



alchip



Stock Code: 3661

# **Alchip Technologies, Limited**

## **2018 Annual Report**

Taiwan Stock Exchange Market Observation Post System: <http://mops.twse.com.tw>  
Alchip Annual Report is available at: <http://www.alchip.com/>

Printed on April 23, 2019

## I. Name, Title and Contact Information for Company's Spokesperson, Acting Spokesperson, Litigious and Non-litigious Agent

Spokesperson	Deputy Spokesperson
Name : Daniel Wang Title : Chief Financial Officer Tel : +886-2-2659-9357 E-mail : IR@alchip.com	Name : Johnny Shen Title : CEO Tel : +886-2-2799-2318 E-mail : IR@alchip.com
Litigious and Non-litigious Agent	
Name : Nancy Chan Title : Financial Controller Tel : +886-2-2799-2318 E-mail : IR@alchip.com	

## II. Contact Information of Company's Headquarters, Branches and Plant

Office	Address	Tel.
<b>(I) The Company</b>		
Alchip Technologies, Ltd.	PO Box 309, Ugland House, Grand Cayman, KY-1104, Cayman Islands	886-2-2799-2318
<b>(II) Subsidiaries</b>		
1. The subsidiary in Taiwan: Alchip Technologies, Inc.	9F., No.12, Wenhua St., Neihu Dist., Taipei, Taiwan 114	886-2-2799-2318
2. The branch in Taiwan: Alchip Technologies, Ltd. Taiwan Branch	9F., No.12, Wenhua St., Neihu Dist., Taipei, Taiwan 114	886-2-2799-2318
3. The subsidiary in Hong Kong: Alchip Technologies, Ltd.	Bank of America Tower, 12 Harcourt Road Central, Hong Kong	852-2522-2922
4. The sub-subsubsidiary in Shanghai:  Alchip Technologies, Ltd. (Shanghai)	Registered Address: Room 632-19, 2 F., No. 351, Guoshoujing Rd., Zhangjiang Hi-Tech Park, Shanghai Business Address: 11F, East tower Greenland Center, 596 Middle Longhua Road, Shanghai, China 200032	86-21-5235-0999
5. The subsidiary in Japan: アルチップ・テクノロジーズ Co., Ltd. (Alchip Technologies, K.K.)	10F Shin-Yokohama Square Bldg, 2-3-12 Shin-Yokohama, Kouhoku Yokohama Kanagawa Japan, 222-0033	81-45-470-1090
6. The subsidiary in U.S.: AlChip Technologies, Inc.	2445 Augustine Dr., Suite 150, Santa Clara, CA 95054	1-669-999-1456
7. The sub-subsubsidiary in Wuxi: Alchip Technologies (Wuxi) Inc.	4F, Building A5, No.777, Jianzhuxi Road, Binhu District, Wuxi, Jiangsu, P.R.China	86-510-8512-0332
8. Alchip's BVI incorporated subsidiary: Alchip Investment Inc.	Portcullis TrustNet Chambers, 4th Floor Ellen Skelton Building, 3076 Sir Francis Drake Highway, Road Town, Tortola, British Virgin Islands VG1110	886-2-2799-2318
9. The sub-subsubsidiary in Hefei: Alchip Technologies (Hefei) Inc.	Room 605-610, Building C4, Innovation Industrial Park, No.800 West Wangjiang Road, Hefei, P.R.China	86-551-65655001

10. The sub-subsidiary in Jinan: 1F, Building B, Qilu Software Park, No.1000 ShunHua Road, High-tech Development Zone, Ji'nan City, P.R.China 86-531-89017990  
Alchip Technologies (Jinan) Inc.

### III. Members of the Board of Directors

Title	Name	Nationality	Academic Qualifications and Principal Work Experience	
Chairman	Kinying Kwan	U.S., R.O.C.	Academic Qualifications	● B.S. in Electronic Engineering, University of Illinois, U.S.
			Work Experience	● CEO of the Company ● Founder of Altius Solutions
Director	Herbert Chang	R.O.C.	Academic Qualifications	● M.S. in Management Science, National Chiao Tung University
			Work Experience	● General Manager of Mutto Optronics Corporation
Director	Benjamin Jin-Ping Ng	Australia	Academic Qualifications	● M.S. of Business Administration, Macquarie University, Australia ● B.S. of Engineering, University of New South Wales, Australia
			Work Experience	● Advisory Partner of SAIF Advisors Ltd. ● Head of Corporate Business Development of Cisco Systems
Director	Johnny Shyang-Lin Shen	U.S., R.O.C.	Academic Qualifications	● B.S. of Electronic Engineering, California State University, Los Angeles, U.S.
			Work Experience	● COO of the Company ● GM of China Business Unit and VP of SoC Design Div. of the Company
Independent Director	Brian Chiang	R.O.C.	Academic Qualifications	● B.S. of Business Administration, University of Southern California, U.S.
			Work Experience	● Managing Director of Walden International Taiwan Co., Ltd.
Independent Director	Mao-Wei Hung	R.O.C.	Academic Qualifications	● Ph.D., Finance, Northwestern University, U.S. ● M.A. in Economics, University of Wisconsin-Madison, U.S.
			Work Experience	● Professor, Department of International Business, National Taiwan University ● Chairman of Board, Taiwan Academy of Banking and Finance
Independent Director	Binfu Chuang	U.S.	Academic Qualifications	● M.S. in Electrical Engineering, Oregon State University, U.S. ● B.S., National Chiao Tung University
			Work Experience	● Director and General Manager of Shanghai SyncMOS Semiconductor Co., Ltd.

### IV. Contact information of Share Transfer Agent

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Tel: 886-2-6636-5566

Website: <https://www.ctcbank.com>

### V. Contact information of Auditing CPA

CPA Firm: Deloitte & Touche

Name of CPA: Yi-Wen Wang and Cheng-Ming Lee

Address: 20F., No. 100, Songren Rd., Xinyi District, Taipei 11073, Taiwan

Tel: 886-2-2725-9988

Website: <http://www.deloitte.com.tw>

**VI. Names of stock exchanges where foreign securities are listed and inquiry on the information of foreign securities: None.**

**VII. The Company's web address: <http://www.alchip.com>**

**Notice to readers**

***This English-version annual report is a summary translation of the Chinese version and is not an official document of the shareholders' meeting. If there is any discrepancy between the English and Chinese versions, the Chinese version shall prevail.***

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# **I. Letter to Shareholders**

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**Dear Shareholders,**

The global semiconductor market has become more competitive over the last few years, and the industry is experiencing a strong demand for high-end process application chips. Alchip has performed quite smoothly in this giant wave in 2018. Not only have we completed a great number of design projects on high performance computing with high complexity, but also received a few large orders of advanced process design such as AI application, which is expected to enter mass production in 2019. In general, Alchip was in the transition period in the first three quarters of 2018, which transitioned from consumer electronics market to HPC/AI and niche markets, which resulting in an expected slower top line performance. In addition, for the cryptocurrency design projects we received since 2017, which were affected critically than expected in the fourth quarter of 2018 due to the significant fluctuation of bitcoin price.

On the R&D front, Alchip maintains its leading position within the ASIC design service industry. About 80% revenue of Alchip came from advanced process nodes (28nm and more advanced). For business development, we kept on partnering with tier-one system customers, and completed a number of 16nm and 7nm designs in fields such as artificial intelligence, networking and high performance computer.

To analyze by sales territories, China was the first largest source of revenue. With AI and HPC products continuously entering into design and production, its proportion in 2018 has improved significantly compared to 2017. In despite of the continuous support from the system customers, the operating revenue from Japan relatively declined in the proportion of total revenue as the second largest source of revenue, which is due to the company transition period in the first three quarters and the unsteady fluctuation of bitcoin market in the fourth quarter of 2018. Benefit from the system customers, the Asia Pacific Region except for China and Japan emerges as Alchip's third largest source of revenue.

## **Financial Performance**

On New Taiwan Dollars (NTD), Alchip's 2018 total revenue came at NTD3,451M, 19.10% declining YoY from NTD4,266M in 2017. The 2018 net income was NTD257M, 16.64% YoY decreased from net income NTD308M in 2017. On US Dollars (USD) basis, the 2018 revenue came at USD114M, 18.34% declining YoY, and the net profit was USD8M, 15.86% declined YoY. For other 2018 financial figures, the gross margin was 37.43%, operating margin was 9.33%, and the ROA and ROE were 7.55% and 9.13%, respectively.

## **Technological Developments**

Given the increasing design demand for advanced process nodes from customers, Alchip had kept on investing in our design capability for advanced process nodes and customized IPs in 2018. Following the remarkable record of 16nm designs, we have successfully taped out the 7nm ASIC chips, prototyped, and began the volume production. Alchip will continuously fortify our position within the advanced process node competition arena.

## **Corporate Developments**

In order to further enhance our engineering resource and business development, Alchip continues to expand its global influence to Great China region and set up an office in Jinan, China in 2018. Along with the growth of the Greater China market demand, Alchip is always ahead of the curve, and we are devoted to develop advanced process design technology with superior solutions to the customers. With our advanced technology and professional design ability, we expect to become the first leading brand in the ASIC industry for the future.



## **Outlook for the future**

Looking into 2019, Alchip will continue to explore market opportunities through our strengths in ability of advanced process nodes design, firmed strategic alliance with major IP partners. We believe new applications such as high performance computing, artificial intelligence, automobile electronic, IoT, etc. will be our future main focus as we already saw signals of business opportunities coming. Furthermore, from the geographic prospective, we will keep focusing on Great China region and reaching out our business opportunities to North America market, where we think to post significant potential of ASIC business opportunity. Last but not least, we believe that through our core competence of providing industry leading service for advanced processing nodes, Alchip will be able to post strong revenue and profit growth in 2019, and we will continuously create value to both our customers and shareholders.

Finally, thanks once again with sincerity for sustained efforts of all employees and long-term support and encouragement from shareholders to the Company. We would like to extend our deepest gratitude to all of you !

Best wishes for good health and prosperity!



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Kinying Kwan  
Chairman

## **II. Company Profile**

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### **2.1 Date of Establishment and Company Introduction**

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Founded in British Cayman Islands on February 27, 2003 by the core technical team of the well-known System-on-Chip company from Silicon Valley under the Chairman Kinying Kwan's lead, Alchip Technologies, Limited (hereinafter referred to as the "Company" or "Alchip") is a leading provider of silicon design and manufacturing solutions for system companies developing high-complexity and high-volume application-specific integrated circuit (ASIC) and System-on-Chip (SoC) design. Headquartered in Taipei, Taiwan, it has established an ASIC manufacturing center in Hsinchu. Based on the consideration of global development policy, the Company built up subsidiaries in China, Japan, and America (hereinafter referred as the "Group"). The Company had a total of 394 employees in December 2018. The Group's management team has operated and deeply rooted in IC design services for years. The team is composed of SoC design experts from U.S. Silicon Valley and Japan with an average of over 20 years of management experience in the semiconductor industry and their capability for high-end process and chip design better than other competitors' in the industry. In just three years after its establishment, the Company had completed many ASIC design cases from 0.13um down to 65nm and put into mass production. In 2009, it started mass-production of 40 nm design cases for customers. Stepped into 28nm design cases in 2013, it began offering customers the latest 16nm process design service in 2014. The Company completed the 14nm design case and had wafer start successfully in September 2015. Moreover, several 28nm and 16nm design of super computer cases were completed in 2016 and 2017. At the end of 2018, Alchip has completed, prototyped, and began the volume production of a few 7nm design of AI and HPC cases.

Alchip focuses on ASIC and SoC solutions for deep submicron process (28nm and below). The goal is to help system customers complete low-cost and high-complexity chip design in the shortest time and to speed up the time to market for products of our customers. The Company has completed more than 400 design cases of high-end process SoC since its establishment. The three products application fields are AI/HPC/communication network equipment, other consumption electronic products (high definition television, digital cameras, entertainment systems, mobile broadband, etc.) as well as niche products (medical devices, monitoring systems, etc.). Alchip creates impressive results in the application fields as described above, which makes it the first-choice IC design partner among many world-class system manufacturers.

