predicts that the supply will be 743,644MGB in bits with an annual growth rate of 30%.

b. With the introduction of the 5G smartphones to the market, deployment of 5G base stations are started globally. iPhone 13 Pro/Pro Max has started to equipped with ITB products and Android may follow this strategy in 2022. The shipment percentage of the high-capacity products may be increased slightly and brand dealers may focus more on the sale of 256GB and 512GB products. A growth rate of 28.5% in the demand for smartphones in bits is expected in 2022. The shipment volume of the smartphones on the global market will be neat to 1.4 billion pieces in 2022, and the shipment volume of the 5G smartphone will have a share of more than 50%.

c. 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	2020	2021	As of March 31, 2022
R&D expenses	122,801	138,947	40,119

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 special requirements of customers. Based on the development of core storage technologies, we improve product stability and reliability and help customers solve difficult storage problems, such as the quick backup-restore firmware technology. 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.

Policies for developing new technologies and products include memory and SSD application integration and innovation. With these, we actively satisfy our costumers' needs 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 applications 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 201 approved patents for our products in Taiwan and other countries. 47 patent applications are currently pending.

C. R&D outcomes

Year	R&D outcomes
2021	1. Apacer (8271) won the Silver Award of the 2022 Taiwan Excellence Award with our patented easy-mount cooling M.2 SSD. This is a multi-functional innovative storage device and acquires the patents in Taiwan and China. With this product, Apacer provides consumers with an easy-to-mount solution of effective cooling effect. With the development of the technology, many leading leading hi-tech manufacturers are investing resources in the development of small-sized electronic products. Though M.2 has become the focus on the market, it has a problem of uneasy installation. Apacer (8271) has been devoted to storage devices for many years. In consideration that a screwdriver is needed to mount a M.2 SSD and it may drop easily during the installation, Apacer (8271) successfully developed the easy-mount cooling M.2 SSD integrated with an anti-drop screw, a quick release lever, and an aluminum cooling fin to solve this assembling problem. The user can mount the M.2 SSD quickly without the need to use a screwdriver. When mounting the product, the cooling fin can be used as the screwdriver and the user can make use of the rotating pin on the anti-drop screw to assemble the product easily without any tool. The aluminum cooling fin can effectively lower the temperature by 25%. Following the development trend of electronic products, PCIe becomes smaller in size but has high processing performance. However, operation at high temperature may lead to destruction of the data or failure of the hardware components, indication that the NAND Flash device used for storage of the data must have an enhanced heat protection mechanism. The attached aluminum cooling fin can lower the temperature by 25% and solve the problem of the high temperature generated during the operation of the SSD. The user doesn't need to worry about the reduction of the speed due to the high temperature generated during prolonged high-speed operation. 2. Apacer (8271) won the 2022 Taiwan Excellence Award with our CoreSnapshot quick backup-restore SSD firmware technology CoreSnapshot is integrated with the hardware, software, cloud and BIOS. Partners and companies can execute a complete backup and restoration SSD using different methods. The hardware trigger can be used for the execution when the operating system fails to operate. The restoration can also be executed remotely via the Internet and OOB module. CoreSnapshot is a technology structured on the firmware and companies do not need to pay any fees for the backup and restoration (e.g. backup software permit and maintenance fees). It is the best instant rescue and ideal second-based backup and restoration solution for companies. Apacer (8271) develops the exclusive CoreSnapshot quick backup-restore SSD firmware technology to back up and restore the data of a whole SSD in one second. The CoreSnapshot adopts unique disk snapshot technology that is able to back up the data written while not affecting the system operation. When any data error or damage occurs in the system, backup data can be used to instantly restore the operation using software or hardware trigger. Or, when an unexpected BSOD crash is detected in the equipment, the CoreSnapshot is triggered in a second to restore the system operation. This function can immediately solve many emergency situations such as unexpected shutdowns of production lines in automated factories, ATM errors, ransomware hacker attacks, blue screens on digital billboard screens, POS system or KIOSK crashes, etc. to avoid major operational losses caused by those crashes or shutdowns. 3. Apacer (8271) won the 2022 Taiwan Excellence Award with our four-in-one spectrum-based light meter. The light meter provides four light measuring modes for commercial, horticultural, visual and agricultural applications and measure the light intensity in the respective modes. A single meter can provide a wide measurement range (210nm~1100nm)

Year	R&D outcomes
	and has the most complete stroboscopic measurement functions of a hand-held measurement device in the industry. The product supports the BLE & BT wireless dual-mode data transmission and can meet the requirements of the lighting inspection department to integrate the product in the existing system. The four-in-one spectrum-based light meter is the ideal solution for the light quality and flicker tests. 4. Apacer (8271) is a global leading brand manufacturer of industrial control memories and **the first company that produces a full industrial-grade series of DDR4-3200 wide-temperature memory modules in the industry**. The modules are produced using Samsung's industrial-grade wide-temp OEM chips and can support Intel Tiger Lake, Elkhart Lake and AMD Ryzen™ Embedded V2000 processors of the new generation. We focus on the AIoT, edge system, and high performance computing products that usually operate in harsh environment of extreme high and low temperature and provide optimized industrial-grade high-speed wide-temp memory solutions to speed up the achievement of the AIoT, edge and high performance computing applications. Since IoT requires low power consumption and a small size to allow equipment to process data and execute computation continuously in a narrow space and at high speed 24 hours a day. The heat generated during the operation is a big challenge to the transmission performance and stability of the memory. Apacer (8271) is the first manufacturer that produces a full series of DDR4-3200 wide-temp memory modules using Samsung's chips. The products are manufactured based on the most strict specification of the industry. We are one of the few companies in the memory industry that persist in using the genuine wide-temp chips and full industrial-grade components for the production to ensure the reliability, stability and service life of the products used in the environment at a wide range of extreme temperatures from -40ºC to 85ºC. The full series of DDR4-3200 wide-temp memory modules of Apacer (8271) include UDIMM, SODIMM, ECC UDIMM, ECC SODIMM and RDIMM. 8GB, 16GB and 32GB are available for selection. The modules support Intel Tiger Lake, Elkhart Lake and AMD Ryzen™ Embedded V2000 processors of the new generation and **provide the best high-performance wide-temp memory solution to AIoT and edge computing applications**. 5. Remote work would be a normal after the pandemic. Today, storage devices has become a tool for share of information. As a global leading brand manufacturer of digital storage devices, Apacer (8271) **introduces an additional device to the military-grade HD product lines by providing an outstanding commercial AC732 USB 3.2 Gen 1 drop-resistant portable HD of military specification**. The product is able to resist a high pressure of 4,000 kg subject to the most strict specification of the industry. **It has passed the anti-drop test of the US MIL-STD-810G 516.6 Procedure IV military specifications**, equivalent to the resistance capability against 4,000 kg of rolling pressure imposed by an armed vehicle. The elegant appearance of the commercial device is totally different from the traditional rigid style of the military-grade HD. The robust aluminum material and the tie pin image create a high-end texture and commercial style with the following **five resistance features: Pressure resistance up to 4,000 kg, anti-shock, water resistance, IP68 dust resistance, and certified strict anti-drop test of the US military specifications** The dust and water resistance capability of the AC732 meet the highest IP68 standard of the industry. Dust resistance is absolutely ensure by closing the cap of the USB port tightly. When immersing the product in the water of one meter in depth, the data in the device will not be damaged within 60 minutes. The exclusive internal anti-vibration suspension structure can absorb the shock effectively. The ultra-robust USB Type-A female socket can stand 10,000 plug and push tests. There is not concern about the looseness of the connector when the product is used frequently. The product is protected with various mechanisms that allow the users to address different conditions and demonstrate their professional capability and confidence at any time. 6. Apacer (8271) is a global leading brand manufacturer of storage devices and memories in the industrial control field, **especially in aerospace and national defense applications. In consideration that these applications require high stability and reliability of the products, we provide the rugged SM23D National Defense Series of solid state drives in industrial specifications to meet the strict requirements**. For this, we use the genuine industrial-grade wide-temp chips and various rugged application technology solutions for the production. **The product passed the eight standards that the United States Department of Defense (DoD) establishes for assessment of the reliability and**

Year	R&D outcomes
	durability of a specific device in different simulated harsh environments to make sure it meets the highest military specifications (MIL-STD). These standards are applicable to the tests of shock, vibration, humidity, high/low temperature, thermal shock with the product exposed irregularly to a circular operation at high and low temperature, altitude in a stimulated environment in which a military aircraft flies at 80,000 feet under high and medium pressure, salt fog with 5% salt spray to accelerate the corrosion effect in a relatively low air flow, and radiation in a stimulated full spectrum radiative interference environment and exposure to sunlight and heat output. **The unique process deriving from the side-fill technology ensures a higher vibration bearing capability to meet the most strict requirements of the MIL-STD 810G 514.6** Fixed Wing Jet Aircraft. **This assures that the device can operate normally in an harsh environment where temperature and humidity alter fiercely and there is extremely high vibration or shock**. With the SM23D National Defense Series SSD, Apacer (8271) provides a total solution for the systems, such as the monitoring system, navigation system, communication equipment, radar system, rugged computer, and unmanned aerial/ground/marine vehicle, to resist harsh application environment and protect highly sensitive data in the aerospace and national defense areas. The product supports a variety of customized software, hardware and firmware cutting-edge information security protection technologies to avoid problems or errors during access to the data and steal of confidential and sensitive data. Correctness and security of data are always the most important issues of the aerospace and national defense applications. We customize cutting-edge information security protection technology and provide a total solution covering the software, hardware and firmware to ensure the data access security and the protection of confidential data. **In addition to the writing, reading, erasing, encrypting, security updating, and other protection technologies, the SM23D 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.** 7. Apacer (8271) is a global leading brand manufacturer of storage devices and memories in the industrial control field. To meet the requirements for mass data and high-speed transmission in the edge computing field, we are dedicated to the development of the storage devices featuring ultra-high speed and ultra-large capacity. **Based on the AMD and Intel platforms, Apacer releases DDR5-4800 UDIMM and RDIMM memory modules for industrial control applications as well as 4TB PCIe Gen4 x4 and other ultra-large SSD products**. To meet the requirements for micro terminals and 1U services, Apacer (8271) introduces a full series of VLP memories and the flexible NPLink SSD of the latest generation in line with the spatial design of different miniature devices to provide more flexible and optimized scalable operation space. They are the best storage solutions of high price-performance ratio in the AIoT era. We continue to develop software, hardware and firmware technologies and products of innovative value to meet the requirements of the vertical market applications. **Industrial-grade wide-temp chips are strictly selected for the rugged products. They support multiple coatings as well as under-fill, side-fill and anti-sulfuration technologies to ensure that the device can operate normally in an harsh environment where temperature and humidity alter fiercely and there is extremely high vibration or shock. The advanced CoreSecurity2 information security protection technology of Apacer (8271) integrates the exclusive four innovative security protection technologies to provide storage devices with higher reliability and is the best choice for the the companies to protect mass transmission and information security.** The product can fully meet the requirements of the vertical market applications for intensive reading and writing, high capacity, high speed and high durability in the AIoT and edge computing era. 8. Apacer (8271) is dedicated to realize the brand spirit of "Improved Values and Value-added Services". We deploy a full range of DDR5 memory product lines, develop products for the markets of high-performance applications, and help partners adopt the latest DDR5 products of higher performance. We also work with our strategic partners to create new business

Year	R&D outcomes
	opportunities and formulate the blueprints for a full range of product lines **that cover four categories of servers, industrial products, consumer products, and gaming products**. We collaborate with our strategic partners closely to accelerate mass production plans by connecting the chip, platform, key components, test software and SPD Programmer suppliers to provide product and technology support and ensure integrating key DDR5 technologies successfully. Apacer (8271) **has carried out the certification test of the latest JEDEC for our DDR5 memory. The product will be first provided for the earlier adopters of DDR5 technology** such as corporate and data center server, AI, high-speed computing application, high-end notebook, creator PC and gaming application markets. In addition to the platform support, The importance in the integration and test of the components should not be ignored. Apacer (8271) developed an alliance of the DDR5 ecological chain during the development of the latest DDR5 memories. All the partners in different fields from DRAM chip, CPU, motherboard, key components such as PCB, RCD (Register Clock Driver), DB (Data Buffer), power management IC, SPD Hub and temperature sensor to test software and SPD Programmer worked together to integrate key DDR5 technologies and carry out the verification. This way, we accelerated the in-depth technological development for the upstream and downstream partners to create the DDR5 DRAM that is currently closest to the mass production on the market. The DDR5 product has a bandwidth 2 times the DDR4. With the initial 4.8 Gbps as the basis, the transmission rate is higher than the 3.2 Gbps of the DDR5 by 50%. In addition to the substantial improvement of the performance, DDR5 performs better in the capacity, stability and energy efficiency. **Apacer (8271) is the first company in the industry that releases the DDR5 UDIMM, SODIMM and RDIMM DRAM modules for industrial applications within the period of six consecutive months. The products support Intel 12G Alder Lake processor, Xeon Sapphire Rapids-SP processor (Eagle stream platform) and AMD Zen4 EPYC Genoa processor, demonstrating the determination and R&D strength of Apacer in the DDR5 technology.** 9. Apacer (8271) realized the 2021 brand value of “Improved Values and Value-added Services” with our AIoT technology. We are dedicated to the development of the IoT integration services, especially the design, planning and construction of the AIoT in different public safety areas. According to the statistics of the National Fire Agency, the reasons for the fire in kitchens are usually careless cooking of food (oil pan fire), leaving with burning fire (burning in empty), and inappropriate use of gas (gas explosion) For the fire safety, Apacer (8271) introduces the automatic fire block system. With “prevention” as the core of the design and the improved value as the focus, the system is capable of upgrading the safety in the fire area of the kitchen obviously. After checking the available solutions that can meet the market demand for the safety in the fire area of the kitchen, Apacer introduces the value-added automatic fire block system to the market and deploys it in the plants and food courts of the leading hi-tech manufacturers in the science parks in northern, central and southern Taiwan. With the shortest construction period and the lowest execution cost, Apacer integrates the microwave sensing and intelligent judging systems, links them to the automated power and heat interruption systems, and integrates the fire block system with Apacer's “event shot” function to inform the administration center directly with “pictures” or “images” through Line, a communication app, to ensure effective implementation of the safety management. The system can be applied to the institutions, campuses, department stores, and other fields where heat sources and stands with cooking utensils are set up. With the fire safety management as the core, Apacer (8271) integrates and continuously inspects motors, flood, air quality, protection of personal safety and other intelligent disaster prevention and management systems as well as disaster prevention solutions, and provides them for the customized disaster prevention applications in the hi-tech industry, healthcare industry, institution and school and other fields. We provide a total solution from clarification of the customization requirements to the completion of the construction in the hope to play a leading role in the further upgrading of the smart cities via AIoT. 10. Apacer (8271) **is the first company in the industry that introduces the spectrometer beyond the LED inspection limit.** With the flexibly replaceable light collection port, one device can meet the inspection requirements that must be satisfied with LED illuminators of different sizes. There are many inspection devices on the market that collect light within

Year	R&D outcomes
	a single measurement range. As the LED sizes are diversified, many panel and assembly manufacturers must inspect the LED illuminators of different sizes before the assembly and production to improve the consistence of the brightness, color and evenness and the quality of the product. However, the single measurement range has its limit in the respect. For this, Apacer (8271) accurately solves the problems of the customers in the application based on our experience in the customized development of industrial control modules and the specialty in the R&D of optical products. Using an inspection device with a single measurement range may lead to errors in the evenness because the range of the measurement is smaller than the light collection range. To meet the requirements of the customers for the LED illumination inspection, Apacer (8271) introduces the **AL250 spectrometer with a flexibly replaceable light collection port to realize the measurement for different illumination ranges**. The AL250 spectrometer provides replaceable light collection ports ranging from 1mm to 15mm. The diffuser or attenuator exclusive to the product can be used depending on the measurement circumstances. A single unit with different light collection ports has a measurement range without limitation. The items from LED chip, illuminating logo on the mouse, small-spaced LED display, Mini-LED panel and Micro LED panel to light box of high brightness can be measured by replacing the light collection port. **The AL350 spectrometer is designed in a handheld shape. It is small, portable and scalable for different measurable angles. The product has a Cross CT (Czerny-Turner) optical structure** that has the advantages of high sensitivity, optimal optical resolution, low stray light and quick measurement, and can be used for measurement of the luminance down to 0.005cd/m. When the shortest measurement time is 100us, the hight luminance is up to 50,000cd/m and can meet the measurement requirements of the latest Mini-LED and Micro LED displays. 11. Apacer (8271) is a global leading brand manufacturer of storage devices and memories in the industrial control field. With the anti-sulfuration technology reaching a new peak, **we have the advantage in the patent of the anti-sulfuration DRAM modules. The anti-sulfuration SSD has passed the strictest ANSI/ISA 71.04 G3 corrosion certification of the industry** and is the best choice for the AIoT high-speed connection and edge computing applications. As the air pollution has become a more serious global problem, it has been proved that the vulcanized erosive gases in the air have negative substantial effect on the electronic components and, thus, the life and reliability of the electronic products. The **anti-sulfuration DRAM modules** provide the highest protection against the air pollution and harsh environment and can protect the reliability and durability of the products, meet the requirements of the system for prolonged stable operation, and effectively improve the overall service life of the system. Apacer (8271) uses special alloy material and modified electrode layer for the anti-sulfuration technology. The anti-sulfuration SSD uses special material and technology that have passed the strict inspection to ensure absolute isolation from the air. With the accelerated corrosion test using the MFG (Mixed Flowing Gas) and FoS (Flower of Sulfur), the anti-sulfuration SSD is proved to have the best resistance against silver corrosion, copper corrosion and creep. The vulcanized erosive gases in the air in the indoor and outdoor environment may bring about corrosion or even creep corrosion to electronic products and circuit boards. The anti-sulfuration technologies on the market usually coat a layer of anti-sulfuration material to the resistive electrode layer. However, it is commonly seen that the problem in the process leads to deviated or bad anti-sulfuration layer and affects the anti-sulfuration effect. Apacer (8271) uses the chips and components of the full industrial control grade to product anti-sulfuration SSD. Value-added application technology can be used to provide more options. Our products are the best choice for the resistance against harsh pollution environment in the applications of indoor and outdoor surveillance, 5G base stations, petrochemicals and minerals, high-speed Internet connection servers, and edge computing. 12. The COVID-19 pandemic accelerates the development of the remote medical care and AI applications. As a leading brand in the global industrial control storage and memory modules, Apacer (8271) works with Onyx Healthcare and introduces the CoreSnapshot quick backup-restore technology to the medical equipment in the hope to provide a new solution for the malfunction and failure of the medical system with the instant backup and restoration mechanism of the SSD. This is very helpful to reduce unnecessary transport cost and the time for repair, and can help medical institutions improve their recourse utilization

Year	R&D outcomes
	efficiency and service quality for the business opportunities and challenges in the new normal of the post-pandemic era. As for the integrity and instantaneity of the data in the medical storage devices, the unexpected BSoD (Blue Screen of Death) may cause interruption of the medical service, affect the diagnostic efficiency, and miss the best time for diagnosis and treatment. Time is critical to the medical service. The medical device adopting the CoreSnapshot technology is like the emergency room for the data and can substantially reduce the time needed for troubleshooting and shorten the downtime of the system. The medical device of Onyx Healthcare is integrated with Apacer's CoreSnapshot technology. When the OS crushes and an emergency situation occurs, the operator can use the embedded hidden hardware button or built-in BIOS to execute the SSD backup-restore function and eliminate the crisis that may lead to loss of crucial data or system crush within one second, and restore the system to its normal operation state immediately. In consideration of the special application of the medical storage device, Apacer (8271) develops a client version for the CoreSnapshot technology. It uses the AES 256 SSD hardware encryption design to avoid exposing the privacy data and medical record of the patient to unauthorized external access. Apacer will be the firs company in the industry that introduces medical imaging diagnosis, patient monitoring, electronic medical record query or hospital cart applications. The solutions will be comprehensive and apply to the medical institutions and mobile screening stations. 13. Apacer (8271), a global leading brand of industrial control memories, **releases the first industrial-grade DDR5 SODIMM DRAM in the industry**. Apacer’s DDR5 SODIMM DRAM is currently sent to Intel for testing and verification. This will accelerate the development and commercialization of the industrial computers of the new generation and can be seamlessly integrated with the latest DDR5 processor platform to seize the market opportunities before the competitors. **The industrial-grade DDR5 SODIMM DRAM of Apacer (8271) uses Micron’s latest 1znm 16Gb DDR5 chips and the memory clock is upgraded up to 4800Mhz.** To meet the requirements for high stability and reliability in the industrial control applications, Apacer’s DDR5 SODIMM provides the On-die ECC checking and correcting mechanism to substantially enhance the DRAM IC's RAS (Reliability, Availability and Serviceability) and provide more stability and reliability for the system. On the other hand, **DDR5 SODIMM provides an additional power management function that controls the system power load effectively using a Power Management IC (PMIC) configuration to improve the integrity and compatibility of the signal. In addition, The 1.1V operating voltage of the DRAM is helpful to reduce the power consumption and heat generation of the system. It is thus very suitable for the deployment in the industrial control system that needs low power consumption and is not easy to cool down.** The latest processor platforms that support DDR5 might be introduced to the market one after another in the second half of 2021. The design and R&D of related products have been started accordingly. Currently, there are no DDR5 SODIMM DRAM available for development and testing on the market. This may delay the R&D of the industrial computers and even the marketing of new products. Apacer carried out the R&D of the first industrial-grade DDR5 SODIMM DRAM in the industry six month earlier and focused on the embedded system and industrial computer for high performance computing applications. With these, Apacer will help customers accelerate the development of the products and make full preparation for the DRAM market on which the new and old generations are alternating. 14. Apacer (8271), a global leading brand of industrial control memories, achieved a milestone in the R&D of the DDR5 technology by **releasing the industry's first industrial-grade DDR5 RDIMM server memory** that supports next-generation data centers, servers and industrial computer applications. Apacer (8271)’s **DDR5 RDIMM with excellent performance and reliability improves the big data transmission speed in AI and edging applications to ensure that servers run at optimal efficiency**. In seamless response to the global demand for upgrading servers, the DDR5 RDIMM is expected to hit the market along with the Intel Eagle Stream platform in Q2 2022. In addition to featuring ultra-high performance, increased capacity, and extremely low power consumption, Apacer (8271)’s industrial-grade DDR5 RDIMM memory is equipped with a 12V power management IC (PMIC) and a high-precision temperature sensor to **control the power supply load of the system effectively and improve the integrity and interference resistance of signals**. **The**

Year	R&D outcomes
	temperature of the memory is also monitored in a real-time manner to prevent overheating while ensuring excellent memory efficiency. Moreover, the **on-die ECC and side-band ECC error checking and correcting mechanisms supported by the DDR5 RDIMM provide complete end-to-end protection during data transmission and meet the reliability, availability and serviceability requirements for data centers running 24/7**. The industrial-grade DDR5 RDIMM memory not only uses a DDR5 RCD (registering clock driver), power management IC, temperature sensor and SPD hub —all of which are brand-new components— but also is developed based on a newly established channel structure offering two 40-bit fully independent sub-channels to enhance channel efficiency and reliability. The development of the memory is extremely difficult. In response to a wave of demands for next-generation servers, the industrial-grade DDR5 RDIMM memory is designed specifically for the Intel Sapphire Rapids and AMD Zen4 Genoa processors with a frequency of up to DDR5-4800 MHz. The available capacity options per memory are 16GB and 32GB. The memory also adopts advanced anti-vulcanization technologies. The DDR5 RDIMM will be launched together with Intel's next-generation Eagle Stream platform in the first half of 2022. Our development is ahead of schedule and we will create the most comprehensive industrial-grade DDR5 memory product lines to offer our customers the best backing and support. 15. As a leading digital storage brand, Apacer (8271) pursues technology breakthroughs. **With the exclusive SSD tuning technology**, **the reading and writing performance of the M.2 Gen3 x4 SSD featuring the highest speed ever and multitasking without lag hits a record high**! The upgraded models AS2280P4U and AS2280P4U Pro SSD were launched, featuring the reading/writing speeds of 3,500 and 3,000 MB/s. They help the users quickly upgrade their notebooks and computers for pro-level multitasking. The AS2280P4U Pro is even equipped with the one-piece aluminum cooling fin which enables a reduction of 25% in the temperature and ensures a stable system performance to keep the system in the best state. The AS2280P4U/AS2280P4U Pro with the lightweight M.2 2280 body are ideal for professional gamers, video creators and high-performance PCs and have a maximum storage capacity of 2TB. Their ultra-thin design allows flexible use. The SSDs are compatible with super-thin notebooks, gaming computers and mini PCs. **The one-piece aluminum cooling fin installed in the AS2280P4U Pro enables a reduction of 25% in the temperature by leveraging its advantages of high thermal conductivity and high-temperature resistance** to prevent the system from crashing due to overheating and maintain stable performance. With the AS2280P4U Pro, PC-building lovers, gamers, pro-overclockers, and photographers can work more efficiently. The built-in protection function allows quick and stable connection. To provide the users with perfect high-speed experience, several protective technologies are adopted for the AS2280P4U/AS2280P4U Pro **to effectively ensure data accuracy and stability. The SLC Caching technology with an advanced layered cache architecture is utilized to improve the products' speed**. The built-in advanced wear-leveling algorithm and ECC function can not only prolong the SSD lifespan and enhance operational stability, but also make sure that the performance of the products remains unchanged after long-time use. 16. As a global leading industrial control storage and memory brand, Apacer (8271) is devoted to the R&D of non-volatile flash memories and solid-state drives in the industrial area in response to the mainstream trend of visual contents and the demand for better picture resolutions and higher data storage.**In view of the demand in the media market, the professional highly-durable CFexpress Type B memory card that passed the test according to military specifications was released. It is designed for photographers and features high performance, high reading and writing speeds, and high reliability**, and thus has become an ideal professional photographic device for photographers. In this era where large data storage, high efficiency and good stability are required, Apacer (8271)'s professional highly-durable CFexpress Type B memory card series features lightweight design and extremely high durability. The durable NAND Flash equipped with the high-speed PCIe Gen3x2 interface is adopted, and the interface's advantages of super high-efficiency and extra low-delay allow a maximum sequential read speed of 1,700 MB/s and a maximum sequential write speed of 1,200 MB/s to meet the high-speed access requirements of next-generation video cameras and cameras. In addition, the memory card supports high bit-rate 4K/8K* recording and is designed for mainstream cameras, and its