## 2.2 Company Milestones

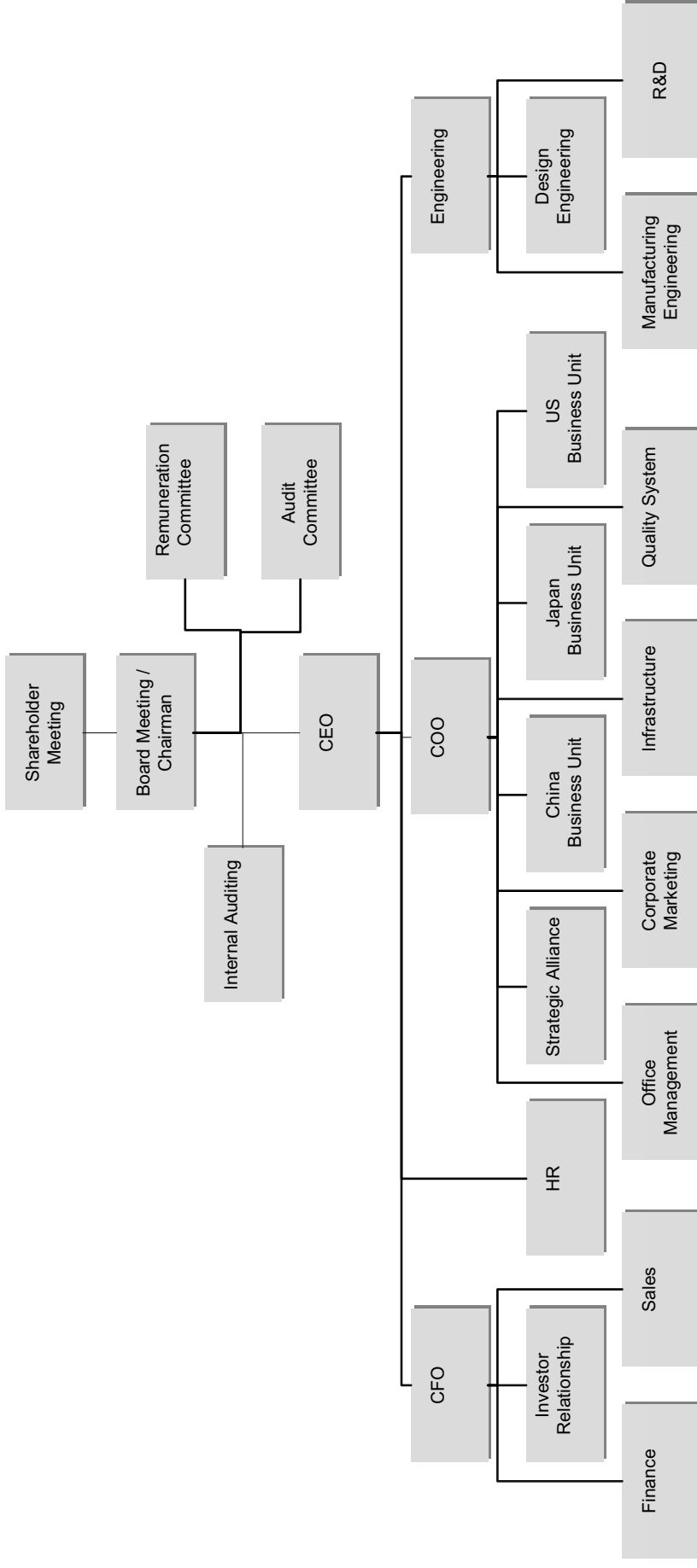
Aug. 2002	The subsidiary was established in Hong Kong.
Sep. 2002	The subsidiary was established in Shanghai.
Feb. 2003	Established an exempted company in the Cayman Islands.
Apr. 2003	Alchip Technologies (Cayman) invested in the subsidiaries in Hong Kong and Shanghai through share exchange.
May 2003	The subsidiary was established in U.S.
Aug. 2003	The first 0.13 um chip design was completed.
Feb. 2004	The subsidiary was established in Japan.
Jul. 2004	Joined the TSMC's Design Center Alliance (DCA).
Sep. 2004	Obtained the order for 0.13 um, 16M gate design from Japan's big firm M Company.
Nov. 2004	Completed the first SoC design for 90 nm, 6M gate high-end consumer electronics, and entered mass production in the second half of 2005.
Jan. 2005	The subsidiary was established in Taiwan.
Apr. 2005	Won the order for 90 nm, 500MHz high-speed calculation SoC design and became the first product across the globe to enter 90G mass production at TSMC.
Aug. 2005	The monthly shipment reached 1 million units of System on Chip (SoC).
Jun. 2006	Developed the 65 nm ARM 1176 embedded multi-core application processor.
Sep. 2006	Won the order for digital cameras SoC design from Japan's system big firm.
Nov. 2006	Passed ISO9001 certification.
Dec. 2006	The monthly shipment reached 2 million units of SoC.
Feb. 2007	Won the order for 65 nm SoC design.
May 2007	Won the order for HDTV SoC design from Japan's system big firm.
Jun. 2007	The monthly shipment reached 2.5 million units of SoC.
Jul. 2007	Adopted the Verigy V93000 Pin-Scale 800 system as its new-generation chip testing machine.
Jan. 2008	Won the order for mobile communication devices SoC design from a system big firm.
Feb. 2008	Got ARM authorization.
Mar. 2008	Won the order for digital TV SoC design from Japan's system big firm.
Mar. 2008	Joined the Cadence (Power Forward Initiative, PFI) Alliance.
Apr. 2008	Joined the ARM Connected Community to become an ARM partner.
May 2008	Became a partner of packaging technology with SONY Semiconductor Group.
Jun. 2008	Alchip was named as the "China's 10 Best Service IC Design House" by 2008 "Electronic Engineering Times" .
Aug. 2008	Adopted the Synopsys Eclypse's low-power design solutions.
Oct. 2008	Mass-produced 65 nm turnkey solution.
Nov. 2008	Won the first 65 nm design case for turnkey solution.
Dec. 2008	Alchip was awarded the special honor to be a "Green Partner" of a Japan's system big firm.
Dec. 2008	Set up heat flow and automated sorting machine.
Feb. 2009	Took part in the ebeam Initiative.
Apr. 2009	Alchip was elected to one of TSMC's global top 9 members of VCA.
Dec. 2009	The Company mass-produced 55 nm turnkey solution.
Dec. 2009	Completed the 40 nm design case for Mobile Game of a system big firm.
Mar. 2010	The monthly shipment reached 2.5 million units of SoC.
Oct. 2010	Completed the 32 nm application design case for HDTV of a system big firm.
Dec. 2010	The accumulated shipment of 55 nm design cases exceeded 10 million units of SoC.
Jan. 2011	Set up a UF3000 Wafer Prober.
Mar. 2011	Completed the 55 nm application design case for Tablet PC.
Apr. 2011	The accumulated shipment of 55 nm design cases exceeded 18 million units of SoC.
Jul. 2011	Alchip's Headquarters moved to Solar Technology Square, Taipei Neihu Technology Park.
Sep. 2011	Completed the 40 nm design case for imaging equipment.
Dec. 2011	Passed ISO 9001 extended authentication.
Feb. 2012	Gained the special honor to be a "2011 Best Supplier of the Year Award" of a Japan's big firm.
Mar. 2012	Won the order for 28 nm SoC design.
May 2012	Alchip's shipments in cooperation with ASE Group hit 50 million units of SoC.
Aug. 2012	The subsidiary was established in Wuxi China.
Sep. 2012	Completed the 28 nm design case for Mobile Game of a system big firm.
Dec. 2012	Alchip was awarded the special honor to be the Deloitte Technology Fast 500 Asia Pacific.
Dec. 2012	The subsidiary in Japan passed ISO9001 certification.

Jun. 2013	Won the No. 1 in the annual evaluation on partners of a Japan's big firm.
Jul. 2013	Completed the 28 nm design case for Bitcoin mining machine.
Aug. 2013	Completed the 40 nm design case for high-efficiency imaging equipment.
Sep. 2013	Completed the 28 nm design case for processor (supercomputer).
Nov. 2013	Passed ISO9001 certification.
Feb. 2014	Completed the 20 nm design case for Bitcoin mining machine.
May 2014	Completed the 28 nm design case for medical device of a Japan's big firm.
Jun. 2014	Won the No. 1 in the annual evaluation on partners of a Japan's big firm.
Jun. 2014	Completed the 28 nm design case for Litecoin mining machine.
Sep. 2014	Completed the 28 nm design case for entertainment machine of a Japan's big firm.
Oct. 2014	The Company's shares were publicly listed on the Taiwan Stock Exchange.
Jan. 2015	Alchip's BVI incorporated subsidiary and Alchip's Taiwan Branch were established.
Feb. 2015	Completed the 16 nm design case for Bitcoin mining machine.
Jul. 2015	Completed the 28 nm design case for high-efficiency imaging equipment of a Korea's firm.
Sep. 2015	Completed the 14 nm design case for Bitcoin mining machine.
Feb. 2016	Completed the 28 nm design case for imaging equipment of a Japan's big firm.
Jul. 2016	Completed the 28 nm design case for networking equipment of a China's big firm.
Oct. 2016	The subsidiary was established in Hefei China.
Dec. 2016	Completed the 16 nm design case for HPC equipment of a Japan's big firm.
Jan. 2017	Completed the 16 nm design case for networking equipment of a China's big firm.
Feb. 2017	Completed the 16 nm design case for high performance computer of a China's big firm.
Aug. 2017	The office was established in Guangzhou China.
Jan. 2018	Completed 7nm SoC Design for Bitcoin Mining Machines.
Mar. 2018	Completed 7nm SoC Design for AI Application.
Apr. 2018	The subsidiary was established in Jinan China.

# III. Corporate Governance Report

## 3.1 Organization

### 3.1.1 Organizational chart



### 3.1.2 Major corporate functions

Department Name	Responsibilities
Finance	Responsible for the Company's fund allocation and accounting treatments.
Investor Relationship	<ol style="list-style-type: none"> <li>1. Handling all matters relating to the Taiwan Stock Exchange.</li> <li>2. Make routine communications with investors (natural persons and juridical persons).</li> <li>3. Hold Investment Conferences for potential investors.</li> <li>4. Invite investors to participate in negotiation conferences.</li> </ol>
Strategy Alliance	<ol style="list-style-type: none"> <li>1. Develop and maintain partnerships with strategic suppliers.</li> <li>2. Negotiate the target price with suppliers to provide pre-sales support for relevant departments.</li> <li>3. Develop new suppliers or introduce competitive / high-end technologies from current suppliers to achieve the cost-effectiveness.</li> <li>4. Develop and implement all procurement policies and ensure efficient operations of procurement and organizational interests.</li> </ol>
Corporate Marketing	Responsible for all matters relating to the Company's global marketing.
Design Engineering	Complete the design realization from RTL or netlist to GDSII for customers.
R&D	<ol style="list-style-type: none"> <li>1. Provide design SOP, flow &amp; methodology.</li> <li>2. Circuit &amp; customization.</li> <li>3. Develop analog/mixed-signal silicon intellectual property.</li> <li>4. Provide customized circuit design services and technical support for business units.</li> </ol>
Manufacturing Engineering	<ol style="list-style-type: none"> <li>1. Develop and complete R&amp;D direction and objectives of the Company's production technologies.</li> <li>2. Provide advanced testing and packaging and solutions for product / component engineering.</li> </ol>
Japan Business Unit	Japan Business development, customer services and project management of business units.
US Business Unit	US Business development, customer services and project management of business units.
China Business Unit	China Business development, customer services and project management of business units.
Sales	Business development and customer services.
Quality System.	Responsible for the planning, implementation and management of the Company's quality policy.
Infrastructure	Responsible for the planning, implementation and management of information operations.
Internal Auditing.	Assist the Board of Directors, CEO, and management in the examination and assessment for the internal control system, measure the efficiency and effectiveness of operations, and provide timely proposals for improvement as the basis for amendment on the internal control systems so as to ensure its sustainable and effective operation.
Human Resources Management	Human Resources management and development.
Office Management	Control the whole administrative management such as the Company's administration & general affairs, and safety & hygiene.

### 3.2 Information on the Company's Directors, Supervisors, General Managers, Vice Presidents, Deputy Managers and Heads of All the Company's Divisions and Branches

#### 3.2.1 Information on Directors

April 23, 2019

Title	Nationality	Name	Gender	Date Elected	Term of Office	Date of First Elected	Shareholding when Elected		Current Shareholding		Spouse & Minor Shareholding		Shareholding by Nominee Arrangement		Academic Qualifications & Major Experience	Other Position	Executives, Directors or Supervisors who are spouses or within two degrees of kinship		
							Shares	%	Shares	%	Shares	%	Shares	%			Title	Name Relation	
Chairman	U.S.A, R.O.C.	Kinying Kwan	Male	06/24/2016	3	02/27/2003	680,000	1.10%	680,000	1.13%	0	0%	0	0%	<ul style="list-style-type: none"> <li>■ B.S. in Electronic Engineering, University of Illinois, U.S.</li> <li>■ CEO of the Company</li> <li>■ Founder of Altus Solutions</li> </ul>	<ul style="list-style-type: none"> <li>■ Director of the Company's subsidiary in Taiwan</li> <li>■ Director of the Company's subsidiary in Japan</li> <li>■ Director of the Company's subsidiary in U.S.</li> <li>■ Director of the Company's subsidiary in Hong Kong</li> </ul>			
Director	AUS.	Bejamin Jin-Ping Ng	Male	06/24/2016	3	04/27/2007	100,000	0.16%	51,000	0.08%	0	0%	0	0%	<ul style="list-style-type: none"> <li>■ M.S. in Business Administration, Macquarie University, Australia</li> <li>■ B.S. in Engineering, University of New South Wales, Australia</li> <li>■ Head of Corporate Business Development of Cisco Systems</li> </ul>	<ul style="list-style-type: none"> <li>■ Director of Beijing Rising Technology Co., Ltd.</li> <li>■ Director of Natural Food Ltd.</li> <li>■ Director of NTS International Holding Ltd.</li> <li>■ Director of LBS Advisory Limited</li> <li>■ Director of King of Gold Group Co. Ltd</li> <li>■ Director of L plus H Fashion Limited</li> <li>■ Director of L plus H Community Interest Company Limited</li> <li>■ Advisory Partner of SAIF Advisors Ltd.</li> </ul>			







Independent Director	R.O.C.	Mao-Wei Hung	Male	06/24/2016	3	11/05/2010	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	Work Experience:	Academic Qualifications: <ul style="list-style-type: none"> <li>■ Ph.D., Finance, Northwestern University, U.S.</li> <li>■ M.A. in Economics, University of Wisconsin-Madison, U.S.</li> <li>■ B.A. in Economics, National Taiwan University</li> <li>■ Professor, Department of International Business, National Taiwan University</li> <li>■ Chairman of Director, Taiwan Academy of Banking and Finance</li> </ul>	<ul style="list-style-type: none"> <li>■ Professor of International Business National Taiwan University</li> <li>■ Independent Director of Muto Optronics Corporation</li> <li>■ Independent Director of Fubon Securities Co., Ltd.</li> </ul>	None	None	None	None
Independent Director	R.O.C.	Brian Chiang	Male	06/24/2016	3	11/05/2011	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	Work Experience:	Academic Qualifications: <ul style="list-style-type: none"> <li>■ B.S. in Business Administration, Southern California, U.S.</li> <li>■ Managing Director of Walden International Taiwan Co., Ltd.</li> </ul>	<ul style="list-style-type: none"> <li>■ Managing Director of Walden International Taiwan Co., Ltd.</li> </ul>	None	None	None	None

Independent Director	U.S.A, R.O.C.	Binfu Chuang	Male	06/24/2016	3	11/25/2010	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	Academic Qualifications: ■M.S., Oregon State University, U.S. ■B.S., National Chiao Tung University	Work Experience: ■Director and General Manager of Shanghai SyncMOS Semiconductor Co., Ltd.	None	None	None
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### Professional qualifications and independence analysis of Directors

April 23, 2019

Criteria	Meet One of the Following Professional Qualification Requirements, Together with at Least Five Years Work Experience	Independence Criteria(Note)										Number of Other Taiwanese Public Companies Concurrently Serving as an Independent Director													
		1	2	3	4	5	6	7	8	9	10														
Name	An Instructor or Higher Position in a Department of Commerce, Law, Finance, Accounting, or Other Academic Department Related to the Business Needs of the Company in a Public or Private Junior College, College or University																								
Kinying Kwan																									
Herbert Chang																									
Benjamin Jin-Ping Ng																									
Johnny Shyang-Lin Shen																									
Mao-Wei Hung																									
Brian Chiang																									
Binfu Chuang																									

Note : Please tick the corresponding boxes that apply to the directors or supervisors during the two years prior to being elected or during the term of office.

1. Not an employee of the Company or any of its affiliates.
2. Not a director or supervisor of the Company or any of its affiliates. (However, if the person is an independent director of the company, its parent company, or any subsidiary, as appointed in accordance with the Act or with the laws of the country of the parent or subsidiary, it doesn't apply.)
3. Not a natural-person shareholder who holds shares, together with those held by the person's spouse, minor children, or held by the person under others' names, in an aggregate amount of 1% or more of the total number of outstanding shares of the Company or ranking in the top 10 in holdings.
4. Not a spouse, relative within the second degree of kinship, or lineal relative within the third degree of kinship, of any of the persons in the preceding three subparagraphs.
5. Not a director, supervisor, or employee of a corporate shareholder who directly holds 5% or more of the total number of outstanding shares of the Company or who holds shares ranking in the top five holdings.
6. Not a director, supervisor, officer, or shareholder holding 5% or more of the shares, of a specified company or institution which has a financial or business relationship with the Company.
7. Not a professional individual who is an owner, partner, director, supervisor, or officer of a sole proprietorship, partnership, company, or institution that provides commercial, legal, financial, accounting services or consultation to the Company or to any affiliate of the Company, or a spouse thereof. These restrictions do not apply to any member of the remuneration committee who exercises powers pursuant to Article 7 of the "Regulations Governing the Establishment and Exercise of Powers of Remuneration Committees of Companies whose Stock is Listed on the TWSE or Traded on the GTSM".
8. Not having a marital relationship, or a relative within the second degree of kinship to any other director of the Company.
9. Not been a person of any conditions defined in Article 30 of the Company Law.
10. Not a governmental, juridical person or its representative as defined in Article 27 of the Company Law.

### 3.2.2 Inforamtion of General Managers, VPs, Deputy General Managers and Heads of All the Company's Divisions and Branches

April 23, 2019

Title	Nationality	Name	Gender	Date of Inauguration	Shareholding		Spouse & Minor Shareholding		Shareholding by Nominee Arrangement		Academic Qualifications & Major Experience	Position(s) Held Concurrently in any Other Company	With Spouse or Relative Within the Second Degree of Kinship who is a Managerial Officer		
					Shares	Holding Percentage	Shares	Holding Percentage	Shares	Holding Percentage			Title	Name	Relation
CEO	U.S., R.O.C.	Johnny Shyang-Lin Shen	Male	01/01/2010	1,041,652	1.73%	0	0%	0	0%	Academic qualifications: <ul style="list-style-type: none"> <li>■ B.S. in Electronic Engineering, California State University, Los Angeles, U.S.</li> <li>Work experience:</li> <li>■ COO of the Company</li> <li>■ GM of China Business Unit and VP of SoC Design Div., the Company</li> </ul>	<ul style="list-style-type: none"> <li>■ Director and GM of the Company's subsidiary in Taiwan</li> <li>■ Managerial Officer of the Company's branch in Taiwan</li> <li>■ Supervisor of the Company's sub-subsiary in Wuxi</li> <li>■ Supervisor of the Company's sub-subsiary in Hefei</li> <li>■ Supervisor of the Company's sub-subsiary in Jinan</li> </ul>	None	None	None
COO	China	Jacky Ni (Note 1)	Male	11/11/2016	-	-	-	-	-	-	-	-	-	-	-
Sales VP of Japan Business Unit	Japan	Kozo Fujita (Note 2)	Male	08/15/2012	-	-	-	-	-	-	-	-	-	-	-
GM of Japan Business Unit	Japan	Junichiro Hosaka	Male	07/02/2009	40,000	0.07%	0	0%	0	0%	Academic qualifications: <ul style="list-style-type: none"> <li>■ B.A. in Economics, YOKOHAMA National University</li> <li>Work experience:</li> <li>■ Chief Financial Officer of the Company</li> <li>■ Chief Financial Officer of Inno Micro Corporation</li> <li>■ General Manager of FOI Corporation</li> <li>■ Manager of Veristy Design KK</li> <li>■ Manager of Candence Design Systems</li> </ul>	<ul style="list-style-type: none"> <li>■ Director of the Company's subsidiary in Japan</li> </ul>	None	None	None
GM of US Business Unit	Japan	Hiroyuki Nagashima	Male	03/15/2019	0	0%	0	0%	0	0%	Academic qualifications: <ul style="list-style-type: none"> <li>■ B.S in Computer Science ,Tokyo University of Science</li> </ul>	None	None	None	None

Title	Nationality	Name	Gender	Date of Inauguration	Shareholding		Spouse & Minor Shareholding		Shareholding by Nominee Arrangement		Academic Qualifications & Major Experience	Position(s) Held Concurrently in any Other Company	With Spouse or Relative Within the Second Degree of Kinship who is a Managerial Officer		
					Shares	Holding Percentage	Shares	Holding Percentage	Shares	Holding Percentage			Title	Name	Relation
											<p>Work experience:</p> <ul style="list-style-type: none"> <li>■ GM of Japan Business Unit, the Company</li> <li>■ Senior Manager of Cadence Design System</li> <li>■ Sr. Manager of Simplex Solutions</li> </ul>				
GM of China Business Unit	R.O.C.	Andy Lin	Male	11/11/2016	109,167	0.18%	0	0%	0	0%	<p>Academic qualifications:</p> <ul style="list-style-type: none"> <li>■ MBA, University of Oxford</li> <li>■ B.S. in Business Administration, National Taiwan University</li> </ul> <p>Work experience:</p> <ul style="list-style-type: none"> <li>■ VP of China Business Unit, the Company</li> <li>■ Sales Manager of Logitech International S.A.</li> </ul>	<ul style="list-style-type: none"> <li>■ Director and GM of the Company's sub-sub-sidiary in Wuxi</li> <li>■ Director and GM of the Company's sub-sub-sidiary in Hefei</li> <li>■ Director and GM of the Company's sub-sub-sidiary in Jinan</li> <li>■ GM of the Company's subsidiary in Shanghai</li> </ul>	None	None	None
Sr. VP of Design Engineering	R.O.C.	Leo Cheng	Male	08/15/2012	49,026	0.08%	0	0%	0	0%	<p>Academic qualifications:</p> <ul style="list-style-type: none"> <li>■ M.S. in Electronic Engineering, University of Southern California, U.S.</li> </ul> <p>Work experience:</p> <ul style="list-style-type: none"> <li>■ Director, Design Engineering Div. of the Company</li> <li>■ Senior Engineer of Cirrus Logic Inc.</li> </ul>	<ul style="list-style-type: none"> <li>■ Director of the Company's sub-sub-sidiary in Wuxi</li> <li>■ Director of the Company's sub-sub-sidiary in Hefei</li> <li>■ Director of the Company's sub-sub-sidiary in Jinan</li> </ul>	None	None	None
Sales VP	R.O.C.	Robert Chang	Male	11/03/2017	10,000	0.02%	0	0%	0	0%	<p>Academic qualifications:</p> <ul style="list-style-type: none"> <li>■ B.S. in Business Administration, Soochow University</li> </ul> <p>Work experience:</p> <ul style="list-style-type: none"> <li>■ AP BU Director of the Company</li> <li>■ Sales Manager, Formosa Advanced Technologies, Co., LTD.</li> </ul>	None	None	None	None
CFO	R.O.C.	Daniel Wang	Male	12/29/2011	50,000	0.08%	0	0%	0	0%	<p>Academic qualifications:</p> <ul style="list-style-type: none"> <li>■ MBA of Baruch College-The City University of New York,</li> </ul>	<ul style="list-style-type: none"> <li>■ Director of Alchip's BVI incorporated subsidiary</li> <li>■ Director of the Company's sub-sub-sidiary in Wuxi</li> </ul>	None	None	None

Title	Nationality	Name	Gender	Date of Inauguration	Shareholding		Spouse & Minor Shareholding		Shareholding by Nominee Arrangement		Academic Qualifications & Major Experience	Position(s) Held Concurrently in any Other Company	With Spouse or Relative Within the Second Degree of Kinship who is a Managerial Officer		
					Shares	Holding Percentage	Shares	Holding Percentage	Shares	Holding Percentage			Title	Name	Relation
											U.S. Work experience: ■ Representative of Fubon Securities Co., Ltd. Shanghai Representative Office	■ Director of the Company's sub-subsiary in Hefei ■ Director of the Company's sub-subsiary in Jnan			
Financial Controller	R.O.C.	Nancy Chan	Female	09/18/2004	37,500	0.06%	0	0%	0	0%	Academic qualifications: ■ M.S. in Risk Management, University of Reading, United Kingdom ■ B.S. in Accounting, National Taiwan University Work experience: ■ Deputy Manager of Deloitte & Touche	■ Director of Alchip's BVI incorporated subsidiary	None	None	None
Strategy Alliance	R.O.C.	Peter Teng	Male	03/15/2019	500	0.00%	0	0%	0	0%	Academic qualifications: ■ B.S in Computer Science, University of Toronto Work experience: ■ Sr. Director of Strategic Alliance of the Company ■ IBU operation Director of the Company	None	None	None	None

Note 1 : Mr. Jacky Ni resigned from COO on March 15, 2019.

Note 2 : Mr. Kozo Fujita resigned from insider on March 15, 2019.

### 3.2.3 Remuneration of Directors, Supervisors, General Managers and Vice Presidents in the most recent year

#### A. Remuneration of Directors

Unit : NT\$ thousand

Title	Name	Remuneration				Relevant Remuneration Received by Directors Who are Also Employees				Ratio of Total Compensation (A+B+C+D+E+F+G) to Net Income (%) (Note2)		Compensation Paid to Directors from an Invested Company Other than the Company's Subsidiary
		Base Compensation (A)	Severance Pay (B)	Bonus to Directors (C) (Note 1)	Allowances (D)	Ratio of Total Remuneration (A+B+C+D) to Net Income (%)	Salary, Bonuses, and Allowances (E)	Severance Pay (F)	Profit Sharing- Employee Bonus (G) (Note2)	The company	Companies in the consolidated financial statements	
Chairman	Kinying Kwan	7,027	0	1,062	0	3.14%	0	0	0	0	3.14%	N/A
Director	Herbert Chang	0	0	1,062	543	0.62%	543	0	0	0	0.62%	N/A
Director	Benjamin Jin-Ping Ng	0	0	1,062	543	0.62%	543	0	0	0	0.62%	N/A
Director	Johnny Shyang-Lin Shen	0	0	1,062	0	0.41%	0	0	0	12,385	5.23%	N/A
Independent Director	Mao-Wei Hung	0	0	1,062	543	0.62%	543	0	0	0	0.62%	N/A
Independent Director	Brian Chiang	0	0	1,062	543	0.62%	543	0	0	0	0.62%	N/A
Independent Director	Binfu Chuang	0	0	1,062	543	0.62%	543	0	0	0	0.62%	N/A

Note 1 : On March 15, 2019, the Board of the Company approved that compensation distribution to directors is NT\$7,435 thousand.

Note 2 : On March 15, 2019 the Board of the Company approved that compensation distribution to employees is NT\$29,739 thousand. The detail of distribution has not been resolved.