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	firmware is also tuned accordingly, to display a higher level of picture resolution and improve the post-production latitude. The memory card also passed the MIL-STD- 202G US military drop certification and the MIL-STD-810G US military shock-resistant certification, showing its excellent drop resistance and anti-shock performance. The super durable Cfexpress memory card can meet the requirements for photographing in extreme sports or high-speed continuous shooting requirements and are drop-resistant. With the help of the reliable transmission efficiency and high stability, all the best moments can be displayed. The Cfexpress memory card passed several strict tests in the laboratory in accordance with the requirements of the CompactFlash Association. The quality and efficiency of the memory card is ensured through over 12,000 plug and push tests to make sure that it is fit for use by professional photographers and meets their needs. 17. With the accelerated aging of the society, the National Development Council estimated that Taiwan is going to become a super-aged society by 2025. Concerned about the healthcare and safety issues of the elderly, Apacer (8271) has introduced the **"non-contact vital sign sensing" solution with mmWave radar device** with which the elderly's activities at the space can be detected through radar. When the elderly accidentally fall, stay in the bathroom for an extremely long time, have abnormally fast heart rate and breathing or other emergencies, the device immediately sends messages via LINE to the group that the customers designated so that the care workers in the institutions, the family members far away, etc. can make fast response. The high-tech mmWave radar used in this non-contact vital sign sensing solution is able to precisely sense the activities in at the space. The detection with camera lens is not required, which guarantees the personal privacy of the elderly; no devices have to be worn, which eases the worry that the elderly might forget to wear them. Also, the unceasing 24/7/365 automated safety detection is provided while no regular charging or manual operation of any switches is needed. Apacer (8271) has long been concerned about the elderly care issues. Thus, **with the IoT application integration as the core, we provide the "overall planning and setup service for smart healthcare" applicable to long-term care institutions, adult day care centers and elderly-friendly houses**. Proper smart solutions are available for various aspects, including the monitoring system for the safety of the living environment, the non-contact vital sign detection for the elderly's safety and health, and the notification and management mode convenient for the institutions' management; flexible selection and customized planning and setup based on the field and situation are possible. The service is suitable for the elderly who live alone or those living in places like independent houses and requiring access control for security. 18. According to the statistics of the National Fire Agency, Ministry of the Interior, there were more than 900 cases of factory and warehouse fire simply during a year in 2019 and 2020. Apacer (8271) knows how important the fire and disaster prevention is to the plants and factories, so **the "active disaster prevention system" that detects and reports abnormalities and even actively wards off the sources of potential disaster when no one is at the place to timely deal with the emergency is developed to effectively prevent the fire**. Apacer (8271) has developed the smart active disaster prevention system. When there is a high risk of fire, such as the situation of a gas stove not turned off or power overload, our active disaster prevention system will be triggered right away and simultaneously notify the relevant personnel via LINE and the management system. After notifying, the system will automatically turn off the sources of disaster like power or gas stove if the problem fails to be solved immediately, preventing fire in a timely manner. Aside from the notification and prevention of fire, Apacer's customized online management platform can even produce statistics on the detected values, and further manage the potential sources and possible situations of disasters through long-term data accumulation to achieve more thorough early prevention. In addition, the "cost-effective integration plan for multi-equipment/systems" is developed with disaster prevention as the core and basis. It creates an integrated system that covers the three main topics: disaster prevention, production line utilization and energy monitoring, and can be adjusted through customization based on the customers' requirements. This system includes the monitoring and detection management in multiple aspects such as gas leak, equipment temperature, air quality, water leak sensor, smoke exhaust system, etc. It can make continuous motor diagnosis for early warning and detect the pipeline flow/pressure to further achieve the monitoring and management of energies. As the complete planning and setup of the system helps prevent the potential

Year	R&D outcomes
	disasters, save the loss and production costs and boost the production capacity, it is going to become an essential basis of the advanced factories. 19. Apacer (8271), the globally leading industrial control storage and memory brand, has introduced the **new generation of CH120 series of industrial memory cards with 112-layer BiCS5 3D TLC featuring ultra-low latency, high endurance and great resistance to harsh environments**, fulfilling the considerable application needs for the speed and accuracy of mass data computing, the durability of storage devices, and the resistance to harsh environments. Owing to the huge demand for the application and storage of intelligent face recognition, edge computing storage devices, including cameras, sensors and monitors, must continuously collect, transfer, analyze and feed back the real-time data. **Apacer's (8271) CH120 series of industrial memory cards, which use 112-layer BiCS5 3D TLC NAND technology, can effectively increase the SSD capacity and achieve a transmission efficiency with ultra-low latency. Produced using the wide-temp OEM chips and components with full-scale industrial grade, they can be applied to harsh environments of -40°C~+85°C, and provide the random 4K read/write speeds of up to 4000/2000 IOPS as A2 memory cards**. Through the over-provisioning technology, the write amplification can significantly go down, which extends the SSD lifespan. Meanwhile, Apacer's SLC liteX technology is adopted to provide up to 30,000 P/E cycles, which is ten times better than the 3D TLC 10 in the market. With the optimization of the software, hardware and firmware, the best reliability and durability are given. 20. 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 constituted of a CMOS image sensor and a 32-bit RISC microcontroller**, which has a compact optical structure allowing its dimension to be reduced, and is developed for the measurement of night vision capability system. 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, and the receiving range of the circuit is enhanced from 100~10000lux to 10~200000lux. As the ratio of light collection level to produced current of the optical sensor is a fixed value, the light collection range can be adjusted by changing the matched resistance. The circuit uses an analog switch with different matched resistances applied for various light collection levels and works with FW to achieve dynamic adjustment as well as enhancing the range of light collection. 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. Defect inspection with high accuracy is possible for panels ranging from the micro-panels of wearable devices to extremely huge Mini LED advertising screens. Apacer has also developed automated inspection devices applicable to the brightness enhancement film, polarizer, light guide plate, optical filter and other optical materials of the panel industry, effectively ensuring that every panel produced by the factory is of high quality and free from defects. In addition, Apacer (8271) has 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. 21. Apacer (8271) has been devoted to the R&D of new technologies. When it comes to the application of electronic paper, most people only think of electronic books. However, with the development of technology, electronic paper can be as thin and light as paper and bendable, and requires low power consumption. Another advantage of electronic paper is the feature of continuous display that won't disappear. It uses the general display technology

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	while presenting a visual effect just like paper printing. Meanwhile, different from LCD, electronic paper doesn't have the backlight, optical filter, polarizer, etc., which greatly reduces its weight and production costs. Based on the said advantages, Apacer (8271) has devoted the R&D resources of hardware, software and firmware to develop the application field of electronic paper, and **has further introduced the iKeeP QuizSlide with patented conductor-bridged touch buttons**. 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. The electronic paper screen, possessing the advantages of having no blue light, no angle restrictions and no glare under the sun, delivers an optimal reading effect like paper and protects people's eyes more. The four build-in learning modes, together with the progress follow-up function, can prevent boredom and improve the motivation for learning. Also, through the intelligent memory algorithms combining forgetting curve and spaced repetition memorization, and the system adjustments based on the learning behavior, the word difficulty level is automatically adjusted to help children achieve long-term memory. Besides, the **independently developed graphical interface integrated with touch buttons** ensures the sensitivity through capacitive sensing so that the users can operate smoothly and accurately. The system has a total current consumption of less than 20mA in the system standby mode and even of only 0.35mA in the sleep mode, which shows the characteristics of electronic paper. The power-saving feature has thus provided the product with the endurance applicable to more application scenarios of the consumers. Moreover, the **convenient and fast magnetic charging** is adopted. This technology makes it possible for the product to be fully charged with merely two hours, far surpassing the conventional USB plugs and guaranteeing a long service life. Furthermore, the product has a stylish dual color design. The color and line of the charm hole in the corner forms a contrast with the panel and becomes an eye-catching focus, and the asymmetrical design brings playfulness to the minimalist look. The overall weight is only 45g. The design of scattered dots on the back cover not only represents the image that iKeeP QuizSlide can achieve infinite data transfer, but also provides anti-slip feature that allows the users to enjoy a comfortable holding experience and a convenient portability. With iKeeP QuizSlide, children can learn English words even more easily. 22. Apacer (8271) 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 development of SSD application for the industrial market, Apacer **provides reading and writing speeds up to 7000/6000 Mb/s for the PCIe Gen 4 x 4 SSD products, and supports a capacity up to 2TB**, which satisfies the application needs of the market for high performance computing, etc. 23. Apacer (8271) has invested in the industrial application market for many years, possessed customization experience and technology and has been familiar with this market environment. Currently, the mainly sold SSDs can be divided into two types: conventional 2.5-inch SSD and M.2 SSD. M.2 SSD, liked by most users due to its more compact size and better transmission performance, holds a high market share and is gradually replacing the other types, therefore becoming the mainstream product of the market. However, the current M.2 SSD is limited to one function because of the area of the M.2 SSD PCB specifications. To have other value-added functions requires additional design and development of another M.2 PCB, which brings a relatively high costs to both the customers and the producers. To deal with the said problems, Apacer has designed and developed a modular M.2 storage device to provide the M.2 SSD with which the extensive use of various value-added functions is possible. Here is the main concept of the M.2 SSD design: Module PCB 1 (PCB with a length of 2230 or 2242) connects Module PCB 2 and extends the M.2 SSD PCB length to 2280. The size after extension is basically in line with the M.2 specifications. Module PCB 1 is the main storage module for M.2. The end of PCB 1 is designed as gold fingers to leave space for connection points, which is used for signal connection. Module PCB 2, the PCB for extensive value-added functions, is a clip male connector. Located in Module PCB 1 storage device, Module PCB 2 provides the main value-added functions and transfers power or data signals. By integrating or separating the PCB Modules 1 and 2, the users can have more than two M.2 SSD modes with the production costs significantly

Year	R&D outcomes
	reduced. There are five main application fields using the Module PCB 2 functions, including the design of power loss protection mechanism, and the switch designs with multiple value-added functions such as HW write protection, sound RGB LED module, OOB (out-of-band) remote management module and in-band management module. 24. Apacer (8271) **SSD cooling device patent is further applied with the M.2 SSD series products**, including PV210-M280, PV220-M280, PT220-M280, PV120-M280, and PV310-M280. With the concept of patent commercialization, Apacer has devoted the R&D resources to research and develop the market as well as satisfying the essential customer needs, and outstanding performance has been achieved. The SSD cooling device patent has brought an operating revenue of millions of dollars this year. In the future, Apacer (8271) will continue moving towards the goal of enhancing the product values by being dedicated to technology R&D.

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

A. Short-term business development plan

The Company sets “Becoming the Leading Information Service Integrator with Digital Storage” as the vision to actively encourage our employees to realize the core brand value of “Becoming Better Partners”, namely “Delivering on Our Promises, Constant Improvement and Mutually Beneficial” so as to build a corporate culture producing long-term competitive momentum. To improve our competitive strength, we came up with “three main kinds of business momentum” (focusing on the key filed, deploying future technology, promoting digital transformation of the business) in 2021 to prioritize the creation of service value and be devoted to the integration of the supply chain in the hope to collaborate with all stakeholders to maximize benefits.

In response to the current trend in technology development, we will actively develop digital storage products and technology combining the cloud and the IIOT while deploying consumer products and high-end gaming peripherals. More attention will also be put on smart applications in certain areas. The following is a brief description of our strategic plans:

(A) Focusing on key fields to improve applications for target customers

Industrial application markets have changed due to the development of technology and the impact of the pandemic. Information/communication, medical care, and ragged application products and solutions, particularly, have been rapidly developed with the advent of 5G and cloud computing. Therefore, we will put our focus on the above-mentioned industries in the short run to offer comprehensive industrial IoT solutions with more strategic partners through our multiple technologies such as the firmware storage technology (CoreSnapshot, an instant firmware backup and recovery technology) that allows customers to backup and restore data in seconds off-site through the cloud as well as the newly launched DDR5 and PCIe 4x4.

(B) Digitalizing the business to create growth momentum through transformation

The business digitalization blueprint initiated in 2017 finally had the last piece of the puzzle in place after 5 years. All the information related to the process from material ordering, production scheduling to shipment are derived through the calculation and analysis of data collected with multiple systems and displayed on our platform in a transparent, correct and effective manner to facilitate the planning and adjustment of business strategies and thereby enhance the overall operating effectiveness. This is the biggest difference that separates Apacer from other competitors and allows Apacer to stand out in the competition in the industry.

(C) Leveraging marketing technology to improve the relations with customers

Technology contributes to the evolution of marketing 1.0 oriented to products to marketing 5.0 focusing on smart marketing. Thus, it can help companies develop markets and target customers quickly and accurately. Making a deal with our B2B customers requires a lot of back-and-forth communication and discussion. The management of customer relations is thus relatively important for us. Our marketing strategies focus on reaching our most targeted customers through diverse communication channels such as exhibitions, social media, streaming platforms, websites or forums to identify customers with potential and further improve the relationship with them by using automated marketing tools in order to achieve business goals.

(D) Integrating IoT solutions with optical inspection applications

Most small and medium-sized enterprises in Taiwan have a need for integration of the IoT. However, due to their small scales and lack of sufficient recourses, it has been difficult for them to put the integration into practice. Apacer offers customized solutions suitable for the enterprises to help them finish their intelligent IoT deployment. Last year, our team gained experiences from several successful cases. We currently concentrate on the development of industrial IoT, automated optical inspection and smart care applications.

B. Long-term business development plan

In response to the international trends and the competent authority's requirements for ESG (environment, social, and governance), we took the lead to change the existing CSR Committee into the Sustainable Development Committee and develop ESG policies as a reference for operational planning. As the pandemic drives the advancement of technology, we center our attention on the R&D of 5G, information and communication, intelligent IoT, smart medical care and cloud computing applications on the basis of our core business. The main focuses of our long-term development plan are described as follows:

(A) Continuing ESG investing to move towards sustainable operation

In consideration of the importance of ESG, the Company changed the CSR Committee into the Sustainable Development Committee with the ESG Promotion Team and risk Management Team in 2021. The ESG Promotion Team is responsible for discussing important issues with five types of stakeholders, namely our employees, suppliers, customers, external organizations and social welfare groups, managing the relationships with them, confirming the progress through quarterly review meetings and ensuring that our activities every year fall within the scope of ESG to be truly in line with the international trends in sustainability. The Risk Management Team identifies material risks through regular review and then provides possible improvement or risk mitigation plans to enable us to respond to external risks at any time and to fulfill the goal for sustainable operations.

(B) Carrying on R&D investment to strengthen our professional technology

Apacer upgraded the R&D Division to the RD & Technical Center in 2020. Through prediction of technology development orientation by trend researches, we formulate short-to-long-term R&D plans and goals while actively recruiting talent in digital storage and IoT integration fields to reinforce our R&D capability. Moreover, we also encourage development and commercialization of patents by researching and developing innovative mechanisms to convert these actions into competitive momentum.

(C) Developing target markets with technology-based marketing

Marketing technology tools keep changing as the digital transformation trend surges. We grasp the opportunity of Online-merge-Offline (OMO) marketing, a leading marketing trend in the future, and use a variety of technology tools to identify potential target customers for brand messaging and business development. For example, we upload videos of different topics to our Youtube channel, including the launch of new products, professional conferences or technology demonstration, use keywords to attract target customers in specific markets, and look for potential customers with data analysis and then reach them through our business representatives. With the help of technology-based marketing, a series of media exposure measures, channel activities, conferences, physical/virtual exhibitions, social activities, etc. become the momentum of our business that creates brand benefits.

(D) Launching digital transformation and maximizing the benefit of data

Since the initiation of a digital transformation project in 2017, Apacer has introduced the MES system for enhancing manufacturing management and the CRM, ERP and BPM systems to accurately predict business opportunities and improve the operating benefits. As of 2021, we have adopted an outsourcing platform, supplier information platform, eRMA after-sales service management, operating information platform and advanced scheduling system for strengthening the management of supply chain as well as the WMS system to reinforce our logistics management. We hope to move towards the goal of “AI operation” through digital transformation and to create more benefits for our customers, partners and employees by collecting and analyzing data as a reference for developing strategies, thereby improving corporate business performance.

(E) Increase talent retention rate and establish talent supply chain systems

Talent is one of the key properties for corporate operation. Apacer has a talent supply chain system in place to train our employees to become required talent. We have performed a comprehensive review for the system since 2020. With position and competency as the core concerns, we provide training in line with our organizational strategies and objectives. The Training Academy was launched in 2021. 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.

2. Market and production and sales status

(1) Market analysis

A. Sales region for major products

Unit: TWD 1,000

Region \ Year		2020 Sales amount	2020 %	2021 Sales amount	2021 %
Domestic sales		1,338,231	18.71%	1,772,385	20.41%
International sales	America	1,134,848	15.87%	1,647,746	18.98%
	Europe	1,776,997	24.85%	1,996,269	22.99%
	Asia	2,837,645	39.68%	3,191,512	36.76%
	Other	64,501	0.90%	74,481	0.86%
	Subtotal	5,813,991	81.29%	6,910,008	79.59%
Total		7,152,222	100.00%	8,682,393	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 2021 was 10.26%.

Unit: TWD 1,000

Name of Company	Net Operating Revenues	Market Share
Apacer	8,682,393	10.26%
ADATA	39,593,764	46.79%
Transcend	14,314,815	16.91%
Team Group	7,651,772	9.04%
Silicon Power	4,189,050	4.95%
Innodisk	10,195,658	12.05%
Total	84,627,452	100.00%

Source: All companies' 2021 consolidated or individual financial reports that have been certified by CPAs

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

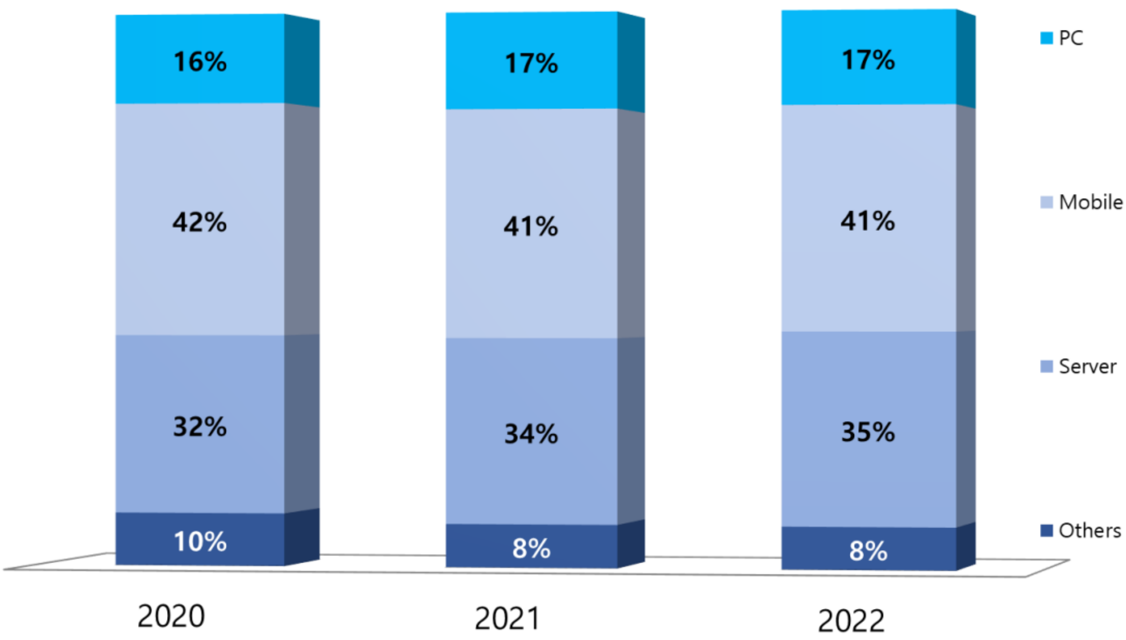
(A) Market supply and demand status and growth of DRAM in the future

a. Supply and demand status:

For the PC end, although the market of DRAM is weak, the mitigation of material excesses and shortages in the industrial chain and the shortened delivery of materials in shortage since Q4 2021 has slightly increased the purchase in the PC supply chain. Thanks to system suppliers' prospect of consistently high commercial and gaming demand, the inventory level of the standard PC DRAM gradually has fell below the safety stock level. However, there has been a significant decline in the demand for Chromebooks. It is expected that the percentage of PC applications in the DRAM supply in bits in 2022 will remain at the same level, namely about 17%.

As for servers, the impact of the pandemic driving the demand for data centers and remote working continues. Even though there is no significant rebound in the purchase by data center manufacturers, the mitigation of material excesses and shortages will help raise the demand in 2022. Widespread discussion of the metaverse and relevant issues will accelerate companies' investment. In 2022, server memories will become an important segment of DRAM applications, accounting for up to 35% of the overall supply in bits.

For mobile devices, the sales momentum of smartphones in 2021 did not grow as expected. In 2022, the growth rate of the mobile phone market is expected to have a single-digit increase, just like in 2021. Brand manufacturers are not in urgent need of purchasing materials. Due to the traditional regular low season in Q1 2022, the market may face a price drop. It is anticipated that mobile memory bit demand will enter its plateau period in 2022. LPDDR4 will remain the mainstream specification. However, due to its limited growth momentum, it will occupy about 41% of the overall DRAM demand. (See Fig. 20)



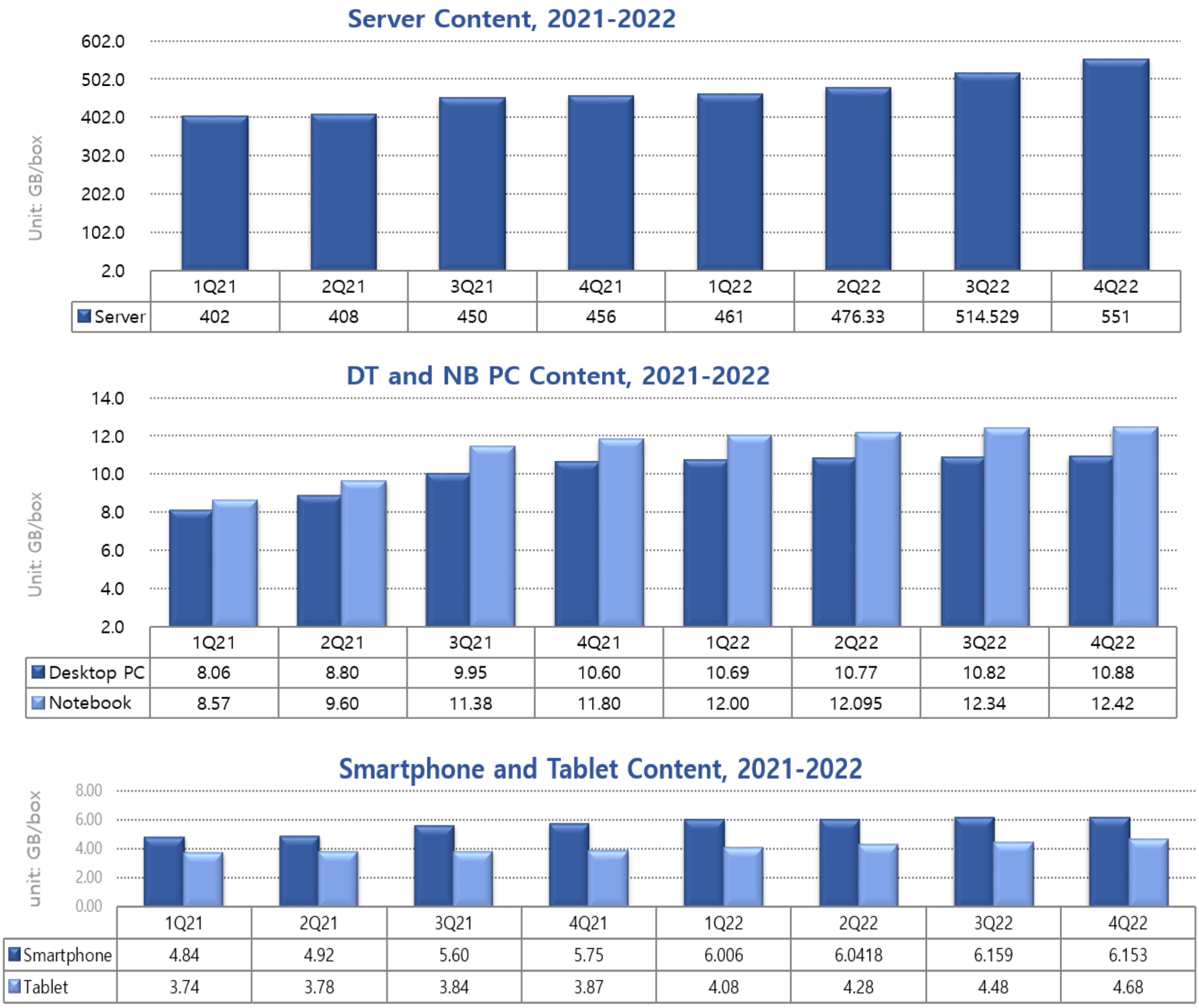
Source: inSpectrum, February 2022

Fig. 20 WW DRAM output comparison among 2020-2022

b. Growth potential of DRAM in the future

In terms of the application end, data centers are the one dominating the memory and storage market. They are estimated to further grow in the next 10 years. The main reason for that is the development of AI, 5G and electric vehicle applications. As shortages in the supply chain mitigate, 2022 will be the year when the demand for data centers will become the strongest. The realization of the metaverse emerging in 2021 requires virtual environments, high-speed network transmission, the storage capacity of application devices, and high-speed and complex cloud computing, all of which need DRAM and NAND Flash products. Thus, memories will be the key to construct and realize the metaverse in the future.

As for the capacity of memories, in order to handle a larger amount of data with higher complexity, a double-digit growth is expected for the server, desktop, notebook, smartphone and tablet areas in 2022. The estimated growth rates are 16.7%, 15%, 16.7%, 15.2% and 15% (see Fig. 21).