Range of Remuneration	Name of Directors			
	Total of (A+B+C+D)		Companies in the Consolidated Financial Statements	Total of (A+B+C+D+E+F+G)
	The Company	Companies in the Consolidated Financial Statements		
Under NT\$ 2,000,000	Herbert Chang, Benjamin Jin-Ping Ng, Mao-Wei Hung, Brian Chiang, Binfu Chuang, Johnny Shyang-Lin Shen	Herbert Chang, Benjamin Jin-Ping Ng, Mao-Wei Hung, Brian Chiang, Binfu Chuang, Johnny Shyang-Lin Shen	Herbert Chang, Benjamin Jin-Ping Ng, Mao-Wei Hung, Brian Chiang, Binfu Chuang	Herbert Chang, Benjamin Jin-Ping Ng, Mao-Wei Hung, Brian Chiang, Binfu Chuang
NT\$2,000,001 ~ NT\$5,000,000	-	-	-	-
NT\$5,000,001 ~ NT\$10,000,000	Kinying Kwan	Kinying Kwan	Kinying Kwan	Kinying Kwan
NT\$10,000,001 ~ NT\$15,000,000	-	-	Johnny Shyang-Lin Shen	Johnny Shyang-Lin Shen
NT\$15,000,001 ~ NT\$30,000,000	-	-	-	-
NT\$30,000,001 ~ NT\$50,000,000	-	-	-	-
NT\$50,000,001 ~ NT\$100,000,000	-	-	-	-
Over NT\$100,000,000	-	-	-	-
Total	7	7	7	7

**B. Remuneration to Supervisors:** It is not applicable as the Company does not have supervisors.

**C. Remuneration to General Managers and Vice Presidents**

Unit : NT\$ thousand

Title	Name	Salary(A)		Severance Pay and Pensions (B)		Bonuses and Allowance (C)		Compensation to Employees(D) (Note1)				Ratio of total compensation (A+B+C+D) to net income after tax(%)		Compensation Received from Non-consolidated subsidiary		
		The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements	The Company	The Company	Companies in the Consolidated Financial Statements	The Company	Cash	Stock		The Company	Companies in the Consolidated Financial Statements
CEO	Johnny Shyang-Lin Shen	68,240	68,240	985	985	0	0	0	0	0	0	0	26.90%	26.90%	N/A	
COO	Jacky Ni (Note 2)															
Sales VP of Japan Business Unit	Kozo Fujita (Note 3)															
GM of Japan Business Unit	Junichiro Hosaka															
GM of China Business Unit	Andy Lin	68,240	68,240	985	985	0	0	0	0	0	0	0	26.90%	26.90%	N/A	
Sr. VP of Design Engineering	Leo Cheng															
Sales VP	Robert Chang															
CFO	Daniel Wang															
Financial Controller	Nancy Chan															

Note 1 : On March 15, 2019, the Board of the Company approved that compensation distribution to employees is NT\$29,739 thousand. The detail of distribution has not been resolved.

Note 2 : Mr. Jacky Ni resigned from COO on March 15, 2019.

Note 3 : Mr. Kozo Fujita resigned from insider on March 15, 2019.

### Remuneration Scale Table

Remuneration Scale to the Company's General Managers and VPs	Name of General Managers and VPs	
	The company	Companies in the Consolidated Financial Statements
Under NT\$ 2,000,000	-	-
NT\$2,000,000 (inclusive) ~ NT\$5,000,000 (exclusive)	Nancy Chan	Nancy Chan
NT\$5,000,000 (inclusive) ~ NT\$10,000,000 (exclusive)	Daniel Wang / Leo Cheng / Kozo Fujita (Note 2) /Junichiro Hosaka /Andy Lin/ Robert Chang	Daniel Wang / Leo Cheng / Kozo Fujita (Note 2) / Junichiro Hosaka /Andy Lin/ Robert Chang
NT\$10,000,000 (inclusive) ~ NT\$15,000,000 (exclusive)	Johnny Shyang-Lin Shen / Jacky Ni (Note 1)	Johnny Shyang-Lin Shen /Jacky Ni (Note 1)
NT\$15,000,000 (inclusive) ~ NT\$30,000,000 (exclusive)	-	-
NT\$30,000,000 (inclusive) ~ NT\$50,000,000 (exclusive)	-	-
NT\$50,000,000 (inclusive) ~ NT\$100,000,000 (exclusive)	-	-
Over NT\$100,000,000	-	-
Total	9	9

Note 1 : Mr. Jacky Ni resigned from COO on March 15, 2019.

Note 2 : Mr. Kozo Fujita resigned from insider on March 15, 2019.

**D. Employees' bonus paid to Managerial Officers**

December 31, 2018; Unit: NT\$ thousand

	Title	Name	Stock Dividend(Note1)	Cash Dividend(Note1)	Total	Percentage of the Total Amount to the Net Income After Tax (%)
Executive Officers	CEO	Johnny Shyang-Lin Shen				
	COO	Jacky Ni (Note 2)				
	Sales VP of Japan Business Unit	Kozo Fujita (Note 3)				
	GM of Japan Business Unit	Junichiro Hosaka				
	GM of China	Andy Lin	0	0	0	0%
	Sr. VP of Design Engineering	Leo Cheng				
	Sales VP	Robert Chang				
	CFO	Daniel Wang				
	Financial Controller	Nancy Chan				

Note 1 : On March 15, 2019, the Board of the Company approved that compensation distribution to employees is NT\$29,739 thousand. The detail of distribution has not been resolved.

Note 2 : Mr. Jacky Ni resigned from COO on March 15, 2019.

Note 3 : Mr. Kozo Fujita resigned from insider on March 15, 2019.

**3.2.4 Comparison of the remunerations to Directors, General Managers, and VPs in proportion to the net income after tax from the Company and companies included in the consolidated financial statements in the most recent 2 years, and specify the policies, standards, combinations, procedures for determining remunerations and correlation with business performance**

**A. The ratio of total remuneration paid by the Company and by all companies included in the consolidated financial statements for the two most recent years to Directors, General Managers, and VPs of the Company to the net income**

Title	Ratio of the Total Remuneration Amount to the Net Income After Tax (%)			
	2017		2018	
	The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements
Directors	5.75%	5.75%	6.67%	6.67%
GMs, and VPs	17.43%	17.43%	26.90%	26.90%

**B. The policies, standards, and portfolios for the payment of remuneration, the procedures for determining remuneration, and the correlation with business performance**

- (1) Remuneration to Directors are determined by the position at the Company, participation and contribution.
- (2) Remuneration to General Managers and VPs are determined according to the Company's regulations and HR policies, while taking into account each individual's position, performance and contribution, and industry standards.

### 3.3 Implementation Status of Corporate Governance

#### 3.3.1 Operations of the Board

A total of seven (A) meetings of the Board of Directors were held in 2018 and the current year up to the date of publication of the annual report with their attendance shown as follows.

Title	Name	Attendance in Person (B)	By Proxy	Attendance Rate (%) 【 B / A 】	Remarks
Chairman	Kinying Kwan	7	0	100%	
Director	Herbert Chang	7	0	100%	
Director	Benjamin Jin-Ping Ng	5	2	71%	
Director	Johnny Shyang-Lin Shen	7	0	100%	
Independent Director	Mao-Wei Hung	7	0	100%	
Independent Director	Brian Chiang	7	0	100%	
Independent Director	Binfu Chuang	7	0	100%	

Other mentionable items :

1. The operation of the Board with any of the following conditions, the date of Board meeting, term, agenda items, all opinions of Independent Directors, and how the company handles opinions of Independent Directors should be stated clearly :

(1) For matters specified in Article 14-3 of the Securities Exchange Act.

Date of Board meeting	Term	Agenda items	Opinions of from Independent Directors	The Company's Conduct for the opinions of Independent Directors
03/09/2018	The 1 <sup>st</sup> in 2018	1. The bonus scheme for the employees and directors for the year of 2017 was approved. 2. The amendment to the "Memorandum and Articles of Association of the Company" was approved. 3. Release of prohibition on Directors from participation in competing business was approved. 4. The establishment of a subsidiary in Jinan, China was approved. 5. The change of Certified Public Accountant was approved. 6. The evaluation and appointment of Certified Public Accountant was approved. 7. The grant list of 2017 Employee	None	None

		Stock Option was approved. 8. The monthly remuneration scheme for the Directors for the year of 2018 was approved.		
05/04/2018	The 2 <sup>nd</sup> in 2018	The 2018 Employee Stock Option Plan was approved.	None	None
08/10/2018	The 3 <sup>rd</sup> in 2018	1. The subsequently ratification for the amendment of 2018 Employee Stock Option Plan was approved. 2. The 1 <sup>st</sup> grant list of 2018 Employee Stock Option was approved.	None	None
09/11/2018	The 4 <sup>th</sup> in 2018	The 2 <sup>nd</sup> grant list of 2018 Employee Stock Option was approved.	None	None
11/01/2018	The 5 <sup>th</sup> in 2018	The 3 <sup>rd</sup> grant list of 2018 Employee Stock Option was approved.	None	None
03/15/2019	The 1 <sup>st</sup> in 2019	1. The evaluation and appointment of Certified Public Accountant was approved. 2. The amendment to the “Memorandum and Articles of Association of the Company” was approved. 3. The bonus scheme for the employees and directors for the year of 2018 was approved. 4. The amendment to “The Guideline for Acquisition and Disposal of Assets” was approved. 5. The amendment to “Guideline for Engaging in Derivatives Transactions” was approved. 6. The amendment to “The Guideline for Loaning Funds to Others” was approved. 7. The amendment to “The Guideline for Endorsement and Guaranty” was approved. 8. The prohibition on newly Directors elected at the Annual General Meeting to be released from the participation in competitive business was approved. 9. The monthly remuneration scheme for the Directors for the year of 2019 was approved.	None	None

(2) Except the former item, other Board resolutions where Independent Directors have expressed opposition or qualified opinions that have been noted in the record or declared in writing.

2. If there are Directors' avoidance of motions in conflict of interest, the Directors' names, contents of motion, causes for avoidance and voting should be specified : Director Johnny Shyang-Lin Shen did not participate in the meeting of the Board of Directors held on March 9, 2018 and March 15, 2019 for discussion and voting on bonuses paid to Executives due to avoidance of conflict of interest.

3. Measures taken to strengthen the functions of the Board (such as the establishment of audit committee, enhancement on information transparency) during the current year and past year and evaluation of measures :

The Audit Committee and Remuneration Committee were established in 2010 and 2011 respectively and have assisted the Board in fulfilling its responsibilities in accordance with the Audit Committee Charter and Remuneration Committee Charter.

4. The attendance of Independent Directors

◎:Attend in Person; ☆:Proxy; \* :Absent

Term Name	The 1 <sup>st</sup> in 2018	The 2 <sup>nd</sup> in 2018	The 3 <sup>rd</sup> in 2018	The 4 <sup>th</sup> in 2018	The 5 <sup>th</sup> in 2018	The 6 <sup>th</sup> in 2018	The 1 <sup>st</sup> in 2019
Mao-Wei Hung	◎	◎	◎	◎	◎	◎	◎
Brian Chiang	◎	◎	◎	◎	◎	◎	◎
Binfu Chuang	◎	◎	◎	◎	◎	◎	◎



### 3.3.2 Operation of Audit Committee

A total of seven (A) Audit Committee meetings were held in 2018 and the current year up to the date of publication of the annual report. Records of attendance by independent directors are shown as follows :

Title	Name	Attendance in Person (B)	By Proxy	Attendance Rate (%) 【 B/A 】	Remarks
Independent Director	Mao Wei Hung	7	0	100%	
Independent Director	Brian Chiang	7	0	100%	
Independent Director	Binfu Chuang	7	0	100%	

Other mentionable items :

1. The main function of the Committee is to supervise the following matters :

- (1)The reliability and integrity of the financial report of the Company.
- (2)Appointment(and dismissal), independence and performance of certified public accountants of the Company.
- (3)The effective implementation of the internal control system of the Company.
- (4)Compliance with relevant laws and regulations of the Company.
- (5)Management of the existing or potential risks of the Company.

2.The operation of the Audit Committee with any of the following conditions, the dates of meetings, sessions, contents of motion, resolutions of the Audit Committee and the company's response to the Audit Committee's opinion should be specified :

(1) For matters specified in Article 14-5 of the Securities and Exchange Act.

Date of Board meeting	Term	Contents of Motion	Resolutions of Audit Committee	The conduct of the Company for the comments from Audit Committee
03/09/2018	The 1st in 2018	<ol style="list-style-type: none"> <li>1.The consolidated financial statement for the year ended December 31, 2017 of the Company was approved.</li> <li>2.The Internal Control System Statement for the year ended December 31, 2017 of the Company was approved.</li> <li>3.The amendment to the "Memorandum and Articles of Association of the Company" was approved.</li> <li>4.The prohibition on Directors to be released from participation in competing industries was approved.</li> <li>5.The establishment of a subsidiary in Jinan, China was approved.</li> </ol>	They were approved by Audit Committee.	None.

		<p>6.The he change of Certified Public Accountant was approved.</p> <p>7.The evaluation and appointment of Certified Public Accountant was approved.</p> <p>8.The grant list of 2017 Employee Stock Option was approved.</p> <p>9.The monthly remuneration scheme for the Directors for the year of 2018 was approved.</p>		
05/04/2018	The 2 <sup>nd</sup> in 2018	The 2018 Employee Stock Option Plan was approved.	It was approved by Audit Committee.	None
08/10/2018	The 3 <sup>rd</sup> in 2018	<p>1. The semi-annual consolidated financial statement for the period ended June 30, 2018 of the Company was approved.</p> <p>2.The subsequently ratification for the amendment of 2018 Employee Stock Option Plan was approved.</p> <p>3. The 1<sup>st</sup> grant list of 2018 Employee Stock Option was approved.</p>	They were approved by Audit Committee.	None.
09/11/2018	The 4 <sup>th</sup> in 2018	The 2 <sup>nd</sup> grant list of 2018 Employee Stock Option was approved.	None	None
11/01/2018	The 5 <sup>th</sup> in 2018	The 3 <sup>rd</sup> grant list of 2018 Employee Stock Option was approved.	None	None
03/15/2019	The 1st in 2019	<p>1. The evaluation and appointment of Certified Public Accountant was approved.</p> <p>2. The amendment to the “Memorandum and Articles of Association of the Company” was approved.</p> <p>3. The bonus scheme for the employees and directors for</p>	They were approved by Audit Committee.	None.