	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Server	402	408	450	456	461	476.33	514.529	551

	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Desktop PC	8.06	8.80	9.95	10.60	10.69	10.77	10.82	10.88
Notebook	8.57	9.60	11.38	11.80	12.00	12.095	12.34	12.42

	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Smartphone	4.84	4.92	5.60	5.75	6.006	6.0418	6.159	6.153
Tablet	3.74	3.78	3.84	3.87	4.08	4.28	4.48	4.68

Source: inSpectrum, February 2022

Fig. 21 Estimated capacity of DRAM by application

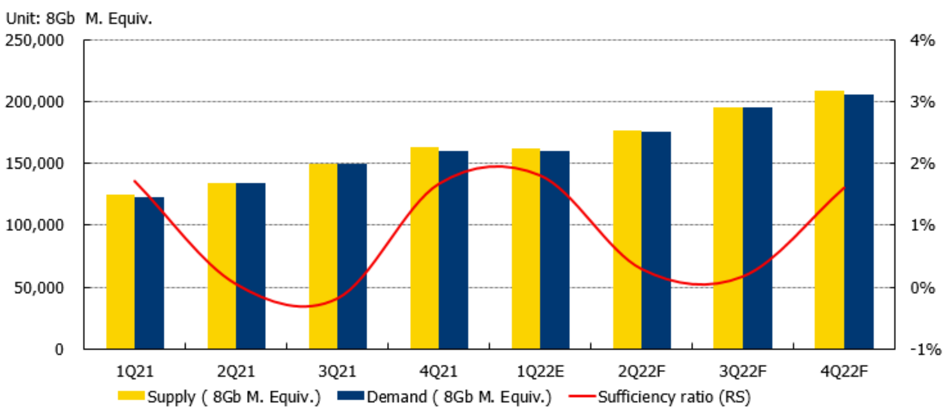
(B) Market supply and demand status and growth of NAND flash in the future

a. Supply and demand status:

In 2022, the growth momentum of NAND will come from the Enterprise SSD and Client SSD. The 3D NAND contamination accident at the Kioxia/WD plant is expected to cause the supply and demand of NAND to be barely balanced in the first 3 quarters. In Q4, the supply will exceed the demand (see Fig. 22). Although there are up to 7 NAND Flash manufacturers, it will be hard to avoid the circumstances where some products are of lower capacity or where products are in shortage because the manufacturers will prioritize the production of high-capacity, high-profit and high-value products due to the active demand for such products resulting from the non-stop introduction of new applications and the increasing capacity for smart applications. The facts that the delivery of substrates has been prolonged to 52 weeks and that the assembly and testing capacity is insufficient will also lead to such situations. In particular, the fact that the output proportion of the out-of-date SLC and MLC products are still declining quarter by quarter may lead to a short supply and arouse panic among customers if an unanticipated significant increase in demand occurs.

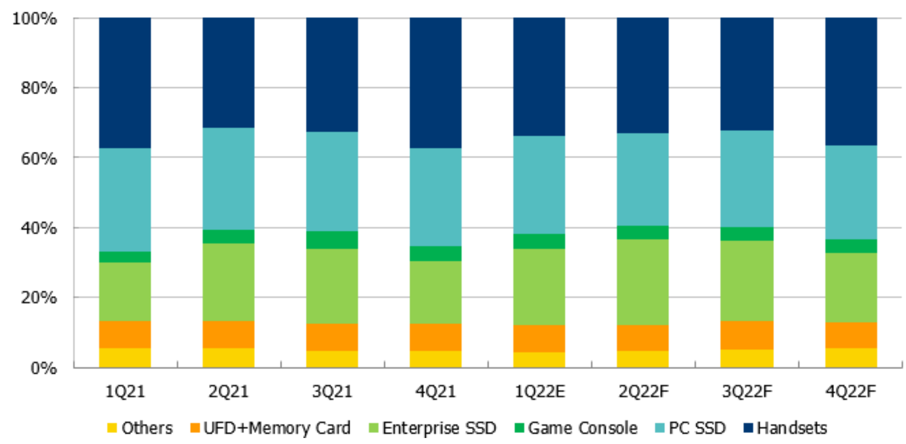
b. The growth potential for NAND FLASH application in the future

The growth of SSDs is highly expected in 2022 (see Fig. 23). Up to 92% of notebooks are equipped with an SSD, and thus an increase in the capacity is foreseeable. In addition, in response to the massive storage demand from data centers, NAND flash firms also strive to develop new technology and new production processes for NAND flash memory in order to increase the storage capacity per unit. As 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 2022

Fig. 22 2021–2022 NAND Flash sufficiency



Source: TrendForce Corp., February 2022

Fig. 23 2021–2022 NAND Flash demand analysis by application

As the volume of functional cell phones continues to decrease and many smartphone manufacturers introduce new 5G phones, the global smartphone shipment volume in 2022 is expected to be around 1.4 billion. In spite of an minor increase in the shipment volume, the capacity will be boosted dramatically. The demand for live streaming, video streaming, photographing and mobile games with the reduction of the average sales price (ASP) will increase the average NAND Flash carrying capacity of mobile phones in order to provide more convenient functions, such as more fluent video processing, to mobile phone users. 5G is one of the focuses in 2022. The penetration and differentiation of 5G smartphones will be speed up. The number of 5G smartphones is expected to hit about 800 million, with a penetration rate higher than 50%. OTT (over-the-top) products demonstrate their ongoing impact on traditional STB (set-top box) products. It is changing the TV viewing behavior of consumers in the USA. As for the leading OTT companies, the accumulated number of their customers occupies 50% of the total number of pay-TV customers. The number of customers of Netflix and Disney+, two leading companies in the OTT field, exceeds the total number of telecom, satellite, and cable TV customers. Online video and music streaming services have become a must-have entertainment for everyone. This trend is expected to continue and traditional STB manufacturers must adapt their product lines in the response to the trend. OTT clients can view streams using networking devices such as PCs, notebooks, tablets, smartphones, game consoles, and TVs, driving consumer demand for networking devices and bringing about more demands for cloud computing and storage resources. Many telecom operators have started to employ edge computing. They operate deeply in the hybrid cloud area by combining 5G and edge computing to provide innovative services on the basis of optimized network quality, security, and cost conditions, and these may encourage the establishment of small and medium regional data centers. According to the IDC"s latest "Worldwide Edge Spending Guide", the worldwide spending on edge computing is expected to reach USD 176 billion in 2022, growing by 14.8% in comparison with 2021. Due to the pandemic, to avoid infection and solve labor shortage problems, many chain stores, supermarkets, restaurants and retail stores have introduced more automated ordering and self-checkout systems. These unmanned machines may be used as a substitution for traditional cashiers and POS systems or work with them simultaneously. Smart self-checkout and computer vision supported self-checkout services will be a development trend in the future, and the demand for related storage solutions and cloud data will increase and never decrease. Smart manufacturing is an important part for the realization of smart factories. The factories adopt advanced processes, systems and modes with self-information awareness, self-decision-making, and self-execution functions to closely combine all the stages in the production of "smart machinery" with the Iot, cloud computing, big data, and AI. Therefore, higher storage capacity and better computing capability are required to facilitate smarter management in the factories. In order to replace the manufacturing management mode in traditional factories with the timely, quantitative and transparent management mode to help contribute to the digital transformation of the manufacturing industry, end-to-end data flows are integrated through networks to enable machine-to-machine and machine-to-human communications. Currently, smart medical applications are promoted quite actively. As the IoT technology advances and spreads quickly, a large amount of medical information are exchanged, analyzed and utilized as the basis of big medical data. Introducing IoT, cloud computing, big data and AI applications such as mobile health, health information technology, wearable devices, remote health and medical care, personal medical care and other smart medical technologies can accelerate the transformation of traditional medical systems, drive digitalization upgrading, and speed up the launch of smart care services and smart wards. The combination of technology and medical care is an inevitable future trend.

D. Competitive niches

(A) Robust technology and industrial experience to rapidly satisfy external demands

Having developed storage technology for a long time, acquired more than 200 patents and gained dozens of years of valuable experience in serving thousands of customers, Apacer is capable of rapidly responding to market trends and meeting customer requirements. We provide optimal products or technology solutions by integrating software, hardware and firmware, and continuously create value-added benefits for our partners. In recent years, we have extended our product lines to include the applications of cloud platforms, IIoT and intelligent IoT and developed applications with high value on an ongoing basis. In addition to smart care, smart environmental monitoring, optical inspection products and technologies, and other integrated solutions, we have been dedicated to developing new fields of cooperation. 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) Global channels with local marketing strategies to accumulate brand value

Having deployed a global channel network for more than 20 years, we have subsidiaries in the US, the Netherlands, China, Japan and India and markets our own brand “Apacer” around the world. Therefore, we are able to meet customers’ needs in a timely manner through our local bases. In addition to participating in important international exhibitions such as COMPUTEX, Embedded World, G2E and Smart City Summit & Expo for marketing, we take part in or organize forums, seminars and other events. Online communication tools, including websites, social media and streaming platforms, are also utilized to develop customers around the world. To seek opportunities for exposure of our brand, accumulation of brand value, and converting of these actions to the momentum for promoting business, Apacer actively participates in international awards including the Taiwan Excellence Awards and the evaluation for the Best Global Brands of Taiwan.

(C) Ongoing development of patented products to build a firewall of competitive strength

We formed a patent development committee in 2017 and set up a patent review team for the review of internal inventions and patents. We also established patent incentive regulations to encourage commercialization of patents. As of the end of 2021, we had 201 effective patents and 47 pending patents. The patents were mainly in Taiwan, the USA and China. More patents are being obtained.

(D) Quick response to the demand for highly customized products

Industrial customers require highly customized memory modules. Once they enter a supply chain, they will not change it easily. Thus, Apacer continues to adjust service processes, has professional service teams provide solutions, and unceasingly improves manufacturing processes from the front-end inventory management, production scheduling to shipment. Through the digital transformation of the business, we are able to get materials ready early, adjust the schedule and enhance production efficiency. Orders with small quantities are also accepted to establish long-term relationships with customers as much as possible.

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

Prices in the memory industry are easily affected by external fluctuations. Supply chain-related issues brought about by the pandemic and climate change in recent years have caused direct and indirect impacts on our business. Besides, as external investment trends driving requirements for a green supply chain emerge, how to stabilize the sources of raw materials, ensure legal compliance at the supply end, take action to support requirements for environmental friendliness, and provide customers with products of competitiveness 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 in conformity with international standards to ensure shipment quality

We have strict quality requirements. Apart from passing international quality management certifications, including ISO 9001, ISO 14001, OHSAS 45001 and IECQ QC 080000, we enhance our process management and replace equipment to meet the requirements of RoHS and other EU directives related to the environment. Our ultimate goal is zero-defect 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

We always stick to our core brand value of "good partnership", namely "Act on What We Say, Persist in Better Results, Develop Together with Partners". A corporate culture into which accountability and common good are built is established through internal announcements and encouragements in order to create an environment where our partners, customers and employees are mutually beneficial. To implement sound management practices and pursue long-term sustainable development, we set up the Sustainable Development Committee to focus on sustainability issues such as environmental friendliness, employee care, contribution to local communities, corporate governance, customers, and suppliers. By doing so, we have received positive appraisal 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. Complete service process and product quality

As a company established for more than 20 years, Apacer serves every customer in the spirit of "Access the Best" throughout the process from front-end ordering, shipment to after-sale services. In this way, we can remain competitive in the cutthroat memory module industry with our high-quality products with reasonable price. We continue investing in obtaining 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. In addition, new automatic production equipment and high-performance inspection equipment have been introduced. In the production process, we also strictly implement gateway inspections to properly control production quality and yield in order for our brand to remain competitive.

b. R&D and patent development capabilities

R&D is crucial for companies to build competitive strength. Therefore, investment in R&D talents, technologies and patents is a key business indicator. To be in line with forward-looking strategies, we hire talents and make product development plans in a proactive manner, and encourage the output of effective patents and their commercialization. We budget for R&D every year and set R&D goals in the hope to provide customers with products or technologies beyond their expectations and create market benefits for all the stakeholders.

c. Technology trends driving the demand for product upgrading

The development of new technologies and processes has become more stable in recent years. As the corresponding specifications are upgraded and the prices are adjusted, it will become more easy to integrate high-end products. A change in our life due to the pandemic has driven the acceptance of high-speed and durable cloud-based products designed for remote work and thereby created business opportunities.

d. Focusing on the main business and developing innovative businesses

While being devoted to the main business, we established the Emerging Application Division in response to the IoT trend to branch out into intelligent IoT and optical inspection applications. We currently focus on offering customized integrated intelligent IoT solutions in the hope to help small and medium-sized enterprises finish their intelligent IoT deployment. There have been successful cases in the smart care, smart factory and optical inspection areas. We will invest resources in development of the aforesaid applications and discovering potential business opportunities continuously.

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 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 modify the contents on our website and Youtube channel to be able to respond to customers’ needs at any time. A customer development list is also created based on the data, and good customer relations are maintained.

f. Sustainable partnership for mutual progress and benefits

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.

Owing to our strategic alliance with Phison Electronics through private placement in 2017, the competitive advantages and resources from both parties have become integrated. While making our product lines more complete, we also expanded our business to offer our customers diverse customized solutions. Currently, we focus on further developing customized industrial control SSD storage devices in the hope to expand our competitive advantages and drive the integration of our companies, and jointly expand cross-border niche markets, increase the competitiveness of both parties in the global market, and create a sustainable partnership for mutual progress and benefits.

(B) Unfavorable factors and countermeasures

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

Since 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 external factors, they are a important factor affecting profits. Our response measures are as follows:

(a) We will obtain timely market information through multiple channels, 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. The short life cycle of products causing the intense price competition

Due to short product life cycles, manufacturers accelerate their development and production cycles in response to market demand, which also causes intense price competition. 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 increased raw material prices. In response to that, 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. We also continuously develop products and services with high added value, gross profit and quality. With digital transformation, our plant production management, quality control and inventory level management are optimized to reduce manufacturing costs and allow our brands to be competitive internationally.

c. Exchange rate fluctuation risks

Owing to the high export dependence of our Company, exchange rate fluctuations have a certain impact on our profits. Therefore, we plan the following countermeasures:

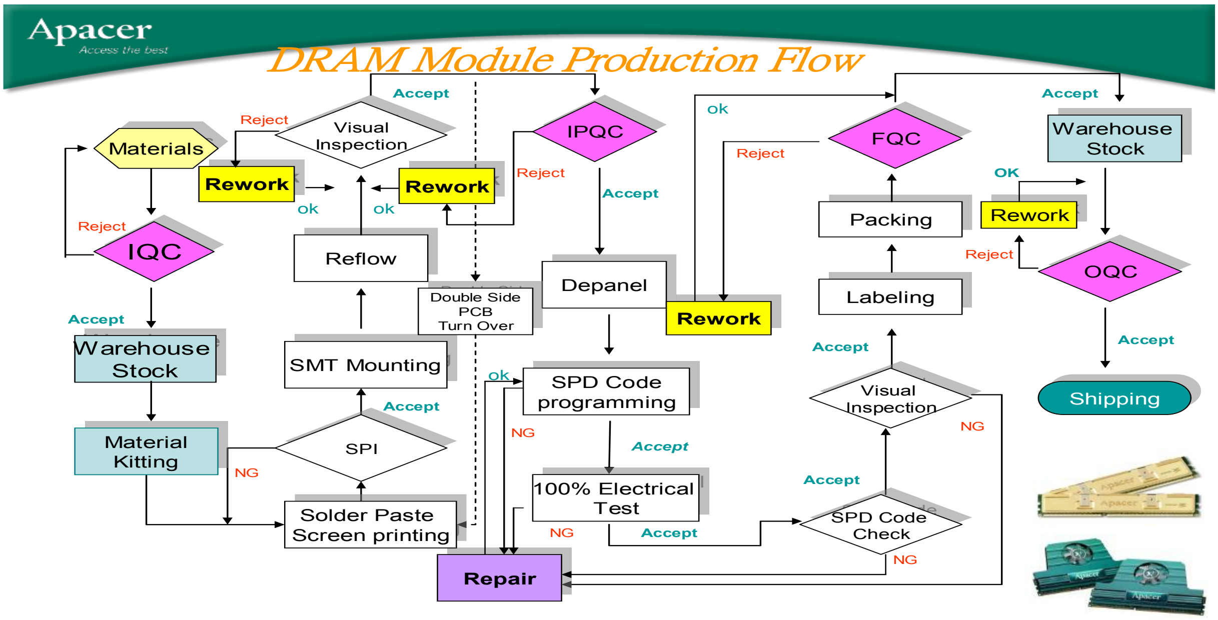
Our company keeps close and stable relationship with banks to effectively grasp the status of exchange rate fluctuations in time. We also assign personnel to collect exchange rate fluctuation information and prepare research report in order to control the timeliness of exchange rate fluctuation and adjust our foreign currency asset and liability positions. We also use financial instruments to effectively respond to impacts caused by exchange rate fluctuations.

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

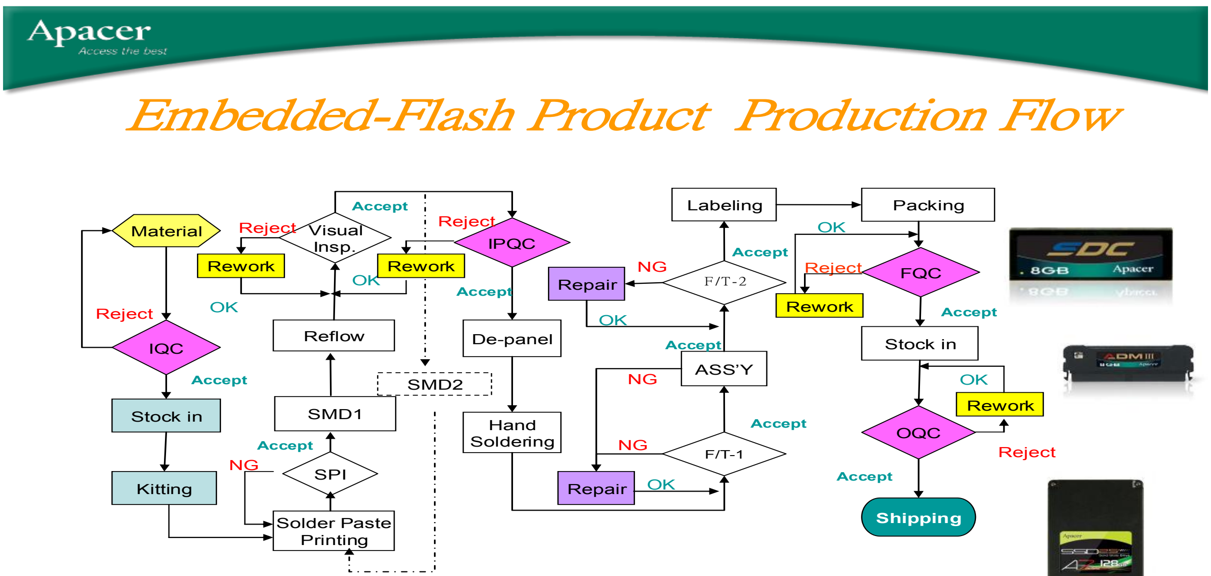
A. Important uses of the main products

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. (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



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



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

(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

2020				2021				2022, 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
B	1,081,670	19.20	None	A	1,620,535	20.98	None	A	439,436	19.73	None
A	822,233	14.60	None	B	1,154,468	14.95	None	B	428,848	19.26	None
C	719,696	12.78	None	C	953,415	12.34	None	C	351,968	15.81	None
Other	3,009,134	53.42		Other	3,995,131	51.73		Other	1,006,515	45.20	
Net procurement amount	**5,632,733**	**100.00**		**Net procurement amount**	**7,723,549**	**100.00**		**Net procurement amount**	**2,226,767**	**100.00**	

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	2020			2021		
	Production capacity	**Production volume**	**Production value**	**Production capacity**	**Production volume**	**Production value**
Memory module	(Note 1)	3,567	2,380,414	(Note 3)	8,225	3,281,726
Flash memory	(Note 2)	6,666	1,942,600	(Note 4)	8,372	2,406,990
Total	**4,340**	**10,233**	**4,232,014**	**3,509**	**16,597**	**5,688,716**

Note 1: Nearly 43% was outsourced.
Note 2: Nearly 74% was outsourced.
Note 3: Nearly 77% was outsourced.
Note 4: Nearly 81% was outsourced.

(6) Sales value over the last two years

Unit: 1,000 pieces; TWD 1,000

Year / Sales value / Major products	2020				2021			
	Domestic sales		**International sales**		**Domestic sales**		**International sales**	
	Amount	**Value**	**Amount**	**Value**	**Amount**	**Value**	**Amount**	**Value**
Flash memory	2,715	547,370	9,982	3,606,555	2,397	562,735	15,027	4,024,311
Memory module	2,248	788,202	8,115	2,202,652	2,404	1,188,255	9,560	2,885,140
Other	185	2,659	1	4,784	221	21,395	0	557
Total	**5,148**	**1,338,231**	**18,098**	**5,813,991**	**5,022**	**1,772,385**	**24,587**	**6,910,008**

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 2021, the total number of training hours for personnel was 7,616 hours.

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

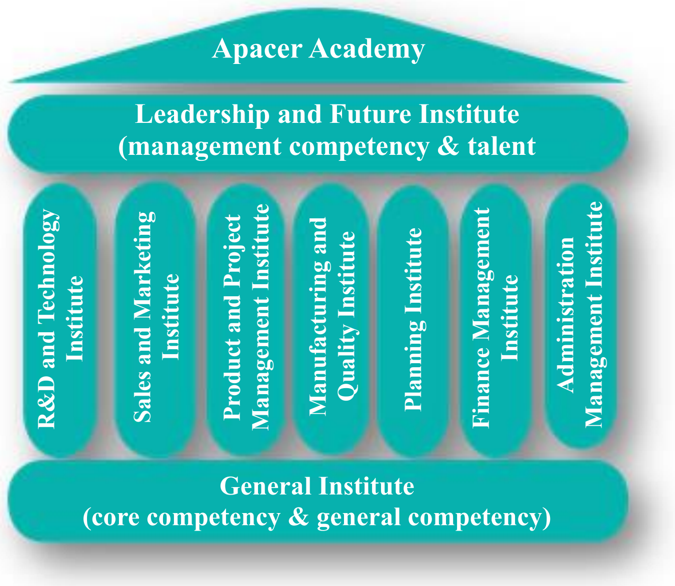
Year		2020	2021	2022, as of March 31
Number of employees	Direct personnel	146	150	148
	Indirect personnel	325	324	322
	Total	471	474	470
Average age		39.1	39.6	39.8
Average years with our company		7.4	7.6	7.8
Distribution of degrees	Doctoral degree	1	1	1
	Master's degree	99	98	94
	(Associate's) Bachelor’s degree	291	299	302
	Senior high school	75	70	69
	Below senior high school	5	6	4

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

(3) Training structure and efficacy

A. Training structure

The Company uses an educational training blueprint for the training structure. After the establishment of the Apacer Academy, 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 meeting the competency and learning requirements 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.

New staff training	• The training focuses on the Company's business direction, development vision, environmental policy, management system, corporate rules, and operational processes of the relevant systems, and it allows new employees to identify with the core values of the Company
General training	• The Company arranges general and professional training courses for employees. The general training covers problem analysis and solving and presentational communication skills. We also organize labor safety and health training and fire safety training in accordance with laws
Talent training (including management training)	• We identify employees with potential and provide current/new managers with talent/management training. Our management team is assigned to give lectures that combine a core of competency with actual and future development needs to perform project management and plan and improve work flows
External training	• External professional training is arranged for our employees in order to meet the requirements related to strategic development, competency, KPI, and laws and regulations
Training on RBA and ethical management	• On the basis of RBA and ethical management regulations, the Company has established an RBA and ethical management system for current employees
CSR training	• We conduct CSR awareness training for employees to jointly discuss the importance of CSR and propose CSR projects

C. Training efficacy

Due to the attack of COVID-19 all over the world, physical courses were provided along with online courses or in small groups. The total number of training participants, hours and costs dropped slightly in comparison with the previous year.

The 2021 training results are as follows:

Course type	Number of participants	Number of hours	Total cost (TWD)
Induction training (including occupational safety and health)	227	620	1,001,350
General training(including law training)	2,023	4,775	
Talent training (including management training)	441	1,364	
External training	56	315	
RBA & ethical management training (including occupational safety and health)	453	453	
CSR/ESG training	44	88	
Total	3,244	7,616	

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

In 2021, 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 453 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.

In 2021, our total greenhouse gas emissions were 2,764.281 metric tons of CO2-e/year. This was a increase of 662.7360 metric tons of CO2-e/year when compared to 2020. The increase resulted from the replacement of all old water chillers with 2 “water-cooled chillers” with lower power consumption in the hope of reducing greenhouse gas emissions in 2021. However, as no equipment was installed in the plant to directly monitor greenhouse gas emissions, the emissions generated by such machines could not be directly calculated. They could only be calculated based on the “amount of refrigerant added” in the inventory. This method is used when it is difficult to calculate due to a lack of gas monitoring equipment. In the method, the actual amount of refrigerant added is used to calculate the possible resulting greenhouse gas emissions. As the newly installed “water-cooled chillers” were large-tonnage units, they used 520 kg of refrigerant, leading to a significant increase in Scope 1 emissions.

However, in fact, from the analysis of the total purchased electricity, we could know that the replacement helped substantially reduce electricity consumptions and contributed to greenhouse gas reductions. According to the data of 2021, our operating revenue increased (by TWD 1,530 million in comparison with 2020), and the total amount of purchased electricity did not increase, but was reduced by about 351,248.71 kWh. This demonstrated that the replacement did help reduce Scope 2 emissions and thereby led to a decline in greenhouse gas emissions.

Year	2020	2021
Direct greenhouse gas emissions	9.054 metric tons CO2-e/year	681.387 metric tons CO2-e/year
Indirect greenhouse gas emissions	2,092.491 metric tons CO2-e/year	2,082.893 metric tons CO2-e/year
Total greenhouse gas emissions	2,101.545 metric tons CO2-e/year	2,764.281 metric tons CO2-e/year

(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

In response to the European Union's RoHS Directive, REACH, and customer requirements, we have made all processes lead-free as of 2007, and since 2011 have gradually made them halogen-free in line with the environmental trend of green products. The RoHS Directive has been fully incorporated into our production processes and material management, which comply with the EU's REACH regulation. We also use these regulations in our audits of component suppliers whom we require to provide us with their environmental protection commitments and RoHS test reports. In July 2007, we passed the IECQ QC080000 management system audit carried out by a third-party certification company. Under this system, we completely control the management of prohibited hazardous substances from product to manufacturing process.