			<p>the year of 2018 was approved.</p> <p>4. The consolidated financial statement for the year ended December 31, 2018 of the Company was approved.</p> <p>5. The Internal Control System Statement for the year ended December 31, 2018 of the Company was approved.</p> <p>6. The amendment to “The Guideline for Acquisition and Disposal of Assets” was approved.</p> <p>7. The amendment to “Guideline for Engaging in Derivatives Transactions” was approved.</p> <p>8. The amendment to “The Guideline for Loaning Funds to Others” was approved.</p> <p>9. The amendment to “The Guideline for Endorsement and Guaranty” was approved.</p> <p>10. The prohibition on newly Directors elected at the Annual General Meeting to be released from the participation in competitive business was approved.</p> <p>11. The monthly remuneration scheme for the Directors for the year of 2019 was approved.</p>		
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(2) Except the former item, other resolutions which were not approved by the Audit Committee but were approved by two thirds or more of all directors : None.

3. If there are Independent Directors’ avoidance of motions in conflict of interest, the Directors’ names, contents of motion, causes for avoidance and voting should be specified : None.

4. Communication between Independent Directors and Internal Auditors and Accounts (including major items, methods, and results that were communicated concerning the company’s financial and business situations) :

The Internal Auditor submits the Internal Audit Report to each Independent Director monthly for review and reports in Board meeting quarterly for the audit operations and the implementation status. If there are any special circumstances, the Internal Auditors will immediately notify the audit committee.

Date	Communication material	Result of Communication
March 9, 2018	2017Q4 Audit report	The communication between Independent Directors and Internal Auditor is well.
May 4, 2018	2018Q1 Audit report	The communication between Independent Directors and Internal Auditor is well.
August 8, 2018	2018Q2 Audit report	The communication between Independent Director and Internal Auditor is well.

The Company's Certified Public Accountant reported the audit results on 2018 financial statements and other communication matters required by relevant laws and regulations in the meeting of the audit committee on March 15, 2019. The communication between the Audit Committee and the CPAs has been good.

Date	Communication material	Result of Communication
Mar. 9, 2018	1. Report for 2017 financial statements audit result and discuss about update accounting principal and law effect. 2. Report for Internal audit result.	The communication between Independent Directors and CPAs is well.
Mar. 15, 2019	1. Report for 2018 financial statements audit result and discuss about update accounting principal and law effect. 2. Report for Internal audit result.	The communication between Independent Directors and CPAs is well.

**3.3.3 Corporate governance implementation status and deviations from the “Corporate Governance Best Practice Principles for TWSE/GTSM Listed Companies” and the reason for any such deviation**

Item	Implementation Status		Deviations from the “Corporate Governance Best Practice Principles for TWSE/GTSM Listed Companies” and Reasons
	Yes	No	
I. Does the company establish and disclose the Corporate Governance Best Practice Principles based on “Corporate Governance Best Practice Principles for TWSE/GTSM Listed Companies”?	V		No material difference.
II. Shareholding Structure & Shareholders’ rights 1. Does the company have an Internal Operation procedures for appropriate handling shareholders’ suggestions, inquiries, disputes and litigation matters, and implement them in accordance with the procedures? 2. Does the company possess a list of major shareholders and beneficial owner of these major shareholders? 3. Has the company built and executed a risk management system and firewall between the Company and its affiliates?	V   V  V		No material difference.  No material difference.  No material difference.

Item	Implementation Status		Deviations from the “Corporate Governance Best Practice Principles for TWSE/GTSM Listed Companies” and Reasons
	Yes	No	
4. Has the company establish internal rules prohibiting insiders trading on undisclosed information?	V		No material difference.
III. Composition and Responsibilities of the Board of Directors 1. Has the company established a diversification policy for the composition of its Board of Directors and has it been implemented accordingly?	V		No material difference.

Brief Description

internal audit system.  
 4. The Company has formulated the “Procedures for Internal Material Information Handling and the Prevention of Insider Trading” and regularly provided training or relevant information on this issue to the insiders.

1. The Board consists of seven directors, in which three of them are Independent Directors as adopted in accordance with the “Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies”. The Company has stated the diversification policy for composition of the Board members in Corporate Governance Best Practice Principles and adopted the policy. To achieve the better corporate governance, each Board member has his own specialized field and knowledge of industry.  
 The industry experience and professional distribution of the directors are shown as follows:

Name	Nationality	Item of Diversity			
		Management	Leadership	Industry	Finance
Kinying Kwan	U.S.A · R.O.C	V	V	V	
Herbert Chang	R.O.C	V	V	V	
Benjamin Jin-Ping,Ng	Australia	V			

Item	Implementation Status		Deviations from the “Corporate Governance Best Practice Principles for TWSE/GTSM Listed Companies” and Reasons				
	Yes	No					
<p>2. Other than the Remuneration Committee and the Audit Committee which are required by law, does the Company plan to set up other Board committees?</p> <p>3. Does the company establish methodology for evaluating the performance of its Board Directors, on an annual basis?</p> <p>4. Does the company regularly evaluate its independence of CPAs?</p>	V	<p>V</p> <p>V</p> <p>V</p>	<p>The Company has not set up other various functional committees.</p> <p>The Company has not established regulations governing the Board performance evaluation and regularly conducted the performance evaluation.</p> <p>No material difference.</p>				
				Johnny Shyang-Lin Shen	U.S.A · R.O.C	V	V
				Mao-Wei Hung	R.O.C	V	V
				Brian Chiang	R.O.C	V	V
				Binfu Chuang	U.S.A · R.O.C	V	V

Item	Implementation Status		Deviations from the “Corporate Governance Best Practice Principles for TWSE/GTSM Listed Companies” and Reasons
	Yes	No	
IV. Does the company set up a full-(or part-) time corporate governance unit or personnel to be in charge of corporate governance affairs (including but not limited to furnish information required for business execution by directors and supervisors, handle matters relating to board meetings and shareholders meetings according to laws, handle corporate registration and amendment registration, handle corporate registration and amendment registration)?	V		No material difference.
V. Has the company established a means of communicating with its stakeholders (including but not limited to shareholders, employees, customers and suppliers) or created a Stakeholders Section on its company website? Does the company respond to stakeholders’ questions on corporate responsibilities?	V		No material difference.
VI. Has the company appointed a professional registrar for its Shareholders’ meetings?	V		No material difference.
VII. Information disclosure 1. Has the company set up a website to disclose information regarding its finances, operations, and corporate governance status?	V		No material difference.
2. Does the company use other information disclosure channels (e.g. maintaining an English-language website, designating staff to handle information collection and disclosure, appointing spokespersons, webcasting investors conference etc.)?	V		No material difference.



Item	Implementation Status		Deviations from the “Corporate Governance Best Practice Principles for TWSE/GTSM Listed Companies” and Reasons
	Yes	No	
VIII. Does the company have other information that would help better understand the Company’s implementation of corporate governance? (including but not limited to employee rights and benefits, employees caring, investor relations, supplier relationship, the rights of related parties, continuing education for directors and supervisors, implementation of risk management policies and risk assessment standards, implementation of customer policies, liability insurance purchased by the Company directors and supervisors)?	V	<ol style="list-style-type: none"> <li>1. The Company has formulated and implemented relevant regulations in accordance with government acts regarding labor, welfare, safety, and health to protect employee rights and benefits and care employees’ life.</li> <li>2. In accordance with applicable public company rules, the Company discloses the Company’s business operations and financial status for investors, and maintains investor relations by properly dealing with inquiries from investors.</li> <li>3. The Company arranges the training institutions specified by the competent authority to provide further training for Directors every year.</li> <li>4. The Company annually purchases D&amp;O Insurance for Directors and Independent Directors to reduce risks.</li> </ol>	No material difference.
<p>IX. In terms of the corporate governance evaluation results which has been disclosed by the Corporate Governance Center of Taiwan Stock Exchange in the most recent year, describe the improved items and present the actions and amendment for unimproved items.</p> <ol style="list-style-type: none"> <li>1. Improved items : The Company has disclosed the specific way for the ethical management in our website, for example : The main content of ethical management is delivered to our new hired employee in our internal training.</li> <li>2. Remedy for unimproved items : The Company has disclosed main function of Audit Committee in annual report and will disclose interim financial report in English version.</li> </ol>			

### 3.3.4 Composition, responsibilities and operations of the Remuneration Committee shall be disclosed if the company has a Remuneration Committee in place

The purpose of the Company's compensation committee is to assist the Board of Directors in implementation and evaluation of the Company's overall compensation and benefits policies and remuneration to managerial officers.

#### A. Information on members of Remuneration Committee

Identity	Criteria	Meets One of the Following Professional Qualification Requirements, Together with at Least Five-year Work Experience			Independence Criteria (Note 1)								Number of Other Taiwanese Public Companies Concurrently Serving as a Member of the Remuneration Committee	Remarks	
		An Instructor or Higher Position in a Department of Commerce, Law, Finance, Accounting, or Other Academic Department Related to the Business Needs of the Company in a Public or Private Junior College, College or University	A Judge, Public Prosecutor, Attorney, Certified Public Accountant, or Other Professional or Technical Specialist Who has Passed a National Examination and Been Awarded a Certificate in a Profession Necessary for the Business of the Company	Has Work Experience in the Areas of Commerce, Law, Finance, or Accounting, or Otherwise Necessary for the Business of the Company	1	2	3	4	5	6	7	8			
Convener	Mao-Wei Hung	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	0	(Note 2)
Committee Member	Brian Chiang			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	
Committee Member	Binfu Chuang			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	

Note 1 : Please tick the corresponding boxes if members have been any of the following during the two years prior to being elected or during the term of office.

- (1) Not an employee of the Company or any of its affiliates.
- (2) Not a director or supervisor of the Company or any of its affiliates. However, if the person is an independent director of the company, its parent company, or any subsidiary, as appointed in accordance with the Act or with the laws of the country of the parent or subsidiary, it doesn't apply.
- (3) Not a natural-person shareholder who holds shares, together with those held by the person's spouse, minor children, or held by the person under others' names, in an aggregate amount of 1% or more of the total number of outstanding shares of the Company or ranking in the top 10 in holdings.
- (4) Not a spouse, relative within the second degree of kinship, or lineal relative within the third degree of kinship, of any of the persons in the preceding three subparagraphs.
- (5) Not a director, supervisor, or employee of a corporate shareholder that directly holds 5% or more of the total number of outstanding shares of the Company or that holds shares ranking in the top five in holdings.
- (6) Not a director, supervisor, managerial officer, or shareholder holding 5% or more of the share, of a specified company or institution that has a financial or business relationship with the Company.
- (7) Not a professional individual who, or an owner, partner, director, supervisor, or managerial officer of a sole proprietorship, partnership, company, or institution that, provides commercial, legal, financial, accounting services or consultation to the Company or to any affiliate of the Company, or a spouse thereof.
- (8) Not been a person of any conditions defined in Article 30 of the Company Law.

Note 2 : The Committee shall faithfully perform the following duties and present its recommendations to the board of directors for discussion.

- (1) Periodically reviewing this Charter and making recommendations for amendments.
- (2) Establishing and periodically reviewing the annual and long-term performance goals for the directors, supervisors, and managerial officers of this Corporation and the policies, systems, standards, and structure for their compensation.
- (3) Periodically assessing the degree to which performance goals for the directors, supervisors, and managerial officers of this Corporation have been achieved, and setting the types and amounts of their individual compensation.

## B. Operations of the Remuneration Committee

- (1) The Company's remuneration committee consists of three members.
- (2) The members' term of office for this session : From June 24, 2016 to June 23, 2019. Mr. Mao-Wei Hung, the remuneration committee chair convened the regular meeting three (3) times during the year 2018 and the current year up the date of publication of the annual report. The records of attendance of members are shown as follows :

Title	Name	Attendance in Person(B)	By Proxy	Actual Attendance Rate (%) (B/A)(Note)	Remarks
Convener	Mao-Wei Hung	5	0	100%	
Committee Member	Brian Chiang	5	0	100%	
Committee Member	Binfu Chuang	5	0	100%	

Other mentionable items :

### 1. The resolutions of Remuneration Committee :

The Committee	Motions	Resolutions	The conduct of the Company for the comments from Audit Committee
The 1 <sup>st</sup> in 2018	1.The proposal of 2017 Dividend Distribution . 2.The bonus scheme for the employees and directors for the year of 2017. 3.The grant list of 2017 Employee Stock Option. 4.The remuneration packages for the senior managers (executives) for the year of 2018. 5.The monthly remuneration scheme for the Directors for the year of 2018.	They were approved by Remuneration Committee	They were all submitted to Board and approved by Directors of Board
The 2 <sup>nd</sup> in 2018	The 2018 Employee Stock Option Plan.	It was approved by Remuneration Committee	It was submitted to Board and approved by Directors of Board
The 3 <sup>rd</sup> in 2018	The 1 <sup>st</sup> grant list of 2018 Employee Stock Option.	It was approved by Remuneration Committee	It was submitted to Board and approved by Directors of Board
The 4 <sup>th</sup> in 2018	The 3 <sup>rd</sup> grant list of 2018 Employee Stock Option was approved.	It was approved by Remuneration Committee	It was submitted to Board and approved by Directors of Board
The 1 <sup>st</sup> in 2019	1.The bonus scheme for the employees and directors for the year of 2018.	They were approved by Remuneration Committee	They were all submitted to Board and approved by Directors of Board

	<p>2.The replacement and appointment for senior managers (executives) of the Company.</p> <p>3.The remuneration packages for the senior managers (executives) for the year of 2019.</p> <p>4.The monthly remuneration scheme for the Directors for the year of 2019.</p>		
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2. If the Board of Directors declines to adopt, or modifies a recommendation of the remuneration committee, the date of board meeting, term, agenda items, results of resolutions of the remuneration committee, and how the company handles opinions of the remuneration committee should be stated clearly (If the remuneration approved by the Board of Directors is better than the recommendation of the remuneration committee, the difference and the reason should be stated clearly.) : No such situation occurred.
3. If resolutions of the remuneration committee are objected by members or become subject to a qualified opinion, which have been recorded or declared in writing, then the date of the meeting, the session, the nature of the motion, all members' opinions and the response to members' opinion should be specified : No such situation occurred.