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 2021, we introduced the RMI_CMRT for Ta, Sn, Au and W and RMI_CRT which are required for suppliers on our green supplier platform for responsible minerals sourcing.

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

In response to the European Union's RoHS Directive, we will implement the extended directive (EU)/2015/863 to add four plasticizer hazardous substances (BBP/DBP/DEHP/DIBP) in July 22, 2019. We have introduced it into the supplier management two years earlier in July 1, 2018, ahead of all industry peers. We also required our suppliers to provide qualified test reports of a third-party laboratory to show compliance with the latest RoHS standards. We provide products and services free from hazardous substance for the customers and the consumers.

(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	2020	2021
Industrial waste	24.821 tons	14.7295 tons
Recyclable waste	18.8839 tons	19.7446 tons
Total	43.7049 tons	34.4741 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. To save energy and reduce carbon and power consumption, we replaced all the air-cooled air conditioners in our headquarters with water-cooled units in 2021, leading to more water consumption by the cooling tower and thereby causing the total water consumption to increase in comparison with 2020. To prevent the waste of water resources, all the faucets of our washbasins have been mounted with water-saving devices to reduce the use of domestic water. We have also put up posters promoting water saving. We have designated personnel responsible for inspecting the water equipment, and any failure discovered will be timely fixed to save water and avoid waste.

Year	2020	2021
Water consumption	5,795 kiloliters	9,177 kiloliters

5. Cyber security management

(1) Cyber security policy

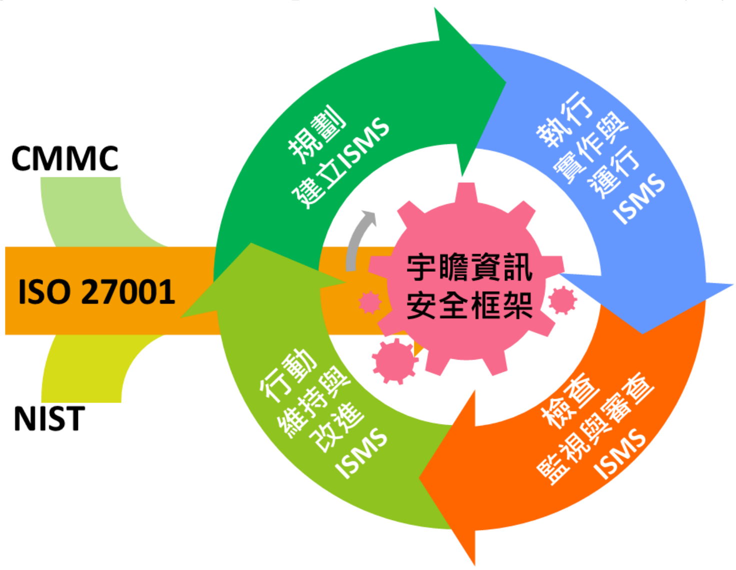
The Company released an information security policy applicable to the employees and suppliers of the Company in 2019 to protect the information assets by ensuring their confidentiality, availability and integrity and to boost the confidence of customers in the Company's information security. The information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

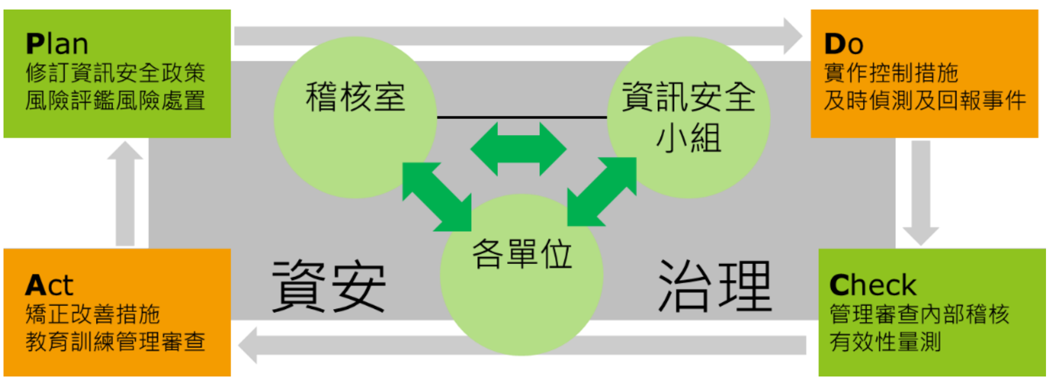
(B) Doing phase: Defense-in-depth strategies including physical security implementation, system/device security implementation, account and permission management, information security monitoring and maintenance

(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: 5 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: 12/16/2021, 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

Apacer has introduced the “A+ EAPs Employee Assistance Program”, which won the 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 installation contract	AUO Envirotech Inc.	2020/11/12~2022/08/31	Installation and licensing of warehouse management system	None
Software license contract	Omni System Integration, Inc.	2020/03/09~2022/03/31	Procurement and licensing of software	None
Insurance contract	Fubon Property and Casualty Insurance Co., Ltd.	2021/07/01/-2022/07/01	Commercial fire insurance	None
Insurance contract	South China Insurance Co., Ltd.	2022/01/01/-2022/12/31	Cargo insurance	None
Insurance contract	Hotai Insurance Co., Ltd.	2022/01/01-2022/12/31	Product liability insurance and public accident liability insurance	None
Insurance contract	Fubon Property and Casualty Insurance Co., Ltd.	2022/01/01-2022/12/31	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)					Financial information of 2022, as of March 31 (Note 1)
		2017	2018	2019	2020	2021 (Note 2)	
Current assets		3,589,477	3,175,676	3,158,606	2,959,170	3,765,156	4,157,582
Long-term investments		19,197	45,821	41,944	37,761	27,420	27,243
Property, plant and equipment		899,387	887,458	876,060	871,958	861,356	855,142
Right-of-use assets.		-	-	35,110	28,684	32,455	30,092
Intangible assets		24,363	66,280	62,278	53,225	43,147	40,872
Other assets		100,381	100,284	103,146	100,301	148,534	149,758
Total assets		4,632,805	4,275,519	4,277,194	4,051,099	4,878,068	5,260,689
Current liabilities	Before allocation	2,010,340	1,538,233	1,421,922	1,191,101	1,713,603	2,226,320
	After allocation	2,272,674	1,790,478	1,679,211	1,396,786	2,007,875	2,226,320
Non-current liabilities		54,325	41,830	48,876	50,316	72,595	63,659
Total liabilities	Before allocation	2,064,665	1,580,063	1,470,798	1,241,417	1,786,198	2,289,979
	After allocation	2,326,999	1,832,308	1,728,087	1,447,102	2,080,470	2,289,979
Equity attributed to stockholders of the company							
Share capital		1,008,978	1,008,978	1,008,978	1,008,978	1,018,243	1,018,243
Capital reserve		358,225	359,910	359,910	361,519	389,146	389,146
Retained earnings	Before allocation	1,250,073	1,393,935	1,515,937	1,548,000	1,819,067	1,683,484
	After allocation	987,739	1,141,690	1,258,648	1,342,315	1,524,795	1,683,484
Other equities		(49,321)	(67,540)	(78,579)	(108,958)	(134,722)	(120,302)
Treasury shares		-	-	-	-	-	-
Total equity of stockholders of the parent company	Before allocation	2,567,955	2,695,283	2,806,246	2,809,539	3,091,734	2,970,571
	After allocation	2,305,621	2,443,038	2,548,957	2,603,854	2,797,462	2,970,571
Non-controlling interests		185	173	150	143	136	139
Total equity	Before allocation	2,568,140	2,695,456	2,806,396	2,809,682	3,091,870	2,970,710
	After allocation	2,305,806	2,443,211	2,549,107	2,603,997	2,797,598	2,970,710

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

Note 2: The amounts after allocation are according to the proposal for distribution of dividends by cash, which was approved by the Board of Directors on February 23, 2022.

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

Unit: TWD 1,000

Item \ Year	Financial analysis of the last five years (Note 1)					Financial information of 2022, as of March 31 (Note 1)
	2017	2018	2019	2020	2021	
Operating revenue	10,043,476	9,441,618	7,485,821	7,152,222	8,682,393	2,303,460
Gross operating profit	1,298,790	1,309,289	1,400,243	1,125,902	1,452,884	478,271
Operating income	474,842	437,883	483,595	345,419	573,060	202,739
Non-operating income and expenses	(1,802)	623	(4,695)	25,250	4,213	(3,858)
Net profit before tax	473,040	438,506	478,900	370,669	577,273	198,881
Net profit of continuing operations for the period	404,957	358,830	376,629	290,460	485,781	158,687
Losses from suspended operations	-	-	-	-	-	-
Net profit for the current period	404,957	358,830	376,629	290,460	485,781	158,687
Other comprehensive income for the period (net income after taxes)	(18,169)	16,826	(12,883)	(31,494)	(25,859)	12,190
Total consolidated income for the current period	386,788	375,656	363,746	258,966	459,922	170,877
Net profit for the period attributed to owners of the parent	405,418	358,839	376,642	290,469	485,788	158,689
Net profit for the period attributed to non-controlling interests	(461)	(9)	(13)	(9)	(7)	(2)
Total comprehensive income attributed to owners of the parent	386,996	375,668	363,769	258,973	459,929	170,874
Total comprehensive income attributed to non-controlling interests	(208)	(12)	(23)	(7)	(7)	3
Earnings per share (TWD)	4.02	3.56	3.73	2.88	4.81	1.57

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

(2) Condensed 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)				
		2017	2018	2019	2020	2021 (Note 2)
Current assets		3,260,681	2,843,922	2,821,478	2,590,942	3,361,666
Long-term investments		280,722	342,034	356,840	385,715	398,202
Real estate, plant and equipment		896,601	883,660	872,214	868,620	858,517
Right-of-use assets.		-	-	14,012	14,889	26,490
Intangible assets		24,158	66,024	62,130	53,099	43,043
Other assets		92,825	92,823	89,473	91,362	140,922
Total assets		4,554,987	4,228,463	4,216,147	4,004,627	4,828,840
Current liabilities	Before allocation	1,962,467	1,506,707	1,369,607	1,156,402	1,678,356
	After allocation	2,224,801	1,758,952	1,626,896	1,362,087	1,972,628
Non-current liabilities		24,565	26,473	40,294	38,686	58,750
Total liabilities	Before allocation	1,987,032	1,533,180	1,409,901	1,195,088	1,737,106
	After allocation	2,249,366	1,785,425	1,667,190	1,400,773	2,031,378
Share capital		1,008,978	1,008,978	1,008,978	1,008,978	1,018,243
Capital reserve		358,225	359,910	359,910	361,519	389,146
Retained earnings	Before allocation	1,250,073	1,393,935	1,515,937	1,548,000	1,819,067
	After allocation	987,739	1,141,690	1,258,648	1,342,315	1,524,795
Other equities		(49,321)	(67,540)	(78,579)	(108,958)	(134,722)
Treasury shares		-	-	-	-	-
Total equity of stockholders of the parent company	Before allocation	2,567,955	2,695,283	2,806,246	2,809,539	3,091,734
	After allocation	2,305,621	2,443,038	2,548,957	2,603,854	2,797,462
Non-controlling interests		-	-	-	-	-
Total equity	Before allocation	2,567,955	2,695,283	2,806,246	2,809,539	3,091,734
	After allocation	2,305,621	2,443,038	2,548,957	2,603,854	2,797,462

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

Note 2: The amounts after allocation are according to the proposal for distribution of dividends by cash, which was approved by the Board of Directors on February 23, 2022.

B. **Condensed consolidated income statement (individual financial statement)**

Unit: TWD 1,000

Item \ Year	Financial information of the last five years (Note 1)				
	2017	**2018**	**2019**	**2020**	**2021**
Operating revenue	9,844,821	9,064,195	7,151,398	6,890,658	8,422,696
Gross operating profit	1,028,072	1,062,262	1,105,823	897,595	1,215,209
Operating income	425,915	416,470	440,924	306,112	531,032
Non-operating income and expenses	31,430	22,044	25,733	54,212	35,543
Net profit before tax	457,345	438,514	466,657	360,324	566,575
Net profit of continuing operations for the period	405,418	358,839	376,642	290,469	485,788
Losses from suspended operations	-	-	-	-	-
Net profit for the current period	405,418	358,839	376,642	290,469	485,788
Other comprehensive income for the period (net income after taxes)	(18,422)	16,829	(12,873)	(31,496)	(25,859)
Total consolidated income for the current period	386,996	375,668	363,769	258,973	459,929
Earnings per share (TWD)	4.02	3.56	3.73	2.88	4.81

Note 1: The financial information in the above table has been examined/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
2017	Philip Tang, Grace Chen	Unqualified opinion
2018	Philip Tang, Grace Chen	Unqualified opinion
2019	Philip Tang, Grace Chen	Unqualified opinion
2020	Philip Tang, Grace Chen	Unqualified opinion
2021	Philip Tang, Steven Shih	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 2022, as of March 31 (Note 1)
		2017	2018	2019	2020	2021	
Financial structure	Debt to assets ratio (%)	44.57	36.96	34.39	30.64	36.61	43.53
	Long-term capital to real estate, plant and equipment ratio Plant, and equipment ratio (%)	291.58	308.44	325.92	328.00	367.38	354.84
Repayment ability	Current ratio (%)	178.55	206.45	222.14	248.44	219.72	186.75
	Quick ratio (%)	97.80	127.48	154.75	180.22	131.47	95.94
	Interest protection ratio	46.61	58.28	95.16	124.39	169.89	232.26
Operational capacity	Receivables turnover ratio (times)	8.80	7.65	7.20	8.25	8.01	6.83
	Average collection turnover	41	48	51	44	46	53
	Inventory turnover rate (times)	6.05	5.81	5.72	6.95	6.32	4.25
	Payable turnover (times)	9.00	7.95	6.48	7.36	9.14	7.70
	Average inventory turnover rate	60	63	64	53	58	86
	Real estate, plant and equipment Turnover rate (times)	11.14	10.57	8.49	8.18	10.01	10.74
	Total asset turnover rate (times)	2.37	2.12	1.75	1.72	1.94	1.82
Profitability	Return on assets (%)	9.76	8.19	8.9	7.03	10.94	3.14
	Return on equity (%)	16.21	13.63	13.69	10.34	16.46	5.23
	Ratio of net profit before tax to paid-in capital Ratio (%)	46.88	43.46	47.46	36.74	56.69	19.53
	Net profit margin (%)	4.03	3.80	5.03	4.06	5.59	6.89
	Earnings per share (TWD)	4.02	3.56	3.73	2.88	4.81	1.57
Cash flow	Cash flow ratio (%)	1.95	53.94	63.33	28.31	(18.75)	(11.55)
	Cash flow adequacy ratio (%)	44.84	69.54	98.58	94.42	72.91	66.46
	Cash reinvestment ratio (%)	(7.23)	19.53	21.42	2.60	(15.57)	(7.88)
Leverage	Operational leverage	1.97	2.13	2.36	2.84	2.09	1.74
	Financial leverage	1.02	1.02	1.01	1.01	1.01	1.00

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

1. Repayment ability:
   The “quick ratio” decreased due to an increase in accounts payable resulting from a rise in the inventory because of the growth of the business.
   The increase in the “interest protection ratio” resulted from a significant rise in the net profit before tax.
2. Operational capacity:
   The “payable turnover” increased as a result of the growth of the business with a concurrent increase in the cost of goods sold.
   The increase in the “turnover of real estate, plant and equipment” was due to a significant rise in the sales revenue because of the growth of the business.
3. Profitability:
   The “return on assets”, “return on equity”, “ratio of net profit before tax to paid-in capital”, “net profit margin” and “earnings per share” increased as result of a rise in profits due to the growth of the global market demand and price.
4. Cash flow:
   The decrease in the “cash flow ratio”, “cash flow adequacy ratio” and “cash reinvestment ratio” was due to an increase in inventory purchases for business growth, which led to a drop in cash flow from operating activities.
5. Leverage:
   The “operational leverage” decreased due to an increase in operating income.

Note 1: The financial information in the above table has been examined/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 real estate, 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 real estate, plant and equipment = Net sales / Average net value of real estate, 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	Year	Financial analysis of the last five years (Note 1)				
		2017	2018	2019	2020	2021
Financial structure	Debt to assets ratio (%)	43.62	36.26	33.44	29.84	35.97
	Long-term capital to real estate, plant and equipment ratio Plant, and equipment ratio (%)	289.15	308.01	326.36	327.90	366.97
Repayment ability	Current ratio (%)	166.15	188.75	206.01	224.05	200.30
	Quick ratio (%)	92.04	113.02	138.63	156.31	112.81
	Interest protection ratio	45.12	58.32	102.45	135.50	178.72
Operational capacity	Receivables turnover ratio (times)	8.87	7.56	7.40	8.23	8.03
	Average collection turnover	41	48	49	44	45
	Inventory turnover rate (times)	6.52	6.22	5.91	7.11	6.48
	Payable turnover (times)	9.08	7.85	6.44	7.36	9.15
	Average inventory turnover rate	56	59	62	51	56
	Real estate, plant and equipment Turnover rate (times)	10.96	10.18	8.15	7.92	9.75
	Total asset turnover rate (times)	2.37	2.06	1.69	1.68	1.91
Profitability	Return on assets (%)	9.95	8.31	9.01	7.12	11.06
	Return on equity (%)	16.24	13.64	13.69	10.34	16.46
	Ratio of net profit before tax to paid-in capital Ratio (%)	45.33	43.46	46.25	35.71	55.64
	Net profit margin (%)	4.12	3.96	5.27	4.22	5.77
	Earnings per share (TWD)	4.02	3.56	3.73	2.88	4.81
Cash flow	Cash flow ratio (%)	0.46	59.09	53.18	24.52	(20.74)
	Cash flow adequacy ratio (%)	49.30	80.49	100.63	91.17	67.97
	Cash reinvestment ratio (%)	(8.42)	21.81	15.72	0.86	(16.46)
Leverage	Operational leverage	2.09	2.20	2.19	2.68	1.97
	Financial leverage	1.02	1.02	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 increase in the “debt-to-assets ratio” was due to an increase in short-term loans and accounts payable arising from the demand for purchases in response to the growth of the business.
2. Repayment ability:
   The “quick ratio” decreased due to an increase in accounts payable resulting from a rise in the inventory because of the growth of the business.
   The increase in the “interest protection ratio” resulted from a significant rise in the net profit before tax.
3. Operational capacity:
   The “payable turnover” increased as a result of the growth of the business with a concurrent increase in the cost of goods sold.
   The increase in the “turnover of real estate, plant and equipment” was due to a significant rise in the sales revenue because of the growth of the business.

4. Profitability:
The "return on assets", "return on equity", "ratio of net profit before tax to paid-in capital", "net profit margin" and "earnings per share" increased as result of a rise in profits due to the growth of the global market demand and price.
5. Cash flow:
The decrease in the "cash flow ratio", "cash flow adequacy ratio" and "cash reinvestment ratio" was due to an increase in inventory purchases for business growth, which led to a drop in cash flow from operating activities.
6. Leverage:
The "operational leverage" decreased due to an increase in operating income.

Note 1: The financial information in the above table has been examined/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 real estate, 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 real estate, plant and equipment = Net sales / Average net value of real estate, 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 Committee's review reportof 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 2021. An audit report for the financial statements was prepared jointly by Philip Tang and Steven Shih, 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

2022 Shareholders' Meeting of Apacer Technology Inc.

Audit Committee Convener: Max Wu 吳廣義

February 23, 2022

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, 2021 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 23, 2022

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, 2021 and 2020, 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, 2021 and 2020, 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 guidence 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 Certification of Financial Statements by Certified Public Accountants and the auditing standards generally accepted in 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 Certified Public Accountants Code of Professional Ethics in Republic of China (the "Code"), and we have fulfilled our other ethical responsibilities in accordance with the Code. 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, 2021 are stated as follows:

1. Revenue recognition

   Please refer to notes 4(o) and 6(r) for the accounting policy on "Revenue recognition" and "Revenue from contracts with customers" for the related disclosures, respectively, of the notes to consolidated financial statements.

Description of key audit matter:

The Group engages primarily in the manufacturing and sales of memory modules and flash memory products, with product diversification and marketing channels spread globally. The Group recognizes its revenue depending on the various trade terms in each individual sale transaction and the transfer of control of the goods, which are considered to be complex in determining the timing of revenue recognition. Consequently, the revenue recognition 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 understanding and testing the design and operating effectiveness of the Group's internal controls over revenue recognition; assessing whether the accounting policy of the timing of revenue recognition is appropriate through understanding the main types of revenues of the Group, and reviewing the sales contracts and the related trade terms with customers; assessing whether the accounting treatment of revenue recognition is appropriate through performing a sample test of the original documents of sales transaction; performing a sample test of sales transactions that took place before and after the balance sheet date, and reviewing the related documents to understand and analyze the reason for any identified sales returns and allowances that took place after the balance sheet date, to assess whether the revenue is recognized within the proper period.

2. Valuation of inventories

Please refer to notes 4(h), 5 and 6(e) for the inventory accounting policy, "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 understand the reasonableness of estimations of allowance for inventory valuation loss with reference to actual write-off of inventories in a subsequent period, and evaluating the reasonableness of the accounting policy of valuation of inventories; as well as performing a sample test of the estimated selling price provided by Management to assess the reasonableness of the net realizable value and allowance for inventory valuation loss.

Other Matter

Apacer Technology Inc. has additionally prepared its parent-company-only financial statements as of and for the years ended December 31, 2021 and 2020, 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 auditing standards generally accepted in 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 auditing standards generally accepted in the Republic of China, we exercised professional judgment and maintained 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, 2021 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 23, 2022

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, 2021 and 2020

(Expressed in Thousands of New Taiwan Dollars)

	Assets	December 31, 2021 Amount	%	December 31, 2020 Amount	%
	Current assets:				
1100	Cash and cash equivalents (note 6(a))	$ 650,064	13	617,616	15
1110	Financial assets at fair value through profit or loss－current (note 6(b))	110,748	2	49,354	1
1170	Notes and accounts receivable, net (notes 6(d) and (r))	1,335,198	27	828,611	20
1180	Accounts receivable from related parties (notes 6(d), (r) and 7)	2,420	-	799	-
1310	Inventories (note 6(e))	1,486,513	31	797,769	20
1476	Other financial assets－current (note 6(a))	100,440	2	609,619	15
1479	Other current assets	79,773	2	55,402	2
	Total current assets	3,765,156	77	2,959,170	73
	Non-current assets:				
1517	Financial assets at fair value through other comprehensive income －non-current (note 6(c))	26,056	-	36,421	1
1550	Investments accounted for using equity method (note 6(f))	1,364	-	1,340	-
1600	Property, plant and equipment (note 6(g))	861,356	18	871,958	22
1755	Right-of-use assets (note 6(h))	32,455	1	28,684	1
1780	Intangible assets (note 6(i))	43,147	1	53,225	1
1840	Deferred income tax assets (note 6(n))	141,344	3	93,731	2
1980	Other financial assets－non-current	5,339	-	6,048	-
1990	Other non-current assets	1,851	-	522	-
	Total non-current assets	1,112,912	23	1,091,929	27
	Total assets	$ 4,878,068	100	4,051,099	100

	Liabilities and Equity	December 31, 2021 Amount	%	December 31, 2020 Amount	%
	Current liabilities:				
2100	Short-term borrowings (note 6(j))	$ 251,979	5	98,350	3
2120	Financial liabilities at fair value through profit or loss－current (note 6(b))	133	-	168	-
2170	Notes and accounts payable	668,123	14	467,027	12
2180	Accounts payable to related parties (note 7)	202,608	4	243,948	6
2200	Other payables (notes 6(s) and 7)	384,135	8	244,864	6
2230	Current income tax liabilities	115,274	2	75,102	2
2250	Provisions－current (note 6(l))	10,224	-	7,344	-
2280	Lease liabilities－current (note 6(k))	14,848	1	13,659	-
2300	Other current liabilities (note 6(r))	66,279	1	40,639	1
	Total current liabilities	1,713,603	35	1,191,101	30
	Non-current liabilities:				
2570	Deferred income tax liabilities (note 6(n))	123	-	-	-
2580	Lease liabilities－non-current (note 6(k))	18,086	1	15,440	-
2640	Net defined benefit liabilities (note 6(m))	40,541	1	29,256	1
2645	Guarantee deposits	13,845	-	5,620	-
	Total non-current liabilities	72,595	2	50,316	1
	Total liabilities	1,786,198	37	1,241,417	31
	Equity attributable to shareholders of the Company (note 6(o)):				
3100	Common stock	1,018,243	21	1,008,978	25
3200	Capital surplus	389,146	8	361,519	9
3300	Retained earnings	1,819,067	37	1,548,000	38
3400	Other equity	(134,722)	(3)	(108,958)	(3)
	Total equity attributable to shareholders of the Company	3,091,734	63	2,809,539	69
36XX	Non-controlling interests	136	-	143	-
	Total equity	3,091,870	63	2,809,682	69
	Total liabilities and equity	$ 4,878,068	100	4,051,099	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, 2021 and 2020

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

		2021		2020	
		Amount	%	Amount	%
4000	**Revenue (notes 6(r), 7 and 14)**	$ 8,682,393	100	7,152,222	100
5000	**Cost of revenue (notes 6(e), (g), (i), (k), (l), (m), (p), 7 and 12)**	(7,229,509)	(83)	(6,026,320)	(84)
5900	**Gross profit**	1,452,884	17	1,125,902	16
6000	**Operating expenses (notes 6(d), (g), (h), (i), (k), (m), (p), (s), 7 and 12):**				
6100	Selling expenses	(511,040)	(6)	(472,471)	(7)
6200	Administrative expenses	(232,902)	(2)	(182,364)	(2)
6300	Research and development expenses	(138,947)	(2)	(122,801)	(2)
6450	Reversal of (recognized) expected credit losses	3,065	-	(2,847)	-
6000	**Total operating expenses**	(879,824)	(10)	(780,483)	(11)
6900	**Operating income**	573,060	7	345,419	5
7000	**Non-operating income and loss (notes 6(f), (g), (k) and (t)):**				
7100	Interest income	2,067	-	4,740	-
7020	Other gains and losses－net	6,668	-	23,783	-
7050	Finance costs	(3,418)	-	(3,004)	-
7770	Share of losses of associates	(1,104)	-	(269)	-
	Total non-operating income and loss	4,213	-	25,250	-
7900	**Income before income tax**	577,273	7	370,669	5
7950	**Less: income tax expenses (note 6(n))**	(91,492)	(1)	(80,209)	(1)
	Net income	485,781	6	290,460	4
	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	(11,295)	(1)	(1,397)	-
8316	Unrealized losses from investments in equity instruments measured at fair value through other comprehensive income	(10,365)	-	(11,629)	-
8349	Less: income tax related to items that will not be reclassified subsequently to profit or loss	2,259	-	280	-
		(19,401)	(1)	(12,746)	-
8360	**Items that may be reclassified subsequently to profit or loss:**				
8361	Exchange differences on translation of foreign operations	(6,458)	-	(18,748)	-
8399	Less: income tax related to items that may be reclassified subsequently to profit or loss	-	-	-	-
		(6,458)	-	(18,748)	-
	Other comprehensive income for the year, net of income tax	(25,859)	(1)	(31,494)	-
8500	**Total comprehensive income for the year**	**$ 459,922**	**5**	**258,966**	**4**
8600	**Net income attributable to:**				
8610	Shareholders of the Company	$ 485,788	6	290,469	4
8620	Non-controlling interests	(7)	-	(9)	-
		$ 485,781	**6**	**290,460**	**4**
8700	**Total comprehensive income attributable to:**				
8710	Shareholders of the Company	$ 459,929	5	258,973	4
8720	Non-controlling interests	(7)	-	(7)	-
		$ 459,922	**5**	**258,966**	**4**
	Earnings per share (in New Taiwan dollars) (note 6(q)) :				
9750	Basic earnings per share	**$**	**4.81**		**2.88**
9850	Diluted earnings per share	**$**	**4.71**		**2.85**

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, 2021 and 2020

(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 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, 2020	$ 1,008,978	359,910	344,116	67,540	1,104,281	1,515,937	(49,159)	(29,420)	-	(78,579)	2,806,246	150	2,806,396
Appropriation of earnings:													
Legal reserve	-	-	37,664	-	(37,664)	-	-	-	-	-	-	-	-
Special reserve	-	-	-	11,039	(11,039)	-	-	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(257,289)	(257,289)	-	-	-	-	(257,289)	-	(257,289)
Net income in 2020	-	-	-	-	290,469	290,469	-	-	-	-	290,469	(9)	290,460
Other comprehensive income in 2020	-	-	-	-	(1,117)	(1,117)	(18,749)	(11,630)	-	(30,379)	(31,496)	2	(31,494)
Total comprehensive income in 2020	-	-	-	-	289,352	289,352	(18,749)	(11,630)	-	(30,379)	258,973	(7)	258,966
Changes in equity of associates accounted for using equity method	-	1,609	-	-	-	-	-	-	-	-	1,609	-	1,609
Balance at December 31, 2020	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**

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, 2021 and 2020

(Expressed in Thousands of New Taiwan Dollars)

	2021	2020
Cash flows from operating activities:		
Income before income tax	$ 577,273	370,669
Adjustments:		
Depreciation	52,123	54,801
Amortization	12,085	13,401
Recognized (reversal of) expected credit loss	(3,065)	2,847
Interest expense	3,418	3,004
Interest income	(2,067)	(4,740)
Share-based compensation cost	26,823	-
Share of losses of associates	1,104	269
Loss on disposal of property, plant and equipment	10	127
Impairment loss on non-financial assets	140	-
Subtotal	90,571	69,709
Changes in operating assets and liabilities:		
Changes in operating assets:		
Financial assets at fair value through profit or loss	(529)	(754)
Notes and accounts receivable	(503,522)	72,183
Accounts receivable from related parties	(1,621)	(267)
Inventories	(688,744)	138,014
Other current assets	(22,634)	17,472
Net changes in operating assets	(1,217,050)	226,648
Changes in operating liabilities:		
Financial liabilities at fair value through profit or loss	(35)	44
Notes and accounts payable	201,096	(276,423)
Accounts payable to related parties	(41,340)	61,333
Other payables	139,197	(61,852)
Provisions	2,880	(4,341)
Other current liabilities	27,419	8,382
Net defined benefit liabilities	(10)	(9)
Net changes in operating liabilities	329,207	(272,866)
Total changes in operating assets and liabilities	(887,843)	(46,218)
Total adjustments	(797,272)	23,491
Cash provided by (used in) operations	(219,999)	394,160
Interest received	2,187	4,715
Interest paid	(3,344)	(3,073)
Income taxes paid	(100,187)	(58,591)
Net cash provided by (used in) operating activities	(321,343)	337,211

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, 2021 and 2020

(Expressed in Thousands of New Taiwan Dollars)

	2021	2020
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	(159,000)	(275,000)
Proceeds from disposal of financial assets at fair value through profit or loss	98,135	366,004
Acquisition of financial assets at fair value through other comprehensive income	-	(6,071)
Acquisition of property, plant and equipment	(24,237)	(32,812)
Acquisition of intangible assets	(943)	(1,277)
Decrease (increase) in other financial assets—current	509,179	(199,919)
Decrease in other financial assets—non-current	709	847
Increase in other non-current assets	(2,271)	(3,296)
Net cash provided by (used in) investing activities	421,572	(151,524)
Cash flows from financing activities:		
Increase in short-term borrowings	153,629	23,400
Increase in guarantee deposits	8,225	5,620
Payment of lease liabilities	(18,510)	(20,528)
Cash dividends distributed to shareholders	(205,685)	(257,289)
Net cash used in financing activities	(62,341)	(248,797)
Effect of foreign exchange rate changes	(5,440)	(15,771)
Net increase (decrease) in cash and cash equivalents	32,448	(78,881)
Cash and cash equivalents at beginning of year	617,616	696,497
Cash and cash equivalents at end of year	$ **650,064**	**617,616**

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, 2021 and 2020

(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, flash memory cards and consumer electronic products.

2. Authorization of the consolidated financial statements

These consolidated financial statements were authorized for issuance by the Board of Directors on February 23, 2022.

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, 2021:

- Amendments to IFRS 4 "Extension of the Temporary Exemption from Applying IFRS 9"
- Amendments to IFRS 9, IAS39, IFRS7, IFRS 4 and IFRS 16 "Interest Rate Benchmark Reform—Phase 2"

The Group has initially adopted the following new amendments, which do not have a significant impact on its consolidated financial statements, from April 1, 2021:

- Amendments to IFRS 16 "Covid-19－Related Rent Concessions beyond June 30, 2021"

(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, 2022, would not have a significant impact on its consolidated financial statements:

- 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"

(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”	The amendments aim to promote consistency in applying the requirements by helping companies determine whether, in the balance sheet, debt and other liabilities with an uncertain settlement date should be classified as current (due or potentially due to be settled within one year) or non-current. The amendments include clarifying the classification requirements for debt a company might settle by converting it into equity.	January 1, 2023

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 “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”

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:

			Percentage of Ownership	
Name of Investor	**Name of Investee**	**Main Business and Products**	**December 31, 2021**	**December 31, 2020**
The Company	Apacer Memory America Inc. (AMA)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company	Apacer Technology B.V. (AMH)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company	Apacer Technology Japan Corp. (AMJ)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company	Kingdom Corp. Limited (AMK)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company /ACYB	Apacer Technologies Private Limited (ATPL)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
The Company	Apacer Technology (BVI) Inc. (ACYB)	Investment holding activity	100.00 %	100.00 %
ACYB	Apacer Electronic (Shanghai) Co., Ltd. (AMC)	Sales of memory modules, flash memory cards and consumer electronic products	100.00 %	100.00 %
AMK	Shenzhen Kylinesports Technology Co. (AMS)	Sales of gaming products and consumer electronic products	99.00 %	99.00 %

(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 helding for 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 foregin 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: 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 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 equipments. 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

The Group'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

Non-financial assets other than inventories, deferred income tax assets, and assets arising from employee benefits are reviewed for impairment at each reporting date to determine whether there is any indication of impairment. When there exists an indication of impairment for an asset, the recoverable amount of the asset is estimated. If the recoverable amount of an individual asset cannot be determined, the Group estimates the recoverable amount of the cash-generating units ("CGU") to which the asset has been allocated.

The recoverable amount for an individual asset or a CGU is the higher of its fair value less costs to sell or its value in use. When the recoverable amount of an asset or a CGU is less than its carrying amount, the carrying amount of the asset or CGU is reduced to its recoverable amount, and an impairment loss is recognized in profit or loss immediately.

The Group assesses at each reporting date whether there is any evidence that an impairment loss recognized in prior periods for an asset other than goodwill may no longer exist or may have decreased. If so, an impairment loss recognized in prior periods for an asset other than goodwill is reversed, and the carrying amount of the asset or CGU is increased to its revised estimate of recoverable amount. The increased carrying amount shall not exceed the carrying amount (net of amortization or depreciation) that would have been determined had no impairment loss been recognized 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) 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.

(r) 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.

(s) 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.

(t) 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:

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. Refer to note 6(e) for more details of the valuation of inventories.

6. Significant account disclosures

(a) Cash and cash equivalents

	December 31, 2021	December 31, 2020
Cash on hand	$ 24	53
Demand deposits	647,344	496,308
Time deposits with original maturities less than three months	2,696	121,255
	$ 650,064	**617,616**

As of December 31, 2021 and 2020, the time deposits with original maturities of more than three months amounted to $100,440 and 609,619, respectively, which were classified as other financial assets－current.

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

	December 31, 2021	December 31, 2020
Financial assets mandatorily at fair value through profit or loss －current:		
Open-ended mutual funds	$ 110,013	49,121
Foreign currency forward contracts	414	233
Foreign exchange swaps	321	-
	$ 110,748	**49,354**

	December 31, 2021	December 31, 2020
Financial liabilities held for trading－current:		
Foreign currency forward contracts	(117)	(168)
Foreign exchange swaps	(16)	-
	$ (133)	**(168)**

Refer to note 6(t) 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, 2021 and 2020, 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, 2020				
	Contract amount (in thousands)		**Fair value**	**Currency (Sell / Buy)**	**Maturity period**
Financial assets－foreign currency forward contracts	JPY	18,900	$ 31	JPY / TWD	2021/01/29~2021/02/26
	CNY	7,960	81	CNY / TWD	2021/01/29～2021/02/26
	USD	5,000	121	USD / TWD	2021/01/08～2021/01/22
			$ 233		

	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

	December 31, 2020				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial liabilities－foreign currency forward contracts	JPY	14,000	$ (16)	JPY / TWD	2021/02/26
	CNY	6,460	(152)	CNY / TWD	2021/01/29～2021/02/26
			$ (168)		

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

	December 31, 2021	December 31, 2020
Equity investments at fair value through other comprehensive income:		
Domestic unlisted stocks	$ 25,749	36,110
Foreign unlisted stocks	307	311
	$ 26,056	36,421

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, 2021 and 2020, and there were no transfers of any cumulative gain or loss within equity relating to these investments.

(d) Notes and accounts receivable

	December 31, 2021	December 31, 2020
Notes and accounts receivable	$ 1,340,346	836,904
Accounts receivable from related parties	2,420	799
	1,342,766	837,703
Less: loss allowance	(5,148)	(8,293)
	$ 1,337,618	829,410

As of December 31, 2021 and 2020, aside from recognizing impairment loss for credit-impaired accounts receivable amounting to $0 and $80, respectively, for notes and accounts receivable with gross carrying amounts of $0 and $80, 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 were determined as follows:

	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**

	December 31, 2020		
	Gross carrying amount	**Weighted-average loss rate**	**Loss allowance provision**
Current	$ 786,644	0.01%	79
Past due 1-90 days	43,739	2.1515%	941
Past due 91-180 days	4,877	99.0457%	4,830
Past due over 181 days	2,363	100%	2,363
	$ 837,623		**8,213**

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

	2021	2020
Balance at January 1	$ 8,293	25,152
Impairment loss recognized (reversed)	(3,065)	2,847
Write-off	(82)	(19,697)
Effect of exchange rate changes	2	(9)
Balance at December 31	$ 5,148	8,293

(e) Inventories

	December 31, 2021	December 31, 2020
Raw materials	$ 580,959	313,281
Work in process	184,871	130,281
Finished goods	633,944	304,468
Inventories in transit	86,739	49,739
	$ 1,486,513	797,769

For the years ended December 31, 2021 and 2020, the amounts of inventories recognized as cost of revenue were as follows:

	2021	2020
Cost of inventories sold	$ 7,068,453	6,005,860
Write-downs of inventories	161,105	20,513
Gain on physical inventory	(49)	(53)
	$ 7,229,509	6,026,320

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

	December 31, 2021		December 31, 2020	
Name of Associates	Percentage of voting rights	Carrying amount	Percentage of voting rights	Carrying amount
JoiiUp Technology Inc.	11.48 %	$ 1,364	12.86 %	1,340

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, 2021	December 31, 2020
The aggregate carrying amount of associates that were not individually material	$	**1,364**	**1,340**

		2021	2020
Attributable to the Group:			
Net loss	$	(1,104)	(269)
Other comprehensive income		-	-
Total comprehensive income	$	**(1,104)**	**(269)**

(g) 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, 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)
Other 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**
Balance at January 1, 2020	$	556,498	299,139	183,022	105,223	715	1,144,597
Additions		-	1,834	4,976	11,608	14,394	32,812
Disposals		-	(229)	(7,137)	(465)	-	(7,831)
Other reclassification and effect of exchange rate changes		-	2,218	3,104	(411)	(5,531)	(620)
Balance at December 31, 2020	$	**556,498**	**302,962**	**183,965**	**115,955**	**9,578**	**1,168,958**
Accumulated depreciation and impairment loss:							
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
Other reclassification and effect of exchange rate changes		-	(17)	(7)	(158)	-	(182)
Balance at December 31, 2021	$	**-**	**66,296**	**158,506**	**69,176**	**-**	**293,978**
Balance at January 1, 2020	$	-	42,998	139,479	86,060	-	268,537
Depreciation		-	10,944	16,681	9,042	-	36,667
Disposals		-	(127)	(7,137)	(440)	-	(7,704)
Other reclassification and effect of exchange rate changes		-	(2)	(31)	(467)	-	(500)
Balance at December 31, 2020	$	**-**	**53,813**	**148,992**	**94,195**	**-**	**297,000**
Carrying amount:							
Balance at December 31, 2021	$	**556,498**	**253,816**	**33,724**	**16,270**	**1,048**	**861,356**
Balance at December 31, 2020	$	**556,498**	**249,149**	**34,973**	**21,760**	**9,578**	**871,958**

For the years ended December 31, 2021 and 2020, the Group recognized an impairment loss on property, plant and equipment of $140 and $0, respectively, which were included in non-operating income and loss.

(h) Right-of-use assets

	December 31, 2021	December 31, 2020
Carrying amount:		
Buildings	$ 19,893	15,473
Other equipments	12,562	13,211
	$ 32,455	**28,684**

	2021	2020
Additions	**$ 22,345**	**14,724**
Depreciation		
Buildings	$ 13,051	13,417
Other equipments	4,516	4,717
	$ 17,567	**18,134**

(i) Intangible assets

	Computer software	Royalties for the use of patents	Total
Costs:			
Balance at January 1, 2021	$ 116,218	4,104	120,322
Additions	943	-	943
Other reclassification and effect of exchange rate changes (Note)	942	-	942
Derecognition	(6,203)	-	(6,203)
Balance at December 31, 2021	**$ 111,900**	**4,104**	**116,004**
Balance at January 1, 2020	$ 112,109	4,104	116,213
Additions	1,277	-	1,277
Other reclassification and effect of exchange rate changes (Note)	2,897	-	2,897
Derecognition	(65)	-	(65)
Balance at December 31, 2020	**$ 116,218**	**4,104**	**120,322**
Accumulated amortization:			
Balance at January 1, 2021	$ 65,935	1,162	67,097
Amortization	11,863	222	12,085
Other reclassification and effect of exchange rate changes (Note)	(122)	-	(122)
Derecognition	(6,203)	-	(6,203)
Balance at December 31, 2021	**$ 71,473**	**1,384**	**72,857**

	Computer software	Royalties for the use of patents	Total
Balance at January 1, 2020	$ 52,995	940	53,935
Amortization	13,179	222	13,401
Other reclassification and effect of exchange rate changes (Note)	(174)	-	(174)
Derecognition	(65)	-	(65)
Balance at December 31, 2020	**$ 65,935**	**1,162**	**67,097**
Carrying amount:			
Balance at December 31, 2021	**$ 40,427**	**2,720**	**43,147**
Balance at December 31, 2020	**$ 50,283**	**2,942**	**53,225**

Note: reclassified from other current asseets to intangible assets.

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

	2021	2020
Cost of revenue	**$ 2,000**	**1,942**
Operating expenses	**$ 10,085**	**11,459**

(j) Short-term borrowings

The details of short-term borrowings were as follows:

	December 31, 2021	December 31, 2020
Unsecured bank loans	**$ 251,979**	**98,350**
Unused credit facilities	**$ 1,612,131**	**1,812,250**
Interest rate interval	**0.64%~0.79%**	**0.8%**

(k) Lease liabilities

	December 31, 2021	December 31, 2020
Current	**$ 14,848**	**13,659**
Non-current	**$ 18,086**	**15,440**

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

The amounts recognized in profit or loss were as follows:

	2021	2020
Interest on lease liabilities	$ **840**	**627**
Variable lease payments not included in the measurement of lease liabilities	$ **1,126**	**-**
Expenses relating to short-term leases	$ **326**	**667**

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

	2021	2020
Total cash outflows for leases	$ **20,802**	**21,822**

(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 equipments, with lease terms of one to five years. Among these leases, the Group leases some office equipments 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.

(l) Provisions

	Warranties	Sales returns and allowances	Total
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**
Balance at January 1, 2020	$ 6,295	5,390	11,685
Provisions made	-	18,487	18,487
Amount utilized	(1,636)	(21,192)	(22,828)
Balance at December 31, 2020	$ **4,659**	**2,685**	**7,344**

(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.

(m) 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, 2021	December 31, 2020
Present value of defined benefit obligations	$ 79,355	67,110
Fair value of plan assets	(38,814)	(37,854)
	40,541	29,256
Effects of the asset ceiling	-	-
Net defined benefit liabilities	**$ 40,541**	**29,256**

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, 2021 and 2020, the Group's labor pension fund account balance at Bank of Taiwan amounted to $38,814 and $37,854, 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:

	2021	2020
Defined benefit obligations at January 1	$ 67,110	64,056
Current service costs and interest expense	514	812
Remeasurement on the net defined benefit liabilities (assets)		
—Actuarial loss arising from changes in demographic assumptions	1,884	-
—Actuarial loss arising from changes in financial assumptions	9,815	4,685
—Actuarial loss (gain) arising from experience adjustments	32	(2,223)
Benefits paid by the plan	-	(220)
Defined benefit obligations at December 31	**$ 79,355**	**67,110**

3) Movements of fair value of plan assets

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

	2021	2020
Fair value of plan assets at January 1	$ 37,854	36,188
Interest income	238	409
Remeasurement on the net defined benefit liabilities (assets)		
—Return on plan assets (excluding current interest expense)	436	1,065
Contributions by the employer	286	412
Benefits paid by the plan	-	(220)
Fair value of plan assets at December 31	**$ 38,814**	**37,854**

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:

	2021	2020
Current service costs	$ 95	92
Net interest expense on the net defined benefit liability	181	311
	$ 276	**403**
Cost of revenue	$ 86	145
Selling expenses	85	124
Administrative expenses	60	70
Research and development expenses	45	64
	$ 276	**403**

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:

	2021	2020
Cumulative amount at January 1	$ 31,033	29,636
Recognized during the period	11,295	1,397
Cumulative amount at December 31	**$ 42,328**	**31,033**

7) Actuarial assumptions

The principal assumptions of the actuarial valuation were as follows:

	December 31, 2021	December 31, 2020
Discount rate	0.625 %	0.625 %
Future salary increases rate	4.000 %	3.000 %

The Group expects to make contribution of $276 to the defined benefit plans in the year following December 31, 2021.

The weighted average duration of the defined benefit plans is 15.27 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, 2021 and 2020.

	Increase (decrease) in present value of defined benefit obligations	
	0.25% Increase	**0.25% Decrease**
December 31, 2021		
Discount rate	(2,698)	2,809
Future salary change rate	2,670	(2,583)
December 31, 2020		
Discount rate	(2,396)	2,500
Future salary change rate	2,406	(2,315)

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 2021, 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, 2021 and 2020, the Group recognized pension expenses of $24,972 and $22,875, respectively, in relation to the defined contribution plans.

(n) Income taxes

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

		2021	2020
Current income tax expense			
Current period	$	149,510	78,458
Adjustments for prior years		(12,787)	853
		136,723	79,311
Deferred income tax expense (benefit)			
Origination and reversal of temporary differences		(45,231)	898
Income tax expense	**$**	**91,492**	**80,209**

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

		2021	2020
Items that will not be reclassified subsequently to profit or loss:			
Remeasurement of defined benefit plans	**$**	**2,259**	**280**

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

		2021	2020
Income before income tax	**$**	**577,273**	**370,669**
Income tax using the Company's statutory tax rate	$	115,455	74,134
Effect of different tax rates in foreign jurisdictions		9,636	13,814
Investment tax credits		(8,337)	(4,605)
Changes in unrecognized temporary differences		(6,343)	(5,688)
Prior-year adjustments		(12,787)	853
Surtax on undistributed earnings		1,218	3,441
Others		(7,350)	(1,740)
	$	**91,492**	**80,209**

(ii) Deferred income tax assets and liabilities

1) Unrecognized deferred income tax assets and liabilities

		December 31, 2021	December 31, 2020
Unrecognized deferred income tax assets:			
Aggregate deductible temporary differences associated with investments in subsidiaries	$	18,555	20,041
Deductible temporary differences		788	788
	$	**19,343**	**20,829**

		December 31, 2021	December 31, 2020
Unrecognized deferred income tax liabilities:			
Aggregate taxable temporary differences associated with investments in subsidiaries	$	**57,898**	**53,041**

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, 2021 and 2020, 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	Allowance for doubtful receivables	Others	Total
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**
Balance at January 1, 2020	$	5,574	56,652	1,259	10,000	5,216	17,427	96,128
Recognized in profit or loss		(2)	4,000	(327)	-	(5,216)	(1,132)	(2,677)
Recognized in other comprehensive income		280	-	-	-	-	-	280
Balance at December 31, 2020	**$**	**5,852**	**60,652**	**932**	**10,000**	**-**	**16,295**	**93,731**

Deferred income tax liabilities:

	Others
Balance at January 1, 2021	$ -
Recognized in profit or loss	123
Balance at December 31, 2021	**$ 123**
Balance at January 1, 2020	$ 1,779
Recognized in profit or loss	(1,779)
Balance at December 31, 2020	**$ -**

(iii) The Company's income tax returns for the years through 2019 have been examined and approved by the R.O.C. income tax authorities.

(o) Capital and other equity

(i) Common stock

As of December 31, 2021 and 2020, the Company's authorized shares of common stock consisted of 200,000 thousand shares, of which 101,824 and 100,898 thousand shares, respectively, were issued. As of December 31, 2021 and 2020, as the shares of restricted stock to employees are not yet vested, the Company's outstanding shares of common stock were 100,898 thousand shares. 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.

During the shareholders' meeting on May 28, 2020, the Company's shareholders resolved to issue 1,200 thousand shares of restricted stock to employees. The Company has filed an effective registration with the Securities and Futures Bureau of the FSC for the issuance. In January 2021, the Company issued 926 thousand shares of restricted stock to employees. The effective date of the capital increase was January 6, 2021, and the related registration process has been completed.

(ii) Capital surplus

	December 31, 2021	December 31, 2020
Paid-in capital in excess of par value	$ 331,707	331,707
Employee stock options	12,901	12,901
Treasury stock transactions	3,781	3,781
Restricted stock to employees	26,499	-
Changes in equity of associates accounted for using equity method	14,258	13,130
	$ 389,146	**361,519**

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 and 2020 earnings was approved by the shareholders at the meeting on July 14, 2021 and May 28, 2020, respectively. The resolved appropriation of the dividend per share were as follows:

	2020		2019	
	Dividends per share (in dollars)	Amount	Dividends per share (in dollars)	Amount
Dividends per share:				
Cash dividends	$ 2.02	**205,685**	2.55	**257,289**

On February 23, 2022, the Company's Board of Directors approved the distribution of cash dividends for 2021 as follows:

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

(iv) Other equity items (net after tax)

1) Foreign currency translation differences

	2021	2020
Balance at January 1	$ (67,908)	(49,159)
Foreign exchange differences arising from translation of foreign operations	(6,458)	(18,749)
Balance at December 31	**$ (74,366)**	**(67,908)**

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

	2021	2020
Balance at January 1	$ (41,050)	(29,420)
Unrealized losses from investments in equity instruments measured at fair value through other comprehensive income	(10,365)	(11,630)
Balance at December 31	**$ (51,415)**	**(41,050)**

3) Unearned compensation cost

	2021	2020
Balance at January 1	$ -	-
Issuance of restricted stock to employees	(35,764)	-
Compensation cost arising from restricted stock issued to employees	26,823	-
Balance at December 31	**$ (8,941)**	**-**

(v) Non-controlling interests

	2021	2020
Balance at January 1	$ 143	150
Equity attributable to non-controlling interest:		
Net loss	(7)	(9)
Exchange differences on translation of foreign operations	-	1
Unrealized gain from investments in equity instruments measured at fair value through other comprehensive income	-	1
Balance at December 31	**$ 136**	**143**

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

As of December 31, 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 achivement 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:

	2021	2020
Balance at January 1	-	-
Granted	926	-
Balance at December 31	**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, 2021 and 2020, the compensation cost for the restricted shares of stock amounted to $26,823 and $0, respectively.