### 3.3.5 Corporate social responsibility

Systems and measures that the company has adopted with respect to environmental protection, community participation, contributions to society, services to society, social and public interests, consumer rights and interests, human rights, safety and health, and other corporate social responsibilities and activities, and the state of implementation.

Item	Status of Implementation		Deviations from the “Corporate Social Responsibility Best Practice Principles for TWSE/GTSM Listed Companies” and Reasons
	Yes	No	
I. Corporate Governance Implementation 1. Does the company establish its corporate social responsibility policies or systems and review the results of the implementation ?	V		1. The Company has established the “Corporate Social Responsibility Best Practices Principles” and followed the principles to handle relevant matters on the Company’s social responsibility.
2. Does the company organize education and training on corporate social responsibility on a regular basis?	V		2. The Company organizes training as well as awareness programs on a regular basis, of which part has been included in the employee performance appraisal. It will subsequently continue to promote and improve to combine closely ethics education with incentive and discipline system.
3. Does the company establish an exclusively (or concurrently) dedicated unit to be in charge of proposing and enforcing the corporate social responsibility, have top management be authorized to handle it by the Board of Directors, and to report to the Board of Directors on a periodic basis?	V		3. The Company has an concurrently dedicated unit to be in charge of the promotion of corporate social responsibility, report on the implementation to the CEO regularly, collect and report the summary of implementation to the Board of Directors yearly.
4. Does the company adopt reasonable remuneration policies, combine the employee performance appraisal system with corporate social responsibility policies, and establish a clear and effective incentive and discipline system?		V	4. The Company has not combined the employee performance appraisal system with corporate social responsibility policies. It will continue to conduct the planning in such direction for the future to combine the employee performance with

Item	Status of Implementation			Deviations from the “Corporate Social Responsibility Best Practice Principles for TWSE/GTSM Listed Companies” and Reasons
	Yes	No	Brief Description	
<p>II. Fostering a Sustainable Environment</p> <p>1. Does the company endeavor to utilize all resources more efficiently and use renewable materials that have a low impact on the environment?</p> <p>2. Does the company establish a proper environment management system based on the characteristics of its industry?</p> <p>3. Does the company monitor the impact of climate change on its operations and establish company strategies for energy conservation and carbon and greenhouse gas reduction based upon its operations and the result of a greenhouse gas inventory?</p>	V		<p>implementation of corporate social responsibility policies.</p> <p>1. The Company mainly provides customers with NRE. The solutions to the back-end mass production engineering are all through outsourcing, including wafer fabrication, packaging, and testing so that the Company has neither other production equipment, nor other industrial pollution.</p> <p>2. Since the Company has no industrial pollution, we will focus on continuous promotion of environmental protection and energy conservation, and reduce sanitary waste to achieve the goal for energy conservation and carbon reduction.</p> <p>3. The Company’s business operations do not cause environmental pollution directly. The Company endeavors to provide and develop low power and small size designs in product development in accordance with the current environmental trends in energy conservation and carbon reduction. We plan to reduce 5% off volume of electricity before Year 2020 based on our volume of electricity in Year 2016.</p>	<p>The Company has not combined the employee performance appraisal system with corporate social responsibility policies.</p> <p>No material difference.</p> <p>No material difference.</p> <p>No material difference.</p>
<p>III. Preserving public welfare</p> <p>1. Does the company adopt relevant management policies and processes in compliance with relevant laws and regulations, and the International Bill of Human Rights?</p>	V		<p>1. The Company handles matters related to employee benefits and formulates management procedures in accordance with relevant labor laws where subsidiaries are located to protect legitimate rights and interests of employees.</p>	<p>No material difference.</p>

Item	Status of Implementation		Deviations from the “Corporate Social Responsibility Best Practice Principles for TWSE/GTSM Listed Companies” and Reasons
	Yes	No	
<p>2. Does the company establish a grievance mechanism and channel and respond to any employee's grievance in an appropriate manner?</p> <p>3. Does the company provide safe and healthful work environments for its employees, organize training on safety, and health for its employees on a regular basis?</p>	V		No material difference.
<p>4. Does the company establish a platform to facilitate regular two-way communication between the management and the employees, and by reasonable means, inform employees of operation changes that might have material impacts?</p>	V		No material difference.
<p>5. Does the company establish effective training programs to foster career skills for its employees?</p>	V		No material difference.
<p>6. Does the company establish relevant policies on consumer rights and interests and procedure for accepting consumer complaints in the process of research and development, procurement, production, operations, and services?</p>	V		No material difference.
<p>7. Does the company follow relevant laws, regulations, and international guidelines when marketing or labeling its products and services?</p>	V		No material difference.
<p>8. Prior to engaging in commercial dealings, does the company assess whether there is any record of a supplier's impact on the environment and society?</p>	V		No material difference.

Item	Status of Implementation		Deviations from the “Corporate Social Responsibility Best Practice Principles for TWSE/GTSM Listed Companies” and Reasons
	Yes	No	
9. When the company enters into a contract with any of its major suppliers, does the content include that the contract may be terminated or rescinded any time if the supplier has violated such policy and has caused significant negative impact on the environment and society?	V		<p>The Company will continuously discuss with major suppliers that the terms stipulating “the contract may be terminated or rescinded any time if the supplier has violated such policy and has caused significant negative impact on the environment and society” to be included in the content of contracts with major suppliers.</p>
<p>IV. Enhancing Disclosure of Information</p> <p>1. Does the company disclose relevant and reliable information relating to its corporate social responsibility initiatives to improve information transparency on the company website and Market Observation Post System?</p>	V		<p>No material difference.</p>
<p>V. If the company promulgates its own corporate social responsibility principles in accordance with the “Corporate Social Responsibility Best Practice Principles for TWSE/GTSM Listed Companies”, please state clearly the discrepancy in the operation thereof and the principles :</p> <p>The Company has established the “Corporate Social Responsibility Best Practice Principles” and followed such principles to handle relevant matters on the Company’s corporate social responsibility.</p>			<p>1. The Company established a spokesperson, litigious and non-litigious agent in the R.O.C. and disclose corporate information in accordance with the laws and regulations to provide major stakeholders with high-transparency information.</p>
<p>VI. Other significant information which would help better understand the implementation of corporate social responsibility (such as environmental protection, community participation, contribution to society, service to society, social and public interests, consumer rights and interests, human rights, safety and health, other corporate social responsibilities and activities, and the state of implementation.</p> <p>(1) The Company received Green Partner certification from a world-class company in 2008 as its partner in green supply chain. The Company will continue to make efforts to provide excellent quality of environmentally friendly products and fulfill environmental responsibility as a citizen of the world.</p> <p>(2) The Company launches fundraising activities and donations of materials from time to time for socially disadvantaged minorities and objects affected.</p>			<p>VII. If the company’s products or Corporate Social Report Responsibility have passed verification standards of relevant certification body, it should be stated clearly.</p> <p>None.</p>



**3.3.6 Implementation of Ethical Corporate Management : The Company has formulated the “Operational Procedures and Guidelines for Ethical Management” to foster a corporate culture of ethical management and sound development and offer to establish good commercial practices, and follow them to handle relevant matters**

Item	Status of Implementation		Discrepancy from the “Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies” and the Reasons
	Yes	No	
<p>I. Establishment of ethical corporate management policies and programs</p> <p>1. Have the ethical corporate management policies, actions, and the commitment by the Board of Directors and the management on rigorous and thorough implementation of such policies been clearly specified in the rules and external documents of the Company?</p>	V		No material difference.
<p>2. Does the company establish relevant policies which are duly enforced to prevent unethical conduct and provide implementation procedures, guidelines, consequence of violation and complaint procedures in such policies?</p>	V		No material difference.
<p>3. Does the company adopt prevention measures against any matter set forth in Paragraph 2, Article 7 of the</p>	V		No material difference.

Item	Status of Implementation		Discrepancy from the “Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies” and the Reasons
	Yes	No	
<p>“Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies” or business activities within their business scope which are possibly at a higher risk of being involved in an unethical conduct, and strengthen the preventive measures?</p> <p>II. Implementation of ethical management</p> <p>1.Does the company assess the ethics records of whom it has business relationship with and include business conduct and ethics related clauses in the business contracts?</p>	V		No material difference.
<p>2.Does the company establish a dedicated unit that is under the Board of Directors and responsible for promoting the ethical management, and report the status of the dedicated unit’s implementation to the Board of Directors on a regular basis?</p> <p>3.Does the company adopt policies for preventing conflicts of interest, offer appropriate means, and carry them out?</p>	V		No material difference.
	V		No material difference.

Item	Status of Implementation		Discrepancy from the "Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies" and the Reasons
	Yes	No	
4. Does the company establish effective accounting systems and internal control systems to facilitate ethical corporate management, and the internal audit unit periodically examine the systems may engage a certified public accountant to carry out the audit?	V		No material difference.
5. Does the company periodically organize training internally and externally on the ethical management?	V		No material difference.



**3.3.7 If the company has adopted corporate governance best-practice principles or related bylaws, disclose the methods of inquiry for such principles or bylaws**

Principles or bylaws can be referred through the Market Observatory Post System.

**3.3.8 Other significant information that will provide a better understanding of the company’s implementation of corporate governance, if any, such information may also be disclosed**

None.

**3.3.9 The section on the implementation of the company’s internal control systems shall disclose as follows**

A. A Statement on Internal Control : Details are shown on pages 53 and 54.

B. Where a CPA has been engaged to carry out a special audit of the internal control systems, disclose the CPA audit report : None.

**3.3.10 The penalties delivered to the company and the staffs of the company, or the penalties delivered by the company to the staffs for violations of internal control system, the major nonconformity, and the corrective action in the most recent years and up to the date of the annual report**

None.

**3.3.11 Major resolutions of Board Meetings and Shareholders’ Meeting during the most recent year and the current year up to the date of publication of the annual report**

**A. Board Meeting :**

Date	Term	Major Resolutions
03/9/2018	The 1 <sup>st</sup> in 2018	<ol style="list-style-type: none"> <li>1. The consolidated financial statement for the year ended December 31, 2017 of the Company was approved.</li> <li>2. The proposal of 2017 Dividend Distribution was approved.</li> <li>3. The bonus scheme for the employees and directors for the year of 2017 approved.</li> <li>4. The business report of 2017 was approved.</li> <li>5. The Internal Control System Statement for the year ended December 31, 2017 of the Company was approved.</li> <li>6. The amendment to the “Memorandum and Articles of Association of the Company” was approved.</li> <li>7. The amendment to the “Rules Governing Procedures for Meetings of Board of Director” was approved.</li> <li>8. The “Regulations Governing Appointment of Independent Directors and Compliance Matters” was approved.</li> <li>9. Release of prohibition on Directors from participation in competing industries was approved.</li> <li>10. The establishment of a subsidiary in Jinan, China through Hong Kong subsidiary was approved.</li> <li>11. The change of Certified Public Accountant was approved.</li> <li>12. The evaluation and appointment of Certified Public Accountant was approved.</li> <li>13. The grant list of 2017 Employee Stock Option was approved.</li> <li>14. The remuneration packages for the senior managers (executives) for the year of 2018 were approved.</li> <li>15. The monthly remuneration scheme for the Directors for the year of 2018</li> </ol>

		<p>was approved.</p> <p>16. The date and meeting agenda of 2018 Annual General Meeting of the Company were approved.</p>
05/04/2018	The 2 <sup>nd</sup> in 2018	<ol style="list-style-type: none"> <li>1. The consolidated financial statements for the period ended March 31, 2018 of the Company was approved.</li> <li>2. The amendment to 2018 Audit Plan of the Company was approved.</li> <li>3. The 2018 Employee Stock Option Plan was approved.</li> <li>4. The bank account opening in Cathay United Bank was approved.</li> </ol>
08/10/2018	The 3 <sup>rd</sup> in 2018	<ol style="list-style-type: none"> <li>1. The semi-annual consolidated financial statement for the period ended June 30, 2018 of the Company was approved.</li> <li>2. The record date of distribution of cash dividend was approved.</li> <li>3. The subsequently ratification for the amendment of 2018 Employee Stock Option Plan was approved.</li> <li>4. The grant list of 2018 Employee Stock Option was approved.</li> </ol>
09/11/2018	The 4 <sup>th</sup> in 2018	<ol style="list-style-type: none"> <li>1. The Share Buyback Program with the Declaration was approved.</li> <li>2. The grant list of 2018 Employee Stock Option was approved.</li> </ol>
11/01/2018	The 5 <sup>th</sup> in 2018	<ol style="list-style-type: none"> <li>1. The consolidated financial statements for the period ended September 30, 2018 of the Company was approved.</li> <li>2. The Audit Plan for the year of 2019 of the Company was approved.</li> <li>3. The grant list of 2018 Employee Stock Option was approved.</li> </ol>
11/22/2018	The 6 <sup>th</sup> in 2018	The Capital Reduction via Buyback Shares Nullifying was approved.
03/15/2019	The 1 <sup>st</sup> in 2019	<ol style="list-style-type: none"> <li>1. The evaluation and appointment of Certified Public Accountant was approved.</li> <li>2. The amendment to the “Memorandum and Articles of Association of the Company” was approved.</li> <li>3. The bonus scheme for the employees and directors for the year of 2018 was approved.</li> <li>4. The consolidated financial statement for the year ended December 31, 2018 of the Company was approved.</li> <li>5. The proposal of 2018 Dividend Distribution was approved.</li> <li>6. The business report of 2018 was approved.</li> <li>7. The Internal Control System Statement for the year ended December 31, 2018 of the Company was approved.</li> <li>8. The amendment to the “Rules Governing Procedures for Meetings of Board of Director” was approved.</li> <li>9. The amendment to the “Guideline for Acquisition and Disposal of Assets” was approved.</li> <li>10. The amendment to the “Guideline for Engaging in Derivatives Transactions” was approved.</li> <li>11. The amendment to the “ Guideline for Loaning Funds to Others” was approved.</li> <li>12. The amendment to the “ Guideline for Endorsement and Guaranty” was approved.</li> <li>13. The replacement and appointment for senior managers (executives) of the Company was approved.</li> <li>14. The election of seven newly Directors (including three Independent Directors) at the upcoming Annual General Meeting scheduled on June 21, 2019 (“Annual General Meeting”) was approved.</li> <li>15. The prohibition on newly Directors elected at the Annual General Meeting to be released from the participation in competitive business was approved.</li> </ol>