(ii) Employee compensation cost

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

	2021	2020
Compensation cost from restricted stock issued to employees	**$ 26,823**	**-**

(q) Earnings per share ("EPS")

(i) Basic earnings per share

	2021	2020
Net income attributable to shareholders of the Company	**$ 485,788**	**290,469**
Weighted-average number of ordinary shares outstanding (in thousands)	**100,898**	**100,898**
Basic earnings per share (in dollars)	**$ 4.81**	**2.88**

(ii) Diluted earnings per share

	2021	2020
Net income attributable to shareholders of the Company	$ **485,788**	**290,469**
Weighted-average number of ordinary shares outstanding (in thousands)	100,898	100,898
Effect of dilutive potential common stock (in thousands):		
Remuneration to employees	1,430	1,035
Restricted stock to employees	726	-
Weighted-average number of ordinary shares outstanding (including effect of dilutive potential common stock)	**103,054**	**101,933**
Diluted earnings per share (in dollars)	$ **4.71**	**2.85**

(r) 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.

	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**

	2020		
	Segment		
	Asia	**America and Europe**	**Total**
Major products:			
Flash memory cards	$ 3,387,440	766,485	4,153,925
Memory modules	2,584,673	406,181	2,990,854
Others	7,346	97	7,443
	$ **5,979,459**	**1,172,763**	**7,152,222**

(ii) Contract balances

	December 31, 2021	December 31, 2020	January 1, 2020
Notes and accounts receivable (including related parties)	$ 1,342,766	837,703	929,325
Less: loss allowance	(5,148)	(8,293)	(25,152)
	$ 1,337,618	**829,410**	**904,173**

	December 31, 2021	December 31, 2020	January 1, 2020
Contract liabilities (presented under other current liabilities)	**$ 37,810**	**11,814**	**6,838**

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

The amount of revenue recognized for the years ended December 31, 2021 and 2020 that were included in the contract liabilities balances at January 1, 2021 and 2020 were $10,814 and $4,669, 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, 2021 and 2020, the Company estimated its remuneration to employees amounting to $62,103 and $33,993, respectively, and the remuneration to directors amounting to $8,926 and $5,599, 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

	2021	2020
Interest income from bank deposits	$ 2,067	4,740

(ii) Other gains and losses－net

	2021	2020
Loss on disposal of property, plant and equipment	$ (10)	(127)
Foreign currency exchange gain (loss)	4,657	(4,886)
Gains (losses) on financial assets and liabilities at fair value through profit or loss	(1,038)	6,519
Gain from insurance claims	-	14,773
Impairment loss on non-financial assets	(140)	-
Others	3,199	7,504
	$ 6,668	23,783

(iii) Finance costs

	2021	2020
Interest expense from bank loans	$ (2,578)	(2,377)
Interest expense from lease liabilities	(840)	(627)
	$ (3,418)	(3,004)

(u) Financial instruments

(i) Categories of financial instruments

1) Financial assets

	December 31, 2021	December 31, 2020
Financial assets at fair value through profit or loss	$ 110,748	49,354
Financial assets at fair value through other comprehensive income	26,056	36,421
Financial assets measured at amortized cost:		
Cash and cash equivalents	650,064	617,616
Notes and accounts receivable (including related parties)	1,337,618	829,410
Other financial assets (including current and non-current)	105,779	615,667
Subtotal	2,093,461	2,062,693
Total	$ 2,230,265	2,148,468

2) Financial liabilities

	December 31, 2021	December 31, 2020
Financial liabilities at fair value through profit or loss	$ 133	168
Financial liabilities measured at amortized cost:		
Short-term borrowings	251,979	98,350
Notes and accounts payable (including related parties)	870,731	710,975
Other payables	384,135	244,864
Lease liabilities (including current and non-current)	32,934	29,099
Guarantee deposits	13,845	5,620
Subtotal	1,553,624	1,088,908
Total	**$ 1,553,757**	**1,089,076**

(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, 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**

	December 31, 2020					
			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	$	49,121	49,121	-	-	49,121
Derivatives－foreign currency forward contracts		233	-	233	-	233
	$	**49,354**	**49,121**	**233**	**-**	**49,354**
Financial assets at fair value through other comprehensive income－non-current:						
Domestic unlisted stocks	$	36,110	-	-	36,110	36,110
Foreign unlisted stocks		311	-	-	311	311
	$	**36,421**	**-**	**-**	**36,421**	**36,421**
Financial liabilities at fair value through profit or loss－current:						
Derivatives－foreign currency forward contracts	$	**168**	**-**	**168**	**-**	**168**

(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 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 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, 2021 and 2020.

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

	2021	2020
Balance, beginning of period	$ 36,421	41,994
Purchased	-	6,071
Losses recognized in other comprehensive income, and presented in unrealized losses on financial assets measured at fair value through other comprehensive income	(10,365)	(11,644)
Balance, end of period	**$ 26,056**	**36,421**

(v) 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, and receivables from customers. As of December 31, 2021 and 2020, the Group's maximum exposure to credit risk amounted to $2,230,265 and $2,148,468, respectively.

The Group maintains cash 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, 2021 and 2020, the Group has insured credit insurance that cover accounts receivable amounting to $588,459 and $474,972, 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, 2021 and 2020, the Group had unused credit facilities of $1,612,131 and $1,812,250, 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, 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:				
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)	-

		Carrying amount	Contractual cash flows	Within 1 year	More than 1 year
December 31, 2020					
Non-derivative financial liabilities:					
Short-term borrowings	$	98,350	(98,416)	(98,416)	-
Notes and accounts payable (including related parties)		710,975	(710,975)	(710,975)	-
Other payables		244,864	(244,864)	(244,864)	-
Lease Liabilities		29,099	(29,947)	(14,146)	(15,801)
Guarantee deposits		5,620	(5,620)	-	(5,620)
Derivative financial instruments:					
Foreign currency forward contracts:					
Inflow		-	31,240	31,240	-
Outflow		168	(31,408)	(31,408)	-

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) 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, 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

	December 31, 2020				
	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	$ 27,120	28.100	762,072	1 %	7,621
CNY	14,530	4.297	62,435	1 %	624
JPY	33,910	0.273	9,257	1 %	93
Financial liabilities					
Monetary items					
USD	22,614	28.100	635,453	1 %	6,355
CNY	33	4.297	142	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, 2021 and 2020 were $4,657 and $(4,886), 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, 2021 and 2020 would have been $2,520 and $ 984, 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.

(w) 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, 2021	December 31, 2020
Total liabilities	$ 1,786,198	1,241,417
Total equity	$ 3,091,870	2,809,682
Liability-to-equity ratio	57.77 %	44.18 %

In 2021, the Group increased its notes and accounts payable and bank loans due to the increase of stock level. It also resulted in the increasing of liability-to-equity ratio.

(x) Investing and financing activities not affecting current cash flow

(i) For acquisition of right-of-use assets under operating lease for the years ended December 31, 2021 and 2020, please refer to note 6(h).

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

			Non-cash changes	
	January 1, 2021	**Cash flows**	**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**

			Non-cash changes	
	January 1, 2020	**Cash flows**	**Acquisition**	**December 31, 2020**
Short-term borrowings	$ 74,950	23,400	-	98,350
Lease liabilities	34,903	(20,528)	14,724	29,099
Guarantee deposits	-	5,620	-	5,620
	$ 109,853	**8,492**	**14,724**	**133,069**

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
Directors, general manager and vice general managers	The Group’s key management personnel

(b) Significant related-party transactions

(i) Revenue

		2021	2020
The Group's key management personnel (the Company's director)	$	11,609	9,757

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

		2021	2020
The Group's key management personnel－Phison (the Company's director)	$	1,154,468	1,081,670

There are no significant differences between the purchase prices for related parties and those for third-party vendors. The payment terms of EOM 45 days shows no significant difference between related parties and third-party vendors.

(iii) Receivables

Account	Related-party categories		December 31, 2021	December 31, 2020
Accounts receivable from related parties	The Group's key management personnel (the Company's director)	$	2,420	799

(iv) Payables

Account	Related-party categories		December 31, 2021	December 31, 2020
Accounts payable to related parties	The Group's key management personnel－Phison (the Company's director)	$	202,608	243,948
Other payables to related parties	The Group's key management personnel (the Company's director)		75	561
		$	202,683	244,509

(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		2021	2020
Operating expenses	The Group's key management personnel (the Company's director)	$	266	776
	Associates		50	53
		$	316	829

(c) Compensation for key management personnel

		2021	2020
Short-term employee benefits	$	64,842	44,769
Post-employment benefits		432	315
Share-based payments		11,623	-
	$	76,897	45,084

8. Pledged assets: None

9. Significant commitments and contingencies:

As of December 31, 2021 and 2020, the Group had outstanding letters of guarantee amounting to $12,000 and $20,000, respectively, 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:

	2021			2020		
	Cost of revenue	Operating expenses	Total	Cost of revenue	Operating expenses	Total
Employee benefits:						
Salaries	143,160	504,541	647,701	139,231	429,275	568,506
Insurance	12,877	37,935	50,812	14,299	38,959	53,258
Pension	5,395	19,853	25,248	6,305	16,973	23,278
Others	8,629	50,684	59,313	11,473	23,789	35,262
Depreciation	19,982	32,141	52,123	24,031	30,770	54,801
Amortization	2,000	10,085	12,085	1,942	11,459	13,401

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, 2021:

(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, 2021				Maximum percentage of ownership during 2021		Note
				Shares/ Units	Carrying Value	Percentage of Ownership	Fair value	Shares/ Units	Percentage of Ownership	
The Company	Fund: Jih Sun Money Market Fund	-	Financial assets at fair value through profit or loss－current	6,540	98,012	-	98,012	-	-	-
The Company	Fund: Taiwan Cooperative Bank Taiwan Money Market Fund	-	Financial assets at fair value through profit or loss－current	1,170	12,001	-	12,001	-	-	-
The Company	Stock: Formosa Golf and Country Club Corp.	-	Financial assets at fair value through other comprehensive income－non-current	3.6	9,643	0.01 %	9,643	3.6	0.01 %	-
The Company	Stock: OTO Photonics Inc.	-	Financial assets at fair value through other comprehensive income－non-current	3,772	16,106	12.59 %	16,106	3,772	12.59 %	-
AMS	Stock: Futurepath Technology (Shenzhen) co., ltd	-	Financial assets at fair value through other comprehensive income－non-current	31.5	307	0.03 %	307	31.5	0.03 %	-

(iv) Marketable securities for which the accumulated purchase or sale amounts for the year exceed $300 million or 20% of the paid-in capital: None

(v) Acquisition of real estate which exceeds $300 million or 20% of the paid-in capital: None

(vi) Disposal of real estate which exceeds $300 million or 20% of the paid-in capital: None

(vii) Total purchases from and sales to related parties which exceed $100 million or 20% of the paid-in capital:

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)	(847,142)	(10)%	OA30	-	-	23,490	2 %	Note
The Company	AMK	The Company's subsidiary	(Sales)	(187,485)	(2)%	OA30	-	-	22,545	2 %	Note
The Company	AMH	The Company's subsidiary	(Sales)	(662,304)	(8)%	OA30	-	-	49,047	4 %	Note
The Company	AMC	The Company's subsidiary	(Sales)	(615,881)	(7)%	M60	-	-	82,156	6 %	Note
The Company	Phison	The Company's director	Purchases	1,154,468	15 %	M45	-	-	(202,608)	(23)%	-
AMA	The Company	AMA's parent company	Purchases	847,142	96 %	OA30	-	-	(23,490)	(95)%	Note

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)	
AMK	The Company	AMK's parent company	Purchases	187,485	100 %	OA30	-	-	(22,545)	(100)%	Note
AMH	The Company	AMH's parent company	Purchases	662,304	100 %	OA30	-	-	(49,047)	(100)%	Note
AMC	The Company	AMC's parent company	Purchases	615,881	100 %	M60	-	-	(82,156)	(100)%	Note

Note : The above intercompany transactions have been eliminated when preparing the consolidated financial statements.

(viii) Receivables from related parties which exceed $100 million or 20% of the paid-in capital: None

(ix) Transactions about derivative instruments: Please refer to note 6(b)

(x) Business relationships and significant intercompany transactions:

Number (Note 1)	Company Name	Counterparty	Nature of Relationship (Note 2)	Transaction Details			
				Account	Amount	Payment Terms	Percentage of Consolidated Operating Revenue or Total Assets
0	The Company	AMA	1	Sales	847,142	OA30	10 %
0	The Company	AMK	1	Sales	187,485	OA30	2 %
0	The Company	AMH	1	Sales	662,304	OA30	8 %
0	The Company	AMC	1	Sales	615,881	M60	7 %
0	The Company	AMJ	1	Sales	83,857	M60	1 %
0	The Company	AMA	1	Accounts receivable	23,490	OA30	-
0	The Company	AMK	1	Accounts receivable	22,545	OA30	-
0	The Company	AMH	1	Accounts receivable	49,047	OA30	1 %
0	The Company	AMC	1	Accounts receivable	82,156	M60	2 %
0	The Company	AMJ	1	Accounts receivable	8,369	M60	-

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, 2021			Maximum percentage of Ownership during 2021		Net Income (Loss) of the Investee	Investment Income (Loss)	Note
				December 31, 2021	December 31, 2020	Shares	Percentage of Ownership	Carrying Value	Shares	Percentage of Ownership			
The Company	AMA	USA	Trading of memory modules	610	610	20	100.00 %	251,082	20	100.00 %	10,822	10,822	Note
The Company	ACYB	British Virgin Islands	Investment and holding activity	18,542	18,542	2,636	100.00 %	41,117	2,636	100.00 %	7,397	7,397	Note
The Company	AMJ	Japan	Trading of memory modules	2,918	2,918	0.2	100.00 %	18,895	0.2	100.00 %	2,322	2,322	Note
The Company	ATPL	India	Trading of memory modules	915	915	29	100.00 %	1,383	29	100.00 %	35	35	Note
The Company	AMK	Hong Kong	Trading of memory modules	20,917	20,917	5,000	100.00 %	11,996	5,000	100.00 %	317	317	Note
The Company	AMH	Netherlands	Trading of memory modules	130,469	130,469	80	100.00 %	46,616	80	100.00 %	10,986	10,986	Note
The Company	JoiiUp	Taiwan	Cloud services and software development	7,500	7,500	750	11.48 %	1,364	750	12.86 %	(9,036)	(1,104)	-

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, 2021	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2021	Net Income (Loss) of Investee	% of Ownership of Direct or Indirect Investment	Maximum percentage of ownership during 2021		Investment Income (Loss)	Carrying Value as of December 31, 2021	Accumulated Inward Remittance of Earnings as of December 31, 2021
					Outflow	Inflow				Shares	Percentage of Ownership			
Apacer Electronic (Shanghai) Co., Ltd (AMC)	Trading of memory modules	13,845 (USD500 thousand)	Type 2	13,845 (USD500 thousand)	-	-	13,845 (USD500 thousand)	7,468	100.00 %	(Note 4)	100.00 %	7,468 (Note 2)	37,104	-
Shenzhen Kylinesports Technology Co. (AMS)	Trading of gaming products	20,712 (USD748 thousand)	Type 2	16,559 (USD598 thousand)	-	-	16,559 (USD598 thousand) (Note 5)	(751)	99.00 %	(Note 4)	99.00 %	(744) (Note 3)	13,555	-

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$27.69.

(ii) Limits on investments in Mainland China:

Investor	Accumulated Investment in Mainland China as of December 31, 2021	Investment Amounts Authorized by Investment Commission, MOEA	Upper Limit on Investment Authorized by Investment Commission, MOEA
The Company	30,404 (USD 1,098 thousand)	34,114 (USD 1,232 thousand)	1,855,040

(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	10,050,000	9.86 %
Teddy Lu	5,699,906	5.59 %

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 manafacturing, 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:

	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**

	2020			
	Asia	**America and Europe**	**Adjustments and eliminations**	**Total**
External revenue	$ 5,979,459	1,172,763	-	7,152,222
Intra-group revenue	1,674,521	4,829	(1,679,350)	-
Total segment revenue	**$ 7,653,980**	**1,177,592**	**(1,679,350)**	**7,152,222**
Segment profit (loss)	**$ 388,684**	**31,720**	**(49,735)**	**370,669**

(c) Product information

Revenues from external customers are detailed below:

Products and services	**2021**	**2020**
Memory modules	$ 4,073,395	2,990,854
Flash memory products	4,587,046	4,153,925
Others	21,952	7,443
	$ 8,682,393	**7,152,222**

(d) Geographic information

In presenting information on the basis of geography, segment revenue is based on the geographical location of business, and segment assets are based on the geographical location of the assets.

Revenues from external customers are detailed below:

Products and services	**2021**	**2020**
Taiwan	$ 1,772,385	1,338,231
Americas	1,162,669	963,487
Hong Kong	637,956	515,010
Japan	405,802	528,275
Mainland China	886,773	832,275
Others	3,816,808	2,974,944
	$ 8,682,393	**7,152,222**

Non-current assets:

Products and services	2021	2020
Taiwan	$ 929,901	937,130
Japan	3,072	6,026
Netherland	1,547	3,274
Americas	2,088	4,493
Others	2,201	3,466
	$ 938,809	**954,389**

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, 2021 and 2020, 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, 2021 and 2020, 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 Certification of Financial Statements by Certified Public Accountants and the auditing standards generally accepted in the Republic of China. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Parent-Company-Only Financial Statements section of our report. We are independent of the Company in accordance with the Certified Public Accountants Code of Professional Ethics in Republic of China (the "Code"), and we have fulfilled our other ethical responsibilities in accordance with the Code. 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, 2021 are stated as follows:

1. Revenue recognition

   Please refer to notes 4(o) and 6(r) for the accounting policy on "Revenue recognition" and "Revenue from contracts with customers" for the related disclosures, respectively, of the notes to parent-company-only financial statements.

   Description of key audit matter:

   The Company engages primarily in the manufacturing and sales of memory modules and flash memory products, with product diversification and market channels spread globally. The Company recognizes its revenue depending on the various trade terms in each individual sale transaction and the transfer of control of the goods, which are considered to be complex in determining the timing of revenue recognition. Consequently, the revenue recognition 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 understanding and testing the design and operating effectiveness of the Company's internal controls over revenue recognition; assessing whether the accounting policy of the timing of revenue recognition is appropriate through understanding the main types of revenues of the Company, and reviewing the sales contracts and the related trade terms with customers; assessing whether the accounting treatment of revenue recognition is appropriate through performing a sample test of the original documents of sales transaction; performing sample tests of sales transactions that took place before and after the balance sheet date, and reviewing the related documents to understand and analyze the reason for any identified sales returns and allowances that took place after the balance sheet date, to assess whether the revenue is recognized within the proper period.

2. Valuation of inventories

Please refer to notes 4(g), 5 and 6(e) for the inventory accounting policy, "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 matter above, our principal audit procedures included obtaining and understanding the Company's accounting policy of valuation of inventories, performing a retrospective test to understand the reasonableness of estimations of allowance for inventory valuation loss with reference to actual write-off of inventories in a subsequent period, and evaluating the reasonableness of the accounting policy of valuation of inventories; as well as performing a sample test of the estimated selling price provided by Management to assess the reasonableness of the net realizable value and allowance for inventory valuation loss.

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 auditing standards generally accepted in 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 auditing standards generally accepted in the Republic of China, we exercised professional judgment and maintained 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, 2021 and are therefore the key audit matters. We described these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determined that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

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

KPMG

Taipei, Taiwan (Republic of China)
February 23, 2022

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, 2021 and 2020

(Expressed in Thousands of New Taiwan Dollars)

	Assets	December 31, 2021 Amount	%	December 31, 2020 Amount	%
	Current assets:				
1100	Cash and cash equivalents (note 6(a))	$ 336,246	7	323,768	8
1110	Financial assets at fair value through profit or loss－current (note 6(b))	110,748	2	49,354	1
1170	Notes and accounts receivable, net (notes 6(d) and (r))	1,114,944	23	670,973	17
1180	Accounts receivable from related parties (notes 6(d), (r) and 7)	188,027	4	125,086	3
1310	Inventories (note 6(e))	1,449,939	30	773,253	20
1470	Other current assets	72,362	2	50,508	1
1476	Other financial assets－current (note 6(a))	89,400	2	598,000	15
	Total current assets	3,361,666	70	2,590,942	65
	Non-current assets:				
1517	Financial assets at fair value through other comprehensive income－non-current (note 6(c))	25,749	-	36,110	1
1550	Investments accounted for using equity method (note 6(f))	372,453	8	349,605	9
1600	Property, plant and equipment (note 6(g))	858,517	18	868,620	22
1755	Right-of-use assets (note 6(h))	26,490	-	14,889	-
1780	Intangible assets (note 6(i))	43,043	1	53,099	1
1840	Deferred income tax assets (note 6(n))	136,677	3	88,048	2
1980	Other financial assets－non-current	2,394	-	2,792	-
1990	Other non-current assets	1,851	-	522	-
	Total non-current assets	1,467,174	30	1,413,685	35
	Total assets	$ 4,828,840	100	4,004,627	100

	Liabilities and Equity	December 31, 2021 Amount	%	December 31, 2020 Amount	%
	Current liabilities:				
2100	Short-term borrowings (note 6(j))	$ 251,979	5	98,350	2
2120	Financial liabilities at fair value through profit or loss－current (note 6(b))	133	-	168	-
2170	Notes and accounts payable	666,953	14	461,032	12
2180	Accounts payable to related parties (note 7)	203,237	4	244,412	6
2200	Other payables (note 6(s))	362,401	8	229,268	6
2220	Other payables to related parties (note 7)	1,482	-	1,849	-
2230	Current income tax liabilities	113,485	3	74,337	2
2250	Provisions－current (note 6(l))	10,224	-	7,344	-
2280	Lease liabilities－current (note 6(k))	8,710	-	5,569	-
2300	Other current liabilities (note 6(r))	59,752	1	34,073	1
	Total current liabilities	1,678,356	35	1,156,402	29
	Non-current liabilities:				
2570	Deferred income tax liabilities (note 6(n))	123	-	-	-
2580	Lease liabilities－non-current (note 6(k))	18,086	-	9,430	-
2640	Net defined benefit liabilities (note 6(m))	40,541	1	29,256	1
	Total non-current liabilities	58,750	1	38,686	1
	Total liabilities	1,737,106	36	1,195,088	30
	Equity (note 6(o)):				
3100	Common stock	1,018,243	21	1,008,978	25
3200	Capital surplus	389,146	8	361,519	9
3300	Retained earnings	1,819,067	38	1,548,000	39
3400	Other equity	(134,722)	(3)	(108,958)	(3)
	Total equity	3,091,734	64	2,809,539	70
	Total liabilities and equity	$ 4,828,840	100	4,004,627	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, 2021 and 2020

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

		2021		2020	
		Amount	%	Amount	%
4000	**Revenue (notes 6((r) and 7)**	$ 8,422,696	100	6,890,658	100
5000	**Cost of revenue (notes 6(e), (g), (i), (k), (l), (m), (p),7 and 12)**	(7,204,894)	(86)	(5,995,170)	(87)
	Gross profit before unrealized gross profit	1,217,802	14	895,488	13
5920	Realized (unrealized) gross profit	(2,593)	-	2,107	-
	Gross profit	1,215,209	14	897,595	13
	Operating expenses (notes 6(d), (g), (h), (i), (k), (m), (p), (s), 7 and 12):				
6100	Selling expenses	(345,981)	(4)	(313,600)	(5)
6200	Administrative expenses	(202,314)	(2)	(152,162)	(2)
6300	Research and development expenses	(138,947)	(2)	(122,801)	(2)
6450	Reversal of (recognized) expected credit losses	3,065	-	(2,920)	-
6000	**Total operating expenses**	(684,177)	(8)	(591,483)	(9)
	Operating income	531,032	6	306,112	4
	Non-operating income and loss (notes 6(f), (g), (k) and (t)):				
7100	Interest income	1,101	-	2,715	-
7020	Other gains and losses－net	6,855	-	4,709	-
7050	Finance costs	(3,188)	-	(2,679)	-
7070	Share of profit of subsidiaries and associates	30,775	1	49,467	1
	Total non-operating income and loss	35,543	1	54,212	1
	Income before income tax	566,575	7	360,324	5
7950	**Less: Income tax expenses (note 6(n))**	(80,787)	(1)	(69,855)	(1)
	Net income	485,788	6	290,469	4
	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	(11,295)	-	(1,397)	-
8316	Unrealized losses from investments in equity instruments measured at fair value through other comprehensive income	(10,361)	-	(11,709)	-
8330	Share of other comprehensive income of subsidiaries	(4)	-	79	-
8349	Less: income tax related to items that will not be reclassified subsequently to profit or loss	2,259	-	280	-
		(19,401)	-	(12,747)	-
8360	**Items that may be reclassified subsequently to profit or loss**				
8361	Exchange differences on translation of foreign operations	(6,458)	-	(18,749)	-
8399	Less: income tax related to items that may be reclassified subsequently to profit or loss	-	-	-	-
		(6,458)	-	(18,749)	-
	Other comprehensive income for the year, net of income tax	(25,859)	-	(31,496)	-
	Total comprehensive income for the year	**$ 459,929**	**6**	**258,973**	**4**
	Earnings per share (in New Taiwan dollars) (note 6(g)) :				
9750	Basic earnings per share	**$**	**4.81**		**2.88**
9850	Diluted earnings per share	**$**	**4.71**		**2.85**

See accompanying notes to arent-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, 2021 and 2020

(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 losses on financial assets measured at fair value through other comprehensive income	Unearned stock-based employee compensation	Total	Total equity
Balance at January 1, 2020	$ 1,008,978	359,910	344,116	67,540	1,104,281	1,515,937	(49,159)	(29,420)	-	(78,579)	2,806,246
Appropriation of earnings:											
Legal reserve	-	-	37,664	-	(37,664)	-	-	-	-	-	-
Special reserve	-	-	-	11,039	(11,039)	-	-	-	-	-	-
Cash dividends distributed to shareholders	-	-	-	-	(257,289)	(257,289)	-	-	-	-	(257,289)
Net income in 2020	-	-	-	-	290,469	290,469	-	-	-	-	290,469
Other comprehensive income in 2020	-	-	-	-	(1,117)	(1,117)	(18,749)	(11,630)	-	(30,379)	(31,496)
Total comprehensive income in 2020	-	-	-	-	289,352	289,352	(18,749)	(11,630)	-	(30,379)	258,973
Changes in equity of associates accounted for using equity method	-	1,609	-	-	-	-	-	-	-	-	1,609
Balance at December 31, 2020	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**

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, 2021 and 2020

(Expressed in Thousands of New Taiwan Dollars)

	2021	2020
Cash flows from operating activities:		
Income before income tax	$ 566,575	360,324
Adjustments:		
Depreciation	42,432	44,336
Amortization	11,941	13,140
Recognized (reversal of) expected credit loss	(3,065)	2,920
Interest expense	3,188	2,679
Interest income	(1,101)	(2,715)
Share-based compensation cost	26,823	-
Share of profits of subsidiaries and associates	(30,775)	(49,467)
Loss on disposal of property, plant and equipment	-	102
Impairment loss on non-financial assets	140	-
Unrealized (realized) gross profit on sales to subsidiaries and associates	2,593	(2,107)
Subtotal	52,176	8,888
Changes in operating assets and liabilities:		
Changes in operating assets:		
Financial assets at fair value through profit or loss	(529)	(754)
Notes and accounts receivable	(440,906)	32,979
Accounts receivable from related parties	(62,941)	45,617
Inventories	(676,686)	140,645
Other current assets	(21,971)	8,752
Net changes in operating assets	(1,203,033)	227,239
Changes in operating liabilities:		
Financial liabilities at fair value through profit or loss	(35)	44
Notes and accounts payable	205,921	(279,989)
Accounts payable to related parties	(41,175)	61,263
Other payables	133,059	(56,832)
Other payables to related parties	(367)	562
Provisions	2,880	(4,341)
Other current liabilities	27,458	7,558
Net defined benefit liabilities	(10)	(9)
Net changes in operating liabilities	327,731	(271,744)
Total changes in operating assets and liabilities	(875,302)	(44,505)
Total adjustments	(823,126)	(35,617)
Cash provided by (used in) operations	(256,551)	324,707
Interest received	1,218	2,713
Interest paid	(3,114)	(2,748)
Income taxes paid	(89,665)	(41,072)
Net cash provided by (used in) operating activities	(348,112)	283,600

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, 2021 and 2020

(Expressed in Thousands of New Taiwan Dollars)

	2021	2020
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	(159,000)	(275,000)
Proceeds from disposal of financial assets at fair value through profit or loss	98,135	366,004
Acquisition of financial assets at fair value through other comprehensive income	-	(6,071)
Acquisition of property, plant and equipment	(23,824)	(32,099)
Acquisition of intangible assets	(943)	(1,212)
Decrease (increase) in other financial assets—current	508,600	(188,300)
Decrease in other financial assets—non-current	398	516
Increase in other non-current assets	(2,271)	(3,296)
Net cash provided by (used in) investing activities	421,095	(139,458)
Cash flows from financing activities:		
Increase in short-term borrowings	153,629	23,400
Payment of lease liabilities	(8,449)	(8,054)
Cash dividends distributed to shareholders	(205,685)	(257,289)
Net cash used in financing activities	(60,505)	(241,943)
Net increase (decrease) in cash and cash equivalents	12,478	(97,801)
Cash and cash equivalents at beginning of year	323,768	421,569
Cash and cash equivalents at end of year	$ **336,246**	**323,768**

See accompanying notes to arent-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, 2021 and 2020

(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, flash memory cards and consumer electronic products.

2. Authorization of parent-company-only financial statements

These parent-company-only financial statements were authorized for issuance by the Board of Directors on February 23, 2022.

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. 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, 2021:

- Amendments to IFRS 4 "Extension of the Temporary Exemption from Applying IFRS 9"
- Amendments to IFRS 9, IAS39, IFRS7, IFRS 4 and IFRS 16 "Interest Rate Benchmark Reform—Phase 2"

The Company has initially adopted the following new amendments, which do not have a significant impact on its parent-company-only financial statements, from April 1, 2021:

- Amendments to IFRS 16 "Covid-19-Related Rent Concessions beyond June 30, 2021"

(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, 2022, would not have a significant impact on its parent-company-only financial statements:

- 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"

(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 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"	The amendments aim to promote consistency in applying the requirements by helping companies determine whether, in the balance sheet, debt and other liabilities with an uncertain settlement date should be classified as current (due or potentially due to be settled within one year) or non-current. The amendments include clarifying the classification requirements for debt a company might settle by converting it into equity.	January 1, 2023

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 "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"

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 helding for 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 foregin 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. 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 equipments. 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

Non-financial assets other than inventories, deferred income tax assets, and assets arising from employee benefits are reviewed for impairment at each reporting date to determine whether there is any indication of impairment. When there exists an indication of impairment for an asset, the recoverable amount of the asset is estimated. If the recoverable amount of an individual asset cannot be determined, the Company estimates the recoverable amount of the cash-generating units ("CGU") to which the asset has been allocated.

The recoverable amount for an individual asset or a CGU is the higher of its fair value less costs to sell or its value in use. When the recoverable amount of an asset or a CGU is less than its carrying amount, the carrying amount of the asset or CGU is reduced to its recoverable amount, and an impairment loss is recognized in profit or loss immediately.

The Company assesses at each reporting date whether there is any evidence that an impairment loss recognized in prior periods for an asset other than goodwill may no longer exist or may have decreased. If so, an impairment loss recognized in prior periods for an asset other than goodwill is reversed, and the carrying amount of the asset or CGU is increased to its revised estimate of recoverable amount. The increased carrying amount shall not exceed the carrying amount (net of amortization or depreciation) that would have been determined had no impairment loss been recognized 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) 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.

(t) 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:

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.

Refer to note 6(e) for more details of the valuation of inventories.

6. Significant account disclosures

(a) Cash and cash equivalents

	December 31, 2021	December 31, 2020
Cash on hand	$ 10	10
Demand deposits	335,236	204,158
Time deposits with original maturities less than three months	1,000	119,600
	$ 336,246	**323,768**

As of December 31, 2021 and 2020, the time deposits with original maturities of more than three months amounted to $89,400 and $598,000, respectively, which were classified as other financial assets－current.

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

	December 31, 2021	December 31, 2020
Financial assets mandatorily measured at fair value through profit or loss－current:		
Open-ended mutual funds	$ 110,013	49,121
Foreign currency forward contracts	414	233
Foreign exchange swaps	321	-
	$ 110,748	**49,354**
Financial liabilities held for trading－current:		
Foreign currency forward contracts	(117)	(168)
Foreign exchange swaps	(16)	-
	$ (133)	**(168)**

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, 2021 and 2020, 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, 2020				
	Contract amount (in thousands)		Fair value	Currency (Sell / Buy)	Maturity period
Financial assets－foreign currency forward contracts	JPY	18,900	$ 31	JPY / TWD	2021/01/29～2021/02/26
	CNY	7,960	81	CNY / TWD	2021/01/29～2021/02/26
	USD	5,000	121	USD / TWD	2021/01/08～2021/01/22
			$ 233		

	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

	December 31, 2020					
	Contract amount (in thousands)		Fair value		Currency (Sell / Buy)	Maturity period
Financial liabilities－foreign currency forward contracts	JPY	14,000	$	(16)	JPY / TWD	2021/01/26
	CNY	6,460		(152)	CNY / TWD	2021/01/29～2021/02/26
			$	(168)		

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

	December 31, 2021	December 31, 2020
Equity investments at fair value through other comprehensive income:		
Domestic unlisted stocks	$ 25,749	36,110

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, 2021 and 2020, and there were no transfers of any cumulative gain or loss within equity relating to these investments.

(d) Notes and accounts receivable

	December 31, 2021	December 31, 2020
Notes and accounts receivable	$ 1,120,092	679,186
Accounts receivable from related parties	188,027	125,086
	1,308,119	804,272
Less: loss allowance	(5,148)	(8,213)
	$ 1,302,971	796,059

The Company applies the simplified approach to provide for its expected credit losses, i.e. the use of lifetime expected loss provision for all receivables (including related parties), as well as incorporated forward looking information. The loss allowance provision were determined as follows:

	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**

	December 31, 2020		
	Gross carrying amount	**Weighted-average loss rate**	**Loss allowance provision**
Current	$ 766,881	0.6393%	4,903
Past due 1-90 days	34,844	2.1984%	766
Past due 91-180 days	361	99.0457%	358
Past due over 181 days	2,186	100%	2,186
	$ 804,272		**8,213**

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

	2021	**2020**
Balance at January 1	$ 8,213	5,293
Impairment loss recognized (reversed)	(3,065)	2,920
Balance at December 31	**$ 5,148**	**8,213**

(e) Inventories

	December 31, 2021	**December 31, 2020**
Raw materials	$ 580,959	313,088
Work in process	184,871	130,281
Finished goods	597,370	280,145
Inventories in transit	86,739	49,739
	$ 1,449,939	**773,253**

For the years ended December 31, 2021 and 2020, the amounts of inventories recognized as cost of revenue were as follows:

		2021	2020
Cost of inventories sold	$	7,049,943	5,975,223
Write-downs of inventories		155,000	20,000
Gain on physical inventory		(49)	(53)
	$	7,204,894	5,995,170

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 the equity method at the reporting date were as follows:

		December 31, 2021	December 31, 2020
Subsidiaries	$	371,089	348,265
Associates		1,364	1,340
	$	372,453	349,605

(i) Investments in subsidiaries

Please refer to the consolidated financial statements for the year ended December 31, 2021.

(ii) Investments in associates

	December 31, 2021		December 31, 2020	
Name of Associates	Percentage of voting rights	Carrying amount	Percentage of voting rights	Carrying amount
JoiiUp Technology Inc.	11.48 %	$ 1,364	12.86 %	1,340

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, 2021	December 31, 2020
The aggregate carrying amount of associates that were not individually material	$	1,364	1,340

		2021	2020
Attributable to the Company:			
Net loss	$	(1,104)	(269)
Other comprehensive income		-	-
Total comprehensive income	$	(1,104)	(269)

(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, 2021 and 2020 were as follows:

		Land	Buildings	Machinery and equipment	Other equipment	Equipment to be inspected and construction in progress	Total
Cost:							
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**
Balance at January 1, 2020	$	556,498	298,490	182,527	91,847	714	1,130,076
Additions		-	1,834	4,929	10,942	14,394	32,099
Disposals		-	(229)	(7,137)	-	-	(7,366)
Reclassification		-	2,226	3,137	168	(5,531)	-
Balance at December 31, 2020	$	**556,498**	**302,321**	**183,456**	**102,957**	**9,577**	**1,154,809**
Accumulated depreciation and impairment loss:							
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**
Balance at January 1, 2020	$	-	42,916	138,989	75,957	-	257,862
Depreciation		-	10,901	16,676	8,014	-	35,591
Disposals		-	(127)	(7,137)	-	-	(7,264)
Balance at December 31, 2020	$	**-**	**53,690**	**148,528**	**83,971**	**-**	**286,189**
Carrying amount:							
Balance at December 31, 2021	$	**556,498**	**253,396**	**33,687**	**13,888**	**1,048**	**858,517**
Balance at December 31, 2020	$	**556,498**	**248,631**	**34,928**	**18,986**	**9,577**	**868,620**

For the years ended December 31, 2021 and 2020, the Company recognized an impairment loss on property, plant and equipment of $140 and $0, respectively, which were included in non-operating income and loss.

(h) Right-of-use assets

		December 31, 2021	December 31, 2020
Carrying amount:			
Buildings	$	13,928	1,735
Other equipments		12,562	13,154
	$	**26,490**	**14,889**

		2021	2020
Additions	$	**20,246**	**9,622**
Depreciation			
Buildings	$	4,129	4,029
Other equipments		4,516	4,716
	$	**8,645**	**8,745**

(i) Intangible assets

The movements of costs and accumulated amortization of intangible assets for the years ended December 31, 2021 and 2020 were as follows:

		Computer software	Royalties for the use of patents	Total
Costs:				
Balance at January 1, 2021	$	111,664	4,104	115,768
Additions		943	-	943
Reclassification (Note)		942	-	942
Derecognition		(6,203)	-	(6,203)
Balance at December 31, 2021	$	**107,346**	**4,104**	**111,450**
Balance at January 1, 2020	$	107,620	4,104	111,724
Additions		1,212	-	1,212
Reclassification (Note)		2,897	-	2,897
Derecognition		(65)	-	(65)
Balance at December 31, 2020	$	**111,664**	**4,104**	**115,768**
Accumulated amortization:				
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**
Balance at January 1, 2020	$	48,654	940	49,594
Amortization		12,918	222	13,140
Derecognition		(65)	-	(65)
Balance at December 31, 2020	$	**61,507**	**1,162**	**62,669**
Carrying amount:				
Balance at December 31, 2021	$	**40,323**	**2,720**	**43,043**
Balance at December 31, 2020	$	**50,157**	**2,942**	**53,099**

Note: reclassified from other non-current assets to intangible assets.

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

		2021	2020
Cost of revenue	$	**2,000**	**1,942**
Operating expenses	$	**9,941**	**11,198**

(j) Short-term borrowings

The details of short-term borrowings were as follows:

	December 31, 2021	December 31, 2020
Unsecured bank loans	$ 251,979	98,350
Unused credit facilities	$ 1,612,131	1,812,250
Interest rate interval	0.64%~0.79%	0.8%

(k) Lease liabilities

	December 31, 2021	December 31, 2020
Current	$ 8,710	5,569
Non-current	$ 18,086	9,430

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

The amounts recognized in profit or loss were as follows:

	2021	2020
Interest on lease liabilities	$ 612	302
Variable lease payments not included in the measurement of lease liabilities	$ 1,126	-
Expenses relating to short-term leases	$ 251	667

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

	2021	2020
Total cash outflow for leases	$ 10,438	9,023

(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 equipments, with lease terms of one to five years. In addition, the Company leases some office equipments 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, 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**
Balance at January 1, 2020	$	6,295	5,390	11,685
Provisions made		-	18,487	18,487
Amount utilized		(1,636)	(21,192)	(22,828)
Balance at December 31, 2020	**$**	**4,659**	**2,685**	**7,344**

(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, 2021	December 31, 2020
Present value of defined benefit obligations	$	79,355	67,110
Fair value of plan assets		(38,814)	(37,854)
		40,541	29,256
Effects of the asset ceiling		-	-
Net defined benefit liabilities	**$**	**40,541**	**29,256**

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, 2021 and 2020, the Company's labor pension fund account balance at Bank of Taiwan amounted to $38,814 and $37,854, 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:

		2021	2020
Defined benefit obligations at January 1	$	67,110	64,056
Current service costs and interest expense		514	812
Remeasurement on the net defined benefit liabilities (assets)			
－Actuarial loss arising from changes in demographic assumptions		1,884	-
－Actuarial loss arising from changes in financial assumptions		9,815	4,685
－Actuarial loss arising from experience adjustments		32	(2,223)
Benefits paid by the plan		-	(220)
Defined benefit obligations at December 31	**$**	**79,355**	**67,110**

3) Movements of fair value of plan assets

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

		2021	2020
Fair value of plan assets at January 1	$	37,854	36,188
Interest income		238	409
Remeasurement on the net defined benefit liabilities (assets)			
－Return on plan assets (excluding current interest expense)		436	1,065
Contributions by the employer		286	412
Benefits paid by the plan		-	(220)
Fair value of plan assets at December 31	**$**	**38,814**	**37,854**

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:

		2021	2020
Current service costs	$	95	92
Net interest expense on the net defined benefit liability		181	311
	$	**276**	**403**
Cost of revenue	$	86	145
Selling expenses		85	124
Administrative expenses		60	70
Research and development expenses		45	64
	$	**276**	**403**

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:

		2021	2020
Cumulative amount at January 1	$	31,033	29,636
Recognized during the period		11,295	1,397
Cumulative amount at December 31	$	**42,328**	**31,033**

7) Actuarial assumptions

The principal assumptions of the actuarial valuation were as follows:

	December 31, 2021	December 31, 2020
Discount rate	0.625 %	0.625 %
Future salary increases rate	4.000 %	3.000 %

The Company expects to make contribution of $276 to the defined benefit plans in the year following December 31, 2021.

The weighted average duration of the defined benefit plans is 15.27 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, 2021 and 2020.

	Increase (decrease) in present value of defined benefit obligations	
	0.25% Increase	**0.25% Decrease**
December 31, 2021		
Discount rate	(2,698)	2,809
Future salary change rate	2,670	(2,583)
December 31, 2020		
Discount rate	(2,396)	2,500
Future salary change rate	2,406	(2,315)

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 2021, 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, 2021 and 2020, the Company recognized pension expenses of $18,053 and $18,683, respectively, in relation to the defined contribution plans.

(n) Income taxes

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

		2021	2020
Current income tax expense			
Current period	$	141,764	69,376
Adjustments for prior years		(14,730)	3,984
		127,034	73,360
Deferred income tax benefit			
Origination and reversal of temporary differences		(46,247)	(3,505)
Income tax expense	**$**	**80,787**	**69,855**

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

		2021	2020
Items that will not be reclassified subsequently to profit or loss:			
Remeasurement of defined benefit plans	**$**	**2,259**	**280**

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

		2021	2020
Income before income tax	**$**	**566,575**	**360,324**
Income tax using the Company's statutory tax rate	$	113,315	72,065
Investment tax credits		(8,337)	(4,605)
Changes in unrecognized temporary differences		(6,343)	(5,688)
Prior-year adjustments		(14,730)	3,984
Surtax on undistributed earnings		1,218	3,441
Others		(4,336)	658
	$	**80,787**	**69,855**

(ii) Deferred income tax assets and liabilities

1) Unrecognized deferred income tax assets and liabilities

		December 31, 2021	December 31, 2020
Unrecognized deferred income tax assets:			
Aggregate deductible temporary differences associated with investments in subsidiaries	$	18,555	20,041
Deductible temporary differences		788	788
	$	**19,343**	**20,829**

		December 31, 2021	December 31, 2020
Unrecognized deferred income tax liabilities:			
Aggregate taxable temporary differences associated with investments in subsidiaries	$	57,898	53,041

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, 2021 and 2020, 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, 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
Balance at January 1, 2020	$	5,574	56,473	1,259	10,000	12,736	86,042
Recognized in profit or loss		(2)	4,000	(327)	-	(1,945)	1,726
Recognized in other comprehensive income		280	-	-	-	-	280
Balance at December 31, 2020	$	5,852	60,473	932	10,000	10,791	88,048

Deferred income tax liabilities:

		Others
Balance at January 1, 2021	$	-
Recognized in profit or loss		123
Balance at December 31, 2021	$	123
Balance at January 1, 2020	$	1,779
Recognized in profit or loss		(1,779)
Balance at December 31, 2020	$	-

(iii) The Company's income tax returns for the years through 2019 have been assessed by the R.O.C. income tax authorities.

(o) Capital and other equity

(i) Common stock

As of December 31, 2021 and 2020, the Company's authorized shares of common stock consisted of 200,000 thousand shares, of which 101,824 and 100,898 thousand shares, respectively, were issued. As of December 31, 2021 and 2020, as the shares of restricted stock to employees are not yet vested, the Company's outstanding shares of common stock were 100,898 thousand shares. 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.

During the shareholders' meeting on May 28, 2020, the Company's shareholders resolved to issue 1,200 thousand shares of restricted stock to employees. The Company has filed an effective registration with the Securities and Futures Bureau of the FSC for the issuance. In January 2021, the Company issued 926 thousand shares of restricted stock to employees. The effective date of the capital increase was January 6, 2021, and the related registration process has been completed.

(ii) Capital surplus

		December 31, 2021	December 31, 2020
Paid-in capital in excess of par value	$	331,707	331,707
Employee stock options		12,901	12,901
Treasury stock transactions		3,781	3,781
Restricted stock to employees		26,499	-
Changes in equity of associates accounted for using equity method		14,258	13,130
	$	**389,146**	**361,519**

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 and 2020 earnings were approved by the shareholders at the meetings on July 14, 2021 and May 28, 2020, respectively. The resolved appropriation of the dividend per share were as follows:

	2020		2019	
	Dividends per share (in dollars)	**Amount**	**Dividends per share (in dollars)**	**Amount**
Dividends per share:				
Cash dividends	$ 2.02	**205,685**	2.55	**257,289**

On February 23, 2022, the Company's Board of Directors approved the distribution of cash dividends for 2021 as follows:

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

(iv) Other equity items (net after tax)

1) Foreign currency translation differences

		2021	2020
Balance at January 1	$	(67,908)	(49,159)
Foreign exchange differences arising from translation of foreign operations		(6,458)	(18,749)
Balance at December 31	**$**	**(74,366)**	**(67,908)**

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

		2021	2020
Balance at January 1	$	(41,050)	(29,420)
Share of other comprehensive income of subsidiaries		(4)	79
Unrealized losses from investments in equity instruments measured at fair value through other comprehensive income		(10,361)	(11,709)
Balance at December 31	**$**	**(51,415)**	**(41,050)**

3) Unearned compensation cost

		2021	2020
Balance at January 1	$	-	-
Issuance of restricted stock to employees		(35,764)	-
Compensation cost arising from restricted stock issued to employees		26,823	-
Balance at December 31	**$**	**(8,941)**	**-**

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

As of December 31, 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 achivement 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:

	2021	**2020**
Balance at January 1	-	-
Granted	926	-
Balance at December 31	**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, 2021 and 2020, the compensation cost for the restricted shares of stock amounted to $26,823 and $0, respectively.

(ii) Employee compensation cost

Expense resulting from share-bsed payment transations are as follows:

	2021	**2020**
Compenstion cost from restricted stock issued to employee	**$ 26,823**	**-**

(q) Earnings per share (“EPS”)

(i) Basic earnings per share

	2021	2020
Net income attributable to shareholders of the Company	$ 485,788	290,469
Weighted-average number of ordinary shares outstanding (in thousands)	100,898	100,898
Basic earnings per share (in dollars)	$ 4.81	2.88

(ii) Diluted earnings per share

	2021	2020
Net income attributable to shareholders of the Company	$ 485,788	290,469
Weighted-average number of ordinary shares outstanding (in thousands)	100,898	100,898
Effect of dilutive potential common stock (in thousand):		
Remuneration to employees	1,430	1,035
Restricted stock to employees	726	-
Weighted-average number of ordinary shares outstanding (including effect of dilutive potential common stock)	103,054	101,933
Diluted earnings per share (in dollars)	$ 4.71	2.85

(r) Revenue from contracts with customers

(i) Disaggregation of revenue

	2021	2020
Major products:		
Flash memory cards	$ 4,441,455	3,997,657
Memory modules	3,959,289	2,885,634
Others	21,952	7,367
	$ 8,422,696	6,890,658

(ii) Contract balances

	December 31, 2021	December 31, 2020	January 1, 2020
Notes and accounts receivable (including related parties)	$ 1,308,119	804,272	882,868
Less: loss allowance	(5,148)	(8,213)	(5,293)
	$ 1,302,971	796,059	877,575

		December 31, 2021	December 31, 2020	January 1, 2020
Contract liabilties (presented under other current liabilities)	$	35,738	10,503	5,762

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, 2021 and 2020 that were included in the contract liability balances at January 1, 2021 and 2020, were $9,504 and $3,849, 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, 2021 and 2020, the Company estimated its remuneration to employees amounting to $62,103 and $33,993, respectively, and the remuneration to directors amounting to $8,926 and $5,599, 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

		2021	2020
Interest income from bank deposits	$	1,101	2,715

(ii) Other gains and losses－net

		2021	2020
Foreign currency exchange gains (losses)		5,611	(5,518)
Gain (loss) on financial assets and liabilities at fair value through profit or loss		(1,038)	6,519
Loss on disposal of property, plant and equipment		-	(102)
Impairment loss on non-financial assets		(140)	-
Others		2,422	3,810
	$	6,855	4,709

(iii) Finance costs

	2021	2020
Interest expense from bank loans	$ 2,576	2,377
Interest expense from lease liabilities	612	302
	$ 3,188	**2,679**

(u) Financial instruments

(i) Categories of financial instruments

1) Financial assets

	December 31, 2021	December 31, 2020
Financial assets at fair value through profit or loss	$ 110,748	49,354
Financial assets at fair value through other comprehensive income	25,749	36,110
Financial assets measured at amortized cost		
Cash and cash equivalents	336,246	323,768
Notes and accounts receivable (including related parties)	1,302,971	796,059
Other financial assets (including current and non-current)	91,794	600,792
Subtotal	1,731,011	1,720,619
Total	**$ 1,867,508**	**1,806,083**

2) Financial liabilities

	December 31, 2021	December 31, 2020
Financial liabilities at fair value through profit or loss	$ 133	168
Financial liabilities measured at amortized cost:		
Short-term borrowings	251,979	98,350
Notes and accounts payable (including related parties)	870,190	705,444
Other payables (including related parties)	363,883	231,117
Lease liabilities (including current and non-current)	26,796	14,999
Subtotal	1,512,848	1,049,910
Total	**$ 1,512,981**	**1,050,078**

(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, 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
Subtotal	**$ 133**	**-**	**133**	**-**	**133**

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	December 31, 2020				
		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	$ 49,121	49,121	-	-	49,121
Derivatives－foreign currency forward contracts	233	-	233	-	233
	$ 49,354	**49,121**	**233**	**-**	**49,354**
Financial assets at fair value through other comprehensive income－non-current:					
Domestic unlisted stocks	**$ 36,110**	**-**	**-**	**36,110**	**36,110**
Financial liabilities at fair value through profit or loss－current:					
Derivatives－foreign currency—forward contracts	**$ 168**	**-**	**168**	**-**	**168**

(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, 2021 and 2020.

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

	2021	2020
Balance, beginning of year	$ 36,110	41,748
Purchased	-	6,071
Losses recognized in other comprehensive income, and presented in unrealized losses on financial assets measured at fair value through other comprehensive income	(10,361)	(11,709)
Balance, end of year	**$ 25,749**	**36,110**

(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, and receivables from customers. As of December 31, 2021 and 2020, the Company’s maximum exposure to credit risk amounted to $1,867,508 and $1,806,083, respectively.