		<p>16. The date and meeting agenda of 2019 Annual General Meeting of the Company were approved.</p> <p>17. The period and place for shareholders who holding 1% or more of the total number of outstanding shares of the company to submit proposals to be discussed at the Annual General Meeting of the Company and submit the nomination of director candidates was approved.</p> <p>18. The remuneration packages for the senior managers (executives) for the year of 2019 were approved.</p> <p>19. The monthly remuneration scheme for the Directors for the year of 2019 was approved.</p>
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**B. Shareholders' Meeting :**

Date	Major Resolutions	Implementation
05/30/2018	<p>1. 2017 Business Report and the Consolidated Financial Statements for the year ended December 31, 2017 of the Company.</p> <p>2. 2017 Dividend Distribution Proposal.</p> <p>3. The amendment to the Memorandum and Articles of Association of the Company.</p> <p>4. Release the prohibition on Directors from participation in competitive industries.</p>	<p>1. Approved and adopted.</p> <p>2. Approved. (1)The Company distributed 2017 bonus, US\$2,135,036 to shareholders of the Company. (2)The Record date was set on September 7, 2018 and the dividend distribution was completed on October 4, 2018.</p> <p>3. Approved and adopted.</p> <p>4. Approved.</p>

**3.3.12 Major issues of record or written statements made by any Director or Independent Directors dissenting to important resolutions passed by the Board of Directors during the most recent year and the current year up to the date of publication of the annual report**

None.

**3.3.13 A summary of resignations and dismissals of persons connected with the company's financial report (including the chairman, General Manager, Chief Accounting Officer, Chief Financial Officer, Chief Internal Auditor, Chief Research and Development Officer, etc.) during the most recent year and the current year up to the date of the publication of the annual report**

None.

### 3.4 Information on CPA Professional Fees

#### 3.4.1 Audit Fee

Name of Accounting Firm	Name of CPA	Period Covered by CPA's Audit	Remarks
Deloitte & Touche	Yi-Wen Wang	2018.01.01~2018.12.31	
	Cheng-Ming Lee		

Fee Range		Fee Items	Audit Fee	Non-audit Fee	Total
1	Under NT\$ 2,000,000		-	1,565	1,565
2	NT\$2,000,000(inclusive)~ NT\$4,000,000		-	-	-
3	NT\$4,000,000(inclusive)~ NT\$6,000,000		5,728	-	5,728
4	NT\$6,000,000(inclusive)~ NT\$8,000,000		-	-	-
5	NT\$8,000,000(inclusive)~NT\$10,000,000		-	-	-
6	Over NT\$100,000,000 (inclusive)		-	-	-

In case of any of the following situations, the company shall disclose information as follows :

A. Amount of non-auditing relevant fees charged by the appointed independent auditors and related parties reaching 25% of the Company's annual auditing expenses :

Unit: NT\$ thousand

Name of Accounting Firm	Name of CPA	Audit Fee	Non-audit Fee					Period Covered by CPA's Audit	Remarks
			System of Design	Company Registration	Human Resources	Others	Subtotal		
Deloitte & Touche	Yi-Wen Wang	5,728	-	-	-	1,565	7,293	2018.01.01 ~ 2018.12.31	Non-audit fee includes price transfer and tax return
	Cheng-Ming Lee								

B. When the company changes its accounting firm and the audit fees paid for the year in which such change took place are lower than those for the previous year, the amounts of the audit fees before and after the change and the reasons for change shall be disclosed : Not applicable.

C. When the audit fees paid for the current year is more than 15 percent less than those for the previous year, the reduction in the amount of audit fees, reduction percentage, and reasons therefor shall be disclosed : Not applicable.

### 3.5 Information on Change of CPA

Due to relevant regulatory requirements on rotation, Deloitte & Touche has rotated audit partners for Alchip in 2018, Accountant Jamie Lee and Accountant S.C. Huang were replaced by Accountant Yi-Wen Wang and Accountant Cheng-Ming Lee.



**3.6 The Company's Chairman, Chief Executive Officer, Chief Financial Officer, and Managers in Charge of its Finance and Accounting Matters Has Held a Position at the Accounting Firm of its CPA or at an Affiliated Enterprise of Such Accounting Firm in the Most Recent Year**

None.

**3.7 Any Transfer, Pledge, or Other Change of Hands Involving the Equity Interests of a Director, Managerial Officer, or Shareholders Holding More Than 10% of the Shares of the Company during the Most Recent Year and the Current Year Up to the Date of the Publication of the Annual Report**

**3.7.1 Change in equity interests by Directors, managerial officers, or major shareholders**

Unit: Shares

Title	Name	2018		As of Apr. 23, 2019	
		Holding Increase (Decrease)	Pledged Holding Increase (Decrease)	Holding Increase (Decrease)	Pledged Holding Increase (Decrease)
Chairman	Kinying Kwan	0	0	0	0
Director	Herbert Chang	0	0	0	0
Director	Benjamin Jin-Ping Ng	0	0	0	0
Independent Director	Mao Wei Hung	0	0	0	0
Independent Director	Brian Chiang	0	0	0	0
Independent Director	Binfu Chuang	0	0	0	0
CEO/Director	Johnny Shyang-Lin Shen	100,000	0	0	0
COO	Jacky Ni (Note 1)	0	0	0	0
Sales VP of Japan Business Unit	Kozo Fujita (Note 2)	0	0	0	0
GM of Japan Business Unit	Junichiro Hosaka	0	0	0	0
GM of US Business Unit	Hiroyuki Nagashima	0	0	0	0
GM of China Business Unit	Andy Lin	54,167	0	0	0
Sr. VP of Design Engineering	Leo Cheng	58,001 (18,000)	0	0	0
VP of Sales	Rober Chang	0	0	0	0
CFO	Daniel Wang	30,000	0	0	0
Financial Controller	Nancy Chan	5,000	0	0	0
VP of SA	Peter Teng	0	0	0	0

Note 1 : Mr. Jacky Ni resigned from COO on March 15, 2019.

Note 2 : Mr. Kozo Fujita resigned from insider on March 15, 2019.

### 3.7.2 Information where the counterparty in any transfer of equity interests is a related party

None.

### 3.7.3 Information where the counterparty in any pledge of equity interests is a related party

None.

### 3.8 Relationship among the Top Ten Shareholders

April 23,2019

Name	Shareholding		Spouse's/minor's Shareholding		Shareholding by Nominee Arrangement		Relationship between any of the Company's Top Ten Share holders		Remarks
	Shares	%	Shares	%	Shares	%	Name	Relation	
Capital Securities Corp. in custody for Capital HK customers	1,604,000	2.67%	0	0	0	0	-	-	
Citibank in custody for Nomura International Limited	1,426,000	2.37%	0	0	0	0	-	-	
Tian-Huo Chen	1,100,000	1.83%	0	0	0	0	-	-	
Johnny Shyang-Lin Shen	1,041,652	1.73%	0	0	0	0	-	-	
Standard Chartered Bank in custody for KGI Asia Limited	888,000	1.48%	0	0	0	0	-	-	
Tsang-Hai Lin	766,000	1.27%	0	0	0	0	-	-	
Ling-Mei Chen	700,000	1.16%	0	0	0	0	-	-	
CTBC Banck in custody for Kinying Kwan	680,000	1.13%	0	0	0	0	-	-	
Matthews Asia Small Companies Fund	674,000	1.12%	0	0	0	0	-	-	
Allianz Global Investors Taiwan Technology Fund	600,000	1.00%	0	0	0	0	-	-	

### 3.9 The Total Number of Shares and Total Equity Interest Held in any Single Enterprise by the Company, its Directors, Managerial Officers, General Manager, and any Companies Controlled Either Directly or Indirectly by the Company

December 31, 2018 Unit: shares/%

Investee Enterprise	Investment by the Company		Investment by Directors, Supervisors, Managerial Officers, General Manager, and Directly or Indirectly Controlled Companies		Total Investment	
	Shares	%	Shares	%	Shares	%
Alchip(HK)	12,230,170,100	100%	-	-	12,230,170,100	100%
Alchip(US)	391,000,000	100%	-	-	391,000,000	100%
Alchip (JP)	2,000	100%	-	-	2,000	100%
Alchip(TW)	10,000	100%	-	-	10,000	100%
Alchip (SH)	(Note)	100%	-	-	(Note)	100%
Alchip(Wuxi)	(Note)	100%	-	-	(Note)	100%
Alchip BVI	50,000	100%	-	-	50,000	100%
Alchip(Hefei)	(Note)	100%	-	-	(Note)	100%
Alchip(Jinan)	(Note)	100%	-	-	(Note)	100%

Note : Alchip(SH), Alchip(Wuxi) ,Alchip(Hefei) and Alchip(Jinan) are limited companies, so no shares issued.

Alchip Technologies, Limited  
Statement on Internal Control System

Date: March 15, 2019

Based on the results of self assessment of the internal control system conducted by the Company for the fiscal year 2018, we hereby declare as follows:

- I. The company acknowledges and understands that the establishment, enforcement and preservation of the internal control system are the responsibility of the Board, and that the company has already established such a system. The purpose is to provide reasonable assurance to the effectiveness and efficiency of business operations (including profitability, performance and security of assets), reliability, timeliness, transparency, and regulatory compliance of reporting, and compliance with applicable laws, regulations, and bylaws.
- II. There are inherent limitations to even the most well designed internal control system. As such, an effective internal control system can only reasonably ensure the achievement of the aforementioned goals. Moreover, the operating environment and situation may change, impacting the effectiveness of the internal control system. The internal control system of the Company features a self-monitoring mechanism. Once identified, any deficiency will be rectified immediately.
- III. The Company determines the effectiveness of the internal control system in design and enforcement in accordance with the “Regulations Governing Establishment of Internal Control Systems by Public Companies” (hereinafter referred to as “the Regulations”). The Regulations are instituted for judging the effectiveness of the design and enforcement of the internal control system. There are five components of effective internal control as specified in the Regulations with which the procedure for effective internal control is measured, namely: (1) Control environment, (2) Risk assessment, (3) Control activities, (4) Information and Communications, and (5) Monitoring activities. Each of the elements in turn contains certain audit items. Refer to the Regulations for details.
- IV. The Company has adopted the aforementioned internal control system for an internal audit on the effectiveness of the design and enforcement of the internal control system.
- V. Based on the aforementioned audit findings, the Company holds that it has reasonably preserved the achievement of the aforementioned with the internal control system as of December 31, 2018 (including the monitoring over the subsidiaries), including the effectiveness and efficiency in operation, reliability, timeliness, transparency, and regulatory compliance of reporting, and compliance with relevant regulatory requirements, and that the design and enforcement of internal control are effective.

- VI. This statement of declaration shall form an integral part of the annual report and prospectus of the company and will be publicly announced. If any fraudulent information, concealment or unlawful practices are discovered in the content of the aforementioned information, the Company shall be held liable under Article 20, Article 32, Article 171 and Article 174 of the Securities and Exchange Act.
- VII. This statement was approved by the Board on March 15, 2019 in the presence of seven (7) directors, who concurred unanimously.