The Company maintains cash 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, 2021 and 2020, the Company has insured credit insurance that cover accounts receivable amounting to $416,487 and $349,936, 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, 2021 and 2020, the Company had unused credit facilities of $1,612,131 and $1,812,250, 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, 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)	-

		Carrying amount	Contractual cash flows	Within 1 year	More than 1 year
December 31, 2020					
Non-derivative financial liabilities:					
Short-term borrowings	$	98,350	(98,416)	(98,416)	-
Notes and accounts payable (including related parties)		705,444	(705,444)	(705,444)	-
Other payables (including related parties)		231,117	(231,117)	(231,117)	-
Lease liabilities		14,999	(15,619)	(5,870)	(9,749)
Derivative financial instruments:					
Foreign currency forward contracts:					
Inflow		-	31,240	31,240	-
Outflow		168	(31,408)	(31,408)	-

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) 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, 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

	December 31, 2020				
	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	$ 27,120	28.100	762,072	1 %	7,621
CNY	14,530	4.297	62,435	1 %	624
JPY	33,910	0.273	9,257	1 %	93
Financial liabilities					
Monetary items					
USD	22,614	28.100	635,453	1 %	6,355
CNY	33	4.297	142	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, 2021 and 2020 were $5,611 and $(5,518), 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, 2021 and 2020 would have been $2,520 and $ 984, 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, 2021	December 31, 2020
Total liabilities	$ 1,737,106	1,195,088
Total equity	$ 3,091,734	2,809,539
Liability-to-equity ratio	56.19 %	42.54 %

In 2021, the Company increased its notes and accounts payable and bank loans due to the increase of stock level. It also resulted in the increasing of liability-to-equity ratio.

(x) Investing and financing activities not affecting current cash flow

(i) For acquisition of right-of-use assets under operating lease for the years ended December 31, 2021 and 2020, please refer to note 6(h).

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

	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

	January 1, 2020	Cash flows	Non-cash changes Acquisition	December 31, 2020
Short-term borrowings	$ 74,950	23,400	-	98,350
Lease liabilities	13,431	(8,054)	9,622	14,999
	$ 88,381	15,346	9,622	113,349

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
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
Directors, general manager and vice general managers	The Company's key management personnel

(b) Significant related-party transactions

(i) Revenue

	2021	2020
Subsidiaries:		
AMA	$ 847,142	525,059
Others	1,549,527	1,146,370
The Company's key management personnel (the Company's director)	11,609	9,757
	$ 2,408,278	1,681,186

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

	2021	2020
Subsidiaries	$ 1,013	4,846
The Company's key management personnel—Phison (the Company's director)	1,154,468	1,081,670
	$ **1,155,481**	**1,086,516**

There are no significant differences between the purchase prices for related parties and those for third-party vendors. The payment terms of EOM 45 days shows no significant difference between related parties and third-party vendors.

(iii) Receivables

Account	Related-party categories	December 31, 2021	December 31, 2020
Accounts receivable from related parties	Subsidiaries:		
	AMC	$ 82,156	54,370
	AMH	49,047	19,465
	AMA	23,490	32,805
	AMK	22,545	12,593
	Others	8,369	5,054
	The Company's key management personnel (the Company's director)	2,420	799
		$ **188,027**	**125,086**

(iv) Payables

Account	Related-party categories	December 31, 2021	December 31, 2020
Accounts payable to related parties	Subsidiaries	$ 629	464
	The Company's key management personnel—Phison (the Company's director)	202,608	243,948
Other payables to related parties	Subsidiaries	1,407	1,288
	The Company's key management personnel (the Company's director)	75	561
		$ **204,719**	**246,261**

(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	2021	2020
Operating expenses	Associate	$ 50	53
	The Company's key management personnel (the Company's director)	266	776
		$ 316	**829**

(c) Compensation for key management personnel

	2021	2020
Short-term employee benefits	$ 64,842	44,769
Post-employment benefits	432	315
Share-based payments	11,623	-
	$ 76,897	**45,084**

8. Pledged assets: None

9. Significant commitments and contingencies:

As of December 31, 2021 and 2020, the Company had outstanding letters of guarantee amounting to $12,000 and $20,000, respectively, 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:

	2021			2020		
	Cost of revenue	Operating expenses	Total	Cost of revenue	Operating expenses	Total
Employee benefits:						
Salaries	143,160	398,523	541,683	139,231	320,467	459,698
Insurance	12,877	25,408	38,285	14,299	23,454	37,753
Pension	5,395	12,934	18,329	6,305	12,781	19,086
Remuneration to directors	-	14,777	14,777	-	13,599	13,599
Others	8,629	43,160	51,789	11,473	13,999	25,472
Depreciation	19,982	22,450	42,432	24,031	20,305	44,336
Amortization	2,000	9,941	11,941	1,942	11,198	13,140

For the years ended December 31, 2021 and 2020, the information on the number of employees and employee benefit expense of the Company is as follows:

	2021	2020
The number of employees	467	478
The number of non-employee directors	7	7
Average employee benefits	$ 1,413	1,151
Average employee salaries	$ 1,178	976
Average employee salaries adjustment rate	20.70 %	(1.71)%
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, 2021:

(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, 2021				Note
				Shares/ Units	Carrying Value	Percentage of Ownership	Fair value	
The Company	Fund: Jih Sun Money Market Fund	-	Financial assets at fair value through profit or loss －current	6,540	98,012	-	98,012	-
The Company	Fund: Taiwan Cooperative Bank Taiwan Money Market Fund	-	Financial assets at fair value through profit or loss －current	1,170	12,001	-	12,001	-
The Company	Stock: Formosa Golf and Country Club Corp.	-	Financial assets at fair value through other comprehensive income－non-current	3.6	9,643	0.01 %	9,643	-
The Company	Stock: OTO Photonics Inc.	-	Financial assets at fair value through other comprehensive income－non-current	3,772	16,106	12.59 %	16,106	-
AMS	Stock: Futurepath Technology (Shenzhen) co., ltd	-	Financial assets at fair value through other comprehensive income－non-current	31.5	307	0.03 %	307	-

(iv) Marketable securities for which the accumulated purchase or sale amounts for the year exceed $300 million or 20% of the paid-in capital: None

(v) Acquisition of real estate which exceeds $300 million or 20% of the paid-in capital: None

(vi) Disposal of real estate which exceeds $300 million or 20% of the paid-in capital: None

(vii) Total purchases from and sales to related parties which exceed $100 million or 20% of the paid-in capital:

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)	(847,142)	(10)%	OA30	-	-	23,490	2 %	
The Company	AMK	The Company's subsidiary	(Sales)	(187,485)	(2)%	OA30	-	-	22,545	2 %	
The Company	AMH	The Company's subsidiary	(Sales)	(662,304)	(8)%	OA30	-	-	49,047	4 %	
The Company	AMC	The Company's subsidiary	(Sales)	(615,881)	(7)%	M60	-	-	82,156	6 %	
The Company	Phison	The Company's director	Purchases	1,154,468	15 %	M45	-	-	(202,608)	(23)%	
AMA	The Company	AMA's parent company	Purchases	847,142	96 %	OA30	-	-	(23,490)	(95)%	
AMK	The Company	AMK's parent company	Purchases	187,485	100 %	OA30	-	-	(22,545)	(100)%	
AMH	The Company	AMH's parent company	Purchases	662,304	100 %	OA30	-	-	(49,047)	(100)%	
AMC	The Company	AMC's parent company	Purchases	615,881	100 %	M60	-	-	(82,156)	(100)%	

(viii) Receivables from related parties which exceed $100 million or 20% of the paid-in capital: None

(ix) Transactions about derivative instruments: Please refer to note 6(b)

(b) Information on investees:

(In Thousands of Shares)

Investor	Investee	Location	Main Businesses and Products	Original Investment Amount: December 31, 2021	Original Investment Amount: December 31, 2020	Balance as of December 31, 2021: Shares	Balance as of December 31, 2021: Percentage of Ownership	Balance as of December 31, 2021: Carrying Value	Net Income (Loss) of the Investee	Investment Income (Loss)	Note
The Company	AMA	USA	Trading of memory modules	610	610	20	100.00 %	251,082	10,822	10,822	
The Company	ACYB	British Virgin Islands	Investment and holding activity	18,542	18,542	2,636	100.00 %	41,117	7,397	7,397	
The Company	AMJ	Japan	Trading of memory modules	2,918	2,918	0.2	100.00 %	18,895	2,322	2,322	
The Company	ATPL	India	Trading of memory modules	915	915	29	100.00 %	1,383	35	35	
The Company	AMK	Hong Kong	Trading of memory modules	20,917	20,917	5,000	100.00 %	11,996	317	317	
The Company	AMH	Netherlands	Trading of memory modules	130,469	130,469	80	100.00 %	46,616	10,986	10,986	
The Company	JoiiUp	Taiwan	Cloud services and software development	7,500	7,500	750	11.48 %	1,364	(9,036)	(1,104)	

(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, 2021	Investment Flows: Outflow	Investment Flows: Inflow	Accumulated Outflow of Investment from Taiwan as of December 31, 2021	Net Income (Loss) of Investee	% of Ownership of Direct or Indirect Investment	Investment Income (Loss)	Carrying Value as of December 31, 2021	Accumulated Inward Remittance of Earnings as of December 31, 2021
Apacer Electronic (Shanghai) Co., Ltd (AMC)	Trading of memory modules	13,845 (USD500 thousand)	Type 2	13,845 (USD500 thousand)	-	-	13,845 (USD500 thousand)	7,468	100.00 %	7,468 (Note 2)	37,104	-
Shenzhen Kylinesports Technology Co. (AMS)	Trading of gaming products	20,712 (USD748 thousand)	Type 2	16,559 (USD598 thousand)	-	-	16,559 (USD598 thousand) (Note 5)	(751)	99.00 %	(744) (Note 3)	13,555	-

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$27.69
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, 2021	Investment Amounts Authorized by Investment Commission, MOEA	Upper Limit on Investment Authorized by Investment Commission, MOEA
The Company	30,404 (USD 1,098 thousand)	34,114 (USD 1,232 thousand)	1,855,040

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

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

(d) Major shareholders:

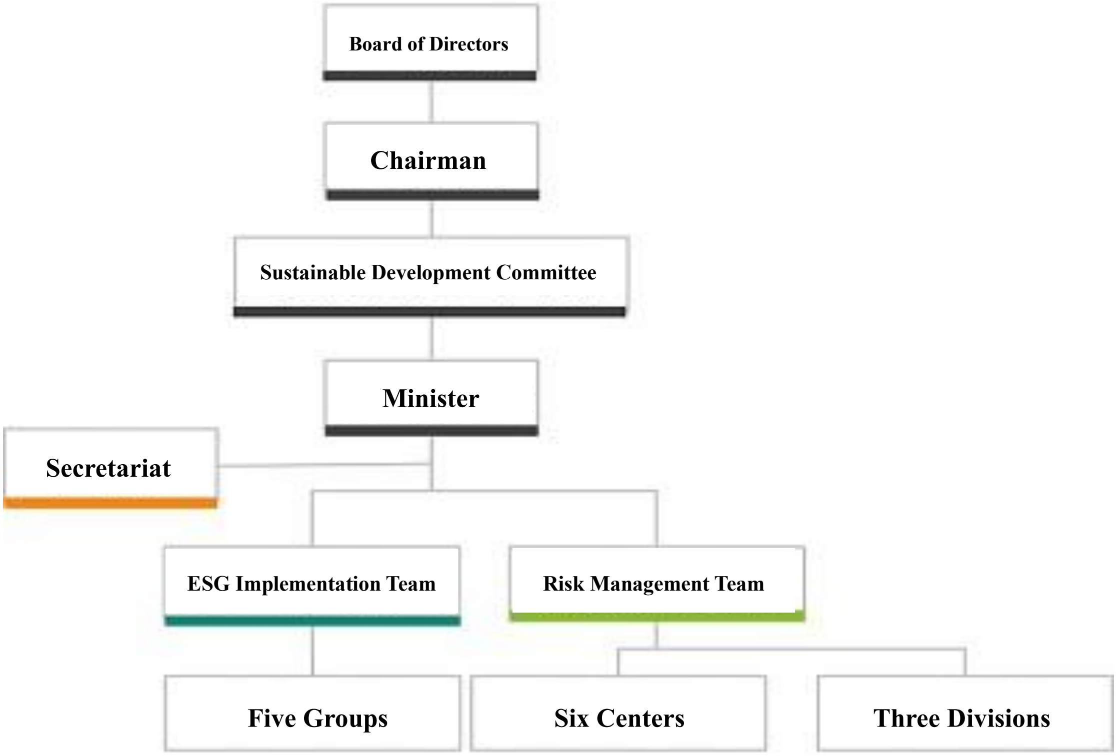
Shareholding / Major Shareholder's Name	Shares	Percentage
Phison Electronics Corporation	10,050,000	9.86 %
Teddy Lu	5,699,906	5.59 %

14. Segment information:

Please refer to the consolidated financial statements for the years ended December 31, 2021 and 2020 for disclosure of segment information.

VII. Review and analysis of the financial status and financial performance and risk issues

Risk management organization structure and authority:



- Board of Directors: The Board of Directors of the company is the highest decision maker of the company's risk management. It is responsible for approving risk management policies and related measures, supervising the implementation of risk management systems and ensuring the effectiveness of the management mechanism.
- Sustainable Development Committee: The company has established a sustainable development committee under the chairman, which is the implementation and management unit of risk management policy, and is in charge of risk management as follows:
  1. Formulate risk management policies and related measures.
  2. Implement the risk management policy approved by the Board of Directors.
  3. Review issues related to the company's risk control.
  4. Oversee overall execution and coordination of operations.
  5. Identify, prevent and monitor overall risks or major risk management issues.
  6. Report to the Board of Directors at least once a year.
- Risk Management Team: The company has established a risk management team under the sustainable development committee, which is composed of the delegates of the company's centers and divisions, and is responsible for the implementation of risk management operations. It includes the basic risk identification of each operational aspect of the company, proposes improvement strategies and control plans, and implements daily risk management operations.

1. Financial status

Unit: TWD 1,000

Item \ Year	2021	2020	Difference	
			Amount	%
Current assets	3,765,156	2,959,170	805,986	27.24
Long-term investments	27,420	37,761	(10,341)	(27.39)
Real estate, plant and equipment	861,356	871,958	(10,602)	(1.22)
Right-of-use assets.	32,455	28,684	3,771	13.15
Intangible assets	43,147	53,225	(10,078)	(18.93)
Other assets	148,534	100,301	48,233	48.09
Total assets	4,878,068	4,051,099	826,969	20.41
Current liabilities	1,713,603	1,191,101	522,502	43.87
Non-current liabilities	72,595	50,316	22,279	44.28
Total liabilities	1,786,198	1,241,417	544,781	43.88
Share capital	1,018,243	1,008,978	9,265	0.92
Capital reserve	389,146	361,519	27,627	7.64
Retained earnings	1,819,067	1,548,000	271,067	17.51
Other equities	(134,722)	(108,958)	(25,764)	23.65
Treasury shares	-	-	-	-
Equity attributed to stockholders of the company	3,091,734	2,809,539	282,195	10.04
Non-controlling interests	136	143	(7)	(4.90)
Total equity	3,091,870	2,809,682	282,188	10.04

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

1. The increase in “current assets” arose from a rise in accounts receivable and inventory levels due to the demand for purchases in response to the growth of the business.
2. The reduction in “long-term investments” resulted from increased losses on the valuation of financial assets at fair value through other comprehensive income.
3. The increase in “other assets” was due to an increase in deferred income tax.
4. The increase in “current liabilities” was caused by an increase in short-term loans and accounts payable arising from the growth of the business.
5. “Non-current liabilities” increased due to an increase in net defined benefit liability and deposits received.
6. The decrease in “other equities” arose from the recognition of exchange differences on translation of foreign operations, unrealized losses of financial assets at fair value through other comprehensive income, and employees' unearned remuneration.

2. Financial performance

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

Unit: TWD 1,000

Year / Item	2021	2020	Difference	
			Amount	%
Operating revenue	8,682,393	7,152,222	1,530,171	21.39
Gross operating profit	1,452,884	1,125,902	326,982	29.04
Operating income	573,060	345,419	227,641	65.90
Non-operating income and expenses	4,213	25,250	(21,037)	(83.31)
Net profit before tax	577,273	370,669	206,604	55.74
Net profit for the current period	485,781	290,460	195,321	67.25
Other comprehensive income for the period (net income after taxes)	(25,859)	(31,494)	5,635	(17.89)
Total consolidated income for the current period	459,922	258,966	200,956	77.60

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

1. The “operating revenue”, “gross operating profit”, “operating income”, “net profit before tax”, “net profit for the current period”, and “total consolidated income for the current period” increased because of the growth of the global market demand and price in 2021, leading to a significant increase in revenue and profits.
2. The decrease in “non-operating income and expenses” was due to no income from insurance compensation in this year.

(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, the Company expects to achieve its sales target for 2022.

3. Cash flow

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

Unit: TWD 1,000

Year / Item	2021	2020	Difference	
			Amount	%
Operating activity	(321,343)	337,211	(658,554)	195.29
Investment activity	421,572	(151,524)	573,096	(378.22)
Financing activity	(62,341)	(248,797)	186,456	(74.94)

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

1. The decrease in net cash inflow from operating activities resulted from a great increase in inventory for the current period.
2. The decrease in net cash outflow from investing activities was due to the decrease in time deposits with a term of three months or longer in the current period.
3. The decrease in net cash outflow from financing activities was due to the decrease in short-term borrowings 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	Annual net cash flow from operating activities	Annual cash inflow	Cash surplus (deficiency) amount	Remedy for cash shortage	
				Investment plan	Financial plan
650,064	489,082	(433,901)	705,245	-	-

4. Impacts on financial operations from major capital expenditures in the most recent FY: 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 2021 would decrease or increase by TWD 2,520,000.

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 to reduce the impact of exchange rate fluctuations on our company's income.

Unit: TWD 1,000; %

Item / **Year**	**2021**
Consolidated net operating income (A)	8,682,393
Consolidated net operating profit (B)	573,060
Consolidated net gains (losses) from foreign exchange (C)	4,657
(C)/(A)	0.05%
(C)/(B)	0.81%

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. The Company is not engaged in high-risk, high-leverage investments None.

B. Loans of funds, endorsements and guarantees: Our company has not lent out, endorsed, or guaranteed any third-party funding.

C. Derivative financial commodity transactions: Our transactions in derivative products are mainly hedging transactions, which are handled in accordance with the provisions regarding trading procedures for derivative financial products in the "Criteria for Handling Acquisition and Disposal of Assets".

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

A. Our research and development plan for 2022 includes the following:

(A) Technology for high speed transmission

This year, we will continue to invest in the development of industrial SSDs for PCI Express 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. More R&D resources will be invested in the development of SSD hardware, software and firmware architecture technology. We expect to invest TWD 40,000,000 in R&D for this area in 2022.

(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, hardware and firmware. 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 30,000,000 in R&D for this area in 2022.

(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 will be officially introduced this year and we will invest resources in the research, testing and development of the random dynamic memory devices of the next generation. We expect to invest TWD 10,000,000 in R&D for this area in 2022.

(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 5,000,000 in R&D for this area in 2022.

B. Estimated investments in R&D

Our R&D expenses in 2021 were TWD 138,947,000. We expect to invest TWD 156,875,000 in research and development in 2022. 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 in R&D 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 technical support.

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

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

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

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

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

(6) Impacts from changes in corporate or corporate crisis management, and response measures

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

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

(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 of concentrated procurement of or sales of goods, and response measures: None.

(10) Impacts and risks from large transfers of shares held by our company’s directors, supervisors, and large shareholders holding more than 10% of shares, and response measures: None.

(11) Impacts and risks from changes our 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 issues: None.

VIII. Special items

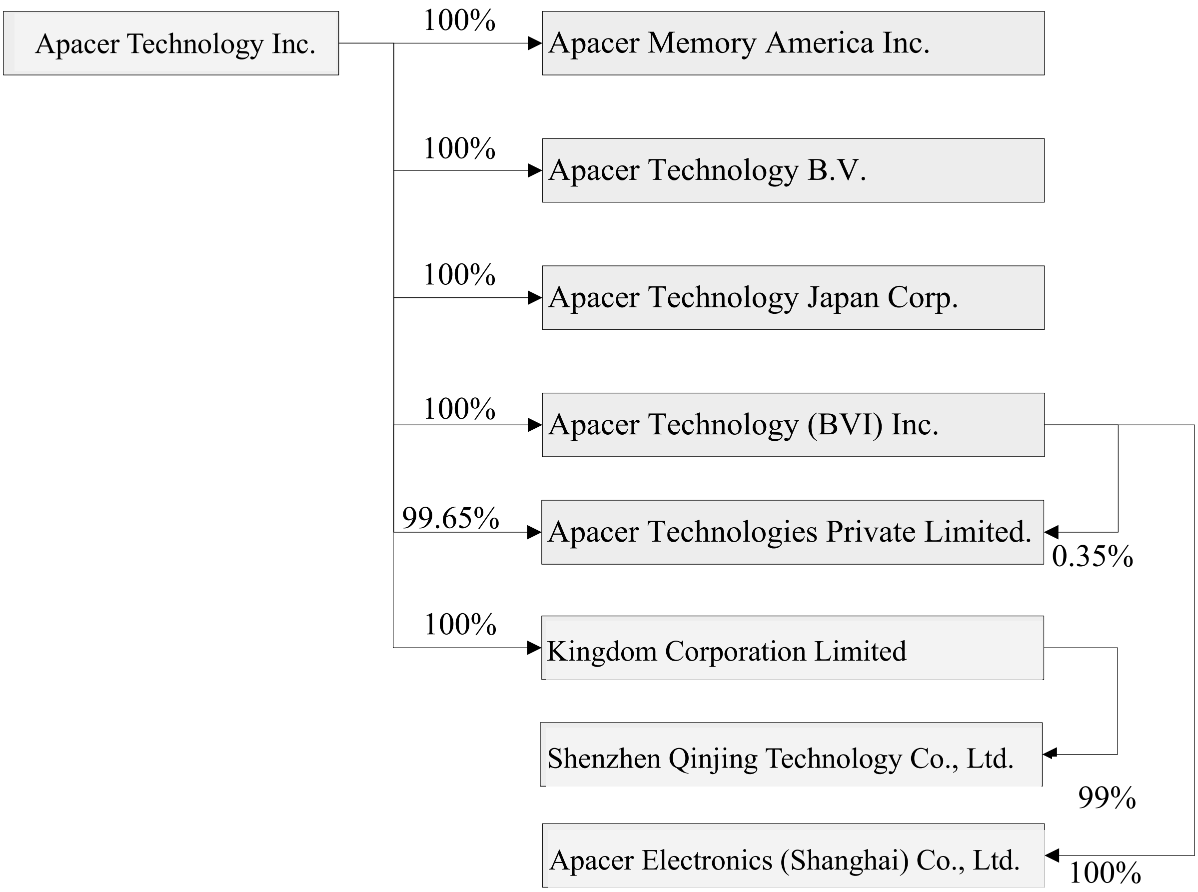
1. Information on affiliated companies

(1) Consolidated business report of affiliated companies

A. Overview of affiliated enterprises

(A) Organization chart of affiliated companies

December 31, 2021



(B) Basic information of each company

December 31, 2021

Company name	Date of establishment	Address	Actual amount in capital	Main business items
Apacer Memory America Inc.	1997.10.14	46732 Lakeview Blvd., Fremont, CA 94538	USD 20,000 (USD:TWD=1:27.690)	Sales of memory modules, small storage memory cards and consumer electronics
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=1:27.690)	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=1:0.240)	Sales of memory modules, small storage memory cards and consumer electronics
Apacer Technologies Private Limited	2007.02.06	1874, South End C Cross, 9th Block Jayanagar, Bangalore-560069, India	INR 1,387,022 (INR:TWD=1:0.372)	Sales of memory modules, small storage memory cards and consumer electronics
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=1:3.551)	Sales of memory modules, small storage memory cards and consumer electronics
Apacer Technology B.V.	1998.02.17	Science Park Eindhoven 5051 5692 EB Son, The Netherlands	USD 79,513 (USD:TWD=1: 27.690)	Sales of memory modules, small storage memory cards and consumer electronics
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: 27.690)	Sales of memory modules, small storage memory cards and consumer electronics
Shenzhen Qijing 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: 4.345)	Sales of gaming products, gaming peripherals and consumer electronics

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

(D) Operating activities of the affiliated companies

Our company's main business activities are the manufacture and sale of memory modules and small storage memory cards. The main business activities of our reinvested companies are the purchase and sale of memory modules and small storage memory cards.

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

December 31, 2021

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, Chuan Sen-Yu	5,000,000 shares	100%
Apacer Electronics (Shanghai) Co., Ltd.	Director	Apacer Technology Inc. Representatives: Chang Chia-Kun, Lai Zi-Wen, Chuan 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, Chuan Sen-Yu, Zheng Cun-Ben	Amount of contribution RMB 4,985,714	99%

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	282,355	31,273	251,082	974,614	16,979	10,822	541.11
Apacer Technology (BVI) Inc.	18,542	41,117	0	41,117	0	(66)	7,397	2.81
Apacer Technology Japan Corp.	2,918	33,183	14,288	18,895	101,519	3,410	2,322	11,607.98
Apacer Technologies Private Limited	915	1,750	367	1,383	1,436	51	35	1.21
Kingdom Corporation Limited	20,917	48,433	36,437	11,996	193,197	1,346	317	0.07
Apacer Technology B.V.	130,469	108,445	61,829	46,616	729,507	14,442	10,986	138.17
Apacer Electronics (Shanghai) Co., Ltd.	15,358	129,608	92,504	37,104	660,420	6,816	7,468	-
Shenzhen Qinjing Technology Co., Ltd.	22,975	13,727	35	13,692	0	(951)	(751)	-

(2) Consolidated financial statements of the affiliated enterprises: Please refer to pages 192 - 320.

(3) Affiliates reports: Not applicable.

2. Private equity securities transactions during last year and this year to date:

   None.

3. Shares of this (parent) company held or handled by subsidiaries:

   None.

4. Other necessary additional statements:

   None.

5. Matters that have a significant impact on shareholders' equity or the prices of securities as set forth in Subparagraph 2, Paragraph 3, Article 36 of the Securities and Exchange Act during the most recent FY as of the date on which the annual report was printed:

   None.

Apacer Technology Inc.

Chairman: Austin Chen

Date of publication: April 30, 2022

Apacer

Access the best

Apacer Technology Inc.
2021 Annual Report
Taiwan Stock Exchange Market Observation Post System: http://mops.twse.com.tw
Apacer annual report is available at https://www.apacer.com
Printed on Apr. 30th, 2022

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