Alchip Technologies, Limited



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Kinying Kwan  
Chairman



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Johnny Shyang-Lin Shen  
CEO

## IV. Capital Overview

### 4.1 Capital and Shares

#### 4.1.1 Capitalization

##### A. Issued shares

Unit:share/NT\$

Month/ Year	Par Value (NT\$)	Authorized Capital		Paid-in capital		Remark		
		Shares	Amount	Shares	Amount (NT\$ thousand)	Sources of Capital	Capital Increased by Assets Other than Cash	Other
2010.07	10	100,000,000	1,000,000,000	52,420,842	523,364,710	Capital surplus transferred to capital	None	-
2010.07	10	100,000,000	1,000,000,000	53,871,342	538,713,420	New shares issued upon the exercise of share options	None	-
2013.11	10	100,000,000	1,000,000,000	53,947,342	539,473,420	New Shares issued upon the exercise of share options	None	-
2014.03	10	100,000,000	1,000,000,000	54,113,342	541,133,420	New Shares issued upon the exercise of share options	None	-
2014.04-08	10	100,000,000	1,000,000,000	54,753,342	547,533,420	New Shares issued upon the exercise of share options	None	-
2014.09	10	100,000,000	1,000,000,000	54,784,842	547,848,420	New Shares issued upon the exercise of share options	None	-
2014.10-12	10	100,000,000	1,000,000,000	62,465,842	624,658,420	New shares issued through capital increase by cash	None	-
2014.10-12	10	100,000,000	1,000,000,000	63,481,815	634,818,150	New Shares issued upon the exercise of share options	None	-
2015.01-03	10	100,000,000	1,000,000,000	63,766,815	637,668,150	New Shares issued upon the exercise of share options	None	-
2015.08	10	100,000,000	1,000,000,000	61,567,815	615,678,150	Cancellation of Treasury Stocks	None	-
2016.11	10	100,000,000	1,000,000,000	60,702,815	607,028,150	Cancellation of Treasury Stocks	None	-
2017.07-12	10	100,000,000	1,000,000,000	61,001,038	610,010,380	New Shares issued upon the exercise of share options	None	-
2018.01-11	10	100,000,000	1,000,000,000	61,698,098	616,980,980	New Shares issued upon the exercise of share options	None	-
2018.12	10	100,000,000	1,000,000,000	59,773,098	597,730,980	Cancellation of Treasury Stocks	None	-
2019.01-04	10	100,000,000	1,000,000,000	60,186,610	601,866,100	New Shares issued upon the exercise of share options	None	-

## B. Capital and Shares

April 23, 2019; Unit: Share

Type of Stock	Authorized Capital			Remark
	Oustanding Shares	Un-issued Shares	Total Shares	
Common Stock	60,186,610	34,613,373	100,000,000	-

## C. Information for shelf registration : Not applicable.

Securities Type	Volume to be issued		Issued Amount		Purpose of Issuance and Expected Benefits for Securities Issued	Scheduled Issuance Period for Securities Unissue	Remarks
	Total Shares	Authorized Amount	Shares	Price (NT\$)			
N/A							

## 4.1.2 Status of shareholders

April 23,2019

Item	Government Agencies	Financial Institutions	Treasury Stocks	Other Juridical Persons	Domestic Natural Persons	Foreign Institutions & Natural Persons	Total
Number of Shareholders	0	2	0	46	11,890	69	12,007
Shareholding (shares)	0	135,000	0	3,355,013	44,844,864	11,851,733	60,186,610
Shareholding Percentage	0%	0.22%	0%	5.57%	74.52%	19.69%	100.00%

Note: The percentage of shareholding for the capital investment from China is 0.36%.

## 4.1.3 Shareholding distribution status

April 23,2019, Unit:shares/%

Class of Shareholding (Unit : Share)	Number of Shareholders	Shareholding (Shares)	Percentage
1 ~ 999	2,821	35,452	0.06%
1,000 ~ 5,000	7,790	14,410,278	23.95%
5,001 ~ 10,000	725	5,893,769	9.79%
10,001 ~ 15,000	196	2,560,000	4.25%
15,001 ~ 20,000	136	2,552,250	4.24%
20,001 ~ 30,000	127	3,240,070	5.38%
30,001 ~ 40,000	56	2,050,752	3.41%
40,001 ~ 50,000	33	1,548,026	2.57%
50,001 ~ 100,000	54	3,733,610	6.20%
100,001 ~ 200,000	29	4,181,868	6.95%
200,001 ~ 400,000	22	6,902,968	11.47%
400,001 ~ 600,000	9	4,297,915	7.14%
600,001 ~ 800,000	4	2,820,000	4.69%
800,001 ~ 1,000,000	2	1,829,652	3.04%
1,000,001 or over	3	4,130,000	6.86%
Total	12,007	60,186,610	100.00%

#### 4.1.4 List of major shareholders

April 23,2019;Unit:shares/%

Shareholder's Name	Shareholding	
	Shares	Percentage
Capital Securities Corp. in custody for Capital HK customers	1,604,000	2.67%
Citibank in custody for Nomura International Limited	1,426,000	2.37%
Tian-Huo Chen	1,100,000	1.83%
Johnny Shyang-Lin Shen	1,041,652	1.73%
Standard Chartered Bank in custody for KGI Asia Limited	888,000	1.48%
Tsang-Hai Lin	766,000	1.27%
Ling-Mei Chen	700,000	1.16%
CTBC Banck in custody for Kinying Kwan	680,000	1.13%
Matthews Asia Small Companies Fund	674,000	1.12%
Allianz Global Investors Taiwan Technology Fund	600,000	1.00%

#### 4.1.5 Market price, net worth, earnings per share,dividends per common share

Unit: NT\$; Thousand of Shares

Items	2017	2018	As of April 23,2019
<b>Market Price per Share</b>			
Highest Market Price	131.5	165	89.5
Lowest Market Price	28.5	61.6	64.2
Average Market Price	68.11	109.91	79.8
<b>Net Worth per Share</b>			
Before Distribution	44.50	48.87	-
After Distribution	43.45	(Note 1)	-
<b>Earnings per Share</b>			
Weighted Average Shares (thousand shares)	60,772	61,039	-
BasicEarnings Per Share	5.08	4.22	-
<b>Dividends per Share</b>			
Cash Dividends	1.0493	(Note1)	-
Stock Dividends			
Dividends from Retained Earnings	-	-	-
Dividends from Capital Surplus	-	-	-
Accumulated Undistributed Dividends	-	-	-
<b>Return on Investment</b>			
Price / Earnings Ratio (Note2)	13.41	26.05	-
Price / Dividend Ratio (Note 3)	64.91	(Note 1)	-
Cash Dividend Yield Rate (Note 4)	0.015	(Note 1)	-

Note 1 : Pending on the approval of 2019 shareholders' meeting.

Note 2 : Price / Earnings Ratio = Average Market Price / Earnings per Share

Note 3 : Price / Dividend Ratio = Average Market Price / Cash Dividends per Share

Note 4 : Cash Dividend Yield Rate = Cash Dividends per Share / Average Market Price



#### **4.1.6 Company's Dividend Policy and Implementation Status**

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**A. The Company's Dividend Policy: The regulations of dividend distribution are shown below in accordance to the Memorandum and Articles of Association of the Company.**

- (1) The Company shall set aside no less than 1% of its annual profits (the annual profits specified in this Article refers to the annual income before tax and before bonuses are set aside for employees and Directors) as bonus to employees of the Company and set side no more than 2% of its annual profits as bonus to Directors, provided however that the Company shall first offset its losses in previous years that have not been previously offset. The distribution of bonus to employees may be made by way of cash or Shares, which may be distributed under an incentive programme approved pursuant to Article 11.1 above. The employees under Article 34.1 may include certain employees of the Subsidiaries who meet the conditions prescribed by the Company. The distribution of bonus to employees and to Directors shall be approved by a majority of the Directors present at a meeting attended by two-thirds or more of the total number of the Directors and shall be reported to the Members at the general meeting. A Director who also serves as an executive officer of the Company and/or its Subsidiaries may receive a bonus in his capacity as a Director and a bonus in his capacity as an employee.
- (2) As the Company is in the growing stage, the dividend distribution may take the form of a cash dividend and/or stock dividends and shall take into consideration the Company's capital expenditures, future expansion plans, and financial structure and funds requirement for sustainable development needs etc. The Company may distribute profits in accordance with a proposal for distribution of profits prepared by the Directors and approved by the Members by an Ordinary Resolution at any general meeting. The Directors shall prepare such proposal as follows: the proposal shall begin with the Company's Annual Net Income after tax and offset its losses in previous years that have not been previously offset, and set aside a special capital reserve, if one is required, in accordance with the Applicable Public Company Rules or as requested by the authorities in charge. Except otherwise stipulated by the applicable laws and the Applicable Public Company Rules, the Company may take into consideration the circumstances and development stage of the Company, in response to any future funding requirement and long term financial planning, while satisfying the shareholders expectation in respect of cashflow, propose profit distribution plan in connection with the retained earnings for approval at the meetings of the shareholders; the distribution of retained earnings may proceed by way of cash dividend or by applying such sum in paying up in full unissued Shares for allotment and distribution credited as fully paid-up pro rate to the Members, and the total amount of Dividends shall not be lower than 10% of the profit of the then current year after deducting the aforementioned amounts, and provided the total amount of cash dividend to be distributed shall be no lower than 10% of the aggregate dividend distributed to shareholders and no more than 100% of the aggregate dividend distributed to shareholders.
- (3) The Directors shall specify the exact percentages or amounts to be distributed as bonuses to Directors and employees in preparing the proposal for distribution of profits, and the Members may amend such proposal prior to its approval. A Director who also serves as an executive officer of the Company may receive a bonus in his capacity as a Director and a bonus in his capacity as an employee. Except otherwise stipulated by the applicable laws and the Applicable Public Company Rules, the Company may take into consideration the circumstances and development stage of the Company, in response to any future funding requirement and long term financial planning, while

satisfying the shareholders expectation in respect of cashflow, propose profit distribution plan in connection with the retained earnings for approval at the meetings of the shareholders; the distribution of retained earnings may proceed by way of cash dividend or by applying such sum in paying up in full unissued Shares for allotment and distribution credited as fully paid-up pro rate to the Members, and the total amount of Dividends shall not be lower than 10% of the profit of the then current year after deducting the aforementioned amounts, and provided the total amount of cash dividend to be distributed shall be no lower than 10% of the aggregate dividend distributed to shareholders and no more than 100% of the aggregate dividend distributed to shareholders.

- (4) Subject to the Statute, the Articles and the Applicable Public Company Rules, the Directors may declare Dividends and distributions on Shares in issue and authorise payment of the Dividends or distributions out of the funds of the Company lawfully available therefor. No Dividend or distribution shall be paid except out of the realised or unrealised profits of the Company, or out of the share premium account or as otherwise permitted by the Statute.
- (5) Except as otherwise provided by the rights attached to Shares, all Dividends shall be declared and paid in proportion to the number of Shares that a Member holds. If any Share is issued on terms providing that it shall rank for Dividend as from a particular date that Share shall rank for Dividend accordingly.
- (6) The Directors may deduct from any Dividend or distribution payable to any Member all sums of money (if any) then payable by him to the Company on any account.
- (7) The Directors may, after obtaining an Ordinary Resolution, declare that any distribution other than a Dividend be paid wholly or partly by the distribution of specific assets and in particular of shares, debentures, or securities of any other company or in any one or more of such ways and where any difficulty arises in regard to such distribution, the Directors may settle the same as they think expedient and fix the value for distribution of such specific assets or any part thereof and may determine that cash payments shall be made to any Members upon the basis of the value so fixed in order to adjust the rights of all Members and may vest any such specific assets in trustees as may seem expedient to the Directors.
- (8) Any Dividend, distribution, interest or other monies payable in cash in respect of Shares may be paid by wire transfer to the holder or by cheque or warrant sent through the post directed to the registered address of the holder. Every such cheque or warrant shall be made payable to the order of the person to whom it is sent.
- (9) No Dividend or distribution shall bear interest against the Company.
- (10) Any Dividend which cannot be paid to a Member and/or which remains unclaimed after six months from the date of declaration of such Dividend may, in the discretion of the Directors, be paid into a separate account in the Company's name, provided that the Company shall not be constituted as a trustee in respect of that account and the Dividend shall remain as a debt due to the Member. Any Dividend which remains unclaimed after a period of six years from the date of declaration of such Dividend shall be forfeited and shall revert to the Company.

Note: The proposal for the amendment to the Memorandum and Articles of Association was approved by the Board of the Company on May 3, 2019 and will be submitted to 2019 Annual general Meeting for Shareholders' approval.

#### **B. Proposed Distribution of Dividend for 2019 Annual General Meeting**

The company will propose distribution of cash dividend US\$2,915,450 (US\$0.04875 per share) at the 2019 Annual General Meeting.

#### **4.1.7 The influence of stock dividend distribution resolved by 2018 Annual General Meeting on the Company's operating performance and earning per share (EPS)**

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Not applicable.

#### **4.1.8 Directors' Remuneration and Employee Compensation**

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**A. The percentages or ranges with respect to compensation to employees and Directors as set forth in the company's Articles of Incorporation:**

The Company will allocate no less than 1% as compensation to employees and no more than 2% as compensation to Directors of its profits before tax prior to the deduction of compensation to employees and Directors for the year, respectively.

**B. The basis for estimating the amount of compensation to employees and Directors, the basis for calculating the number of shares to be distributed as stock bonuses, and the accounting treatment of discrepancy, if any, between the actual distributed amount and the estimated figure, for the current period:**

The Company proposed distribution of compensation to employees and directors are US\$986,403 and US\$246,601 respectively at the Board meeting on March 15, 2019. If there is discrepancy between the actual distributed amount and the estimated figure, it will be adjusted to enter into accounts according to changes in accounting estimate at the year of distribution.

**C. Information on the distribution of compensation approved by the Board of Directors:**

(1) Distribution in cash or shares of compensation to employees and Directors. If there are any discrepancies between such an amount and the estimated figure for the year these expenses are recognized, the discrepancy, reasons therefor, and how it is treated shall be disclosed: None.

(2) The amount of distribution in shares of compensation to employees, and as a percentage of the sum of the current after-tax net income on individual or separate financial statements and total compensation to employees: None.

**D. The actual distribution of compensation to employees and Directors for the previous year (including the share number, dollar amount, and stock price, of the shares distributed), and, if there is any discrepancy between the actual distribution and the recognized compensation to employees and directors, additionally the discrepancy, reasons therefor, and how it is treated: None.**

#### 4.1.9 List of Share Buyback as of April 23, 2019

Batch Order	1 <sup>st</sup> Batch	2 <sup>nd</sup> Batch	3 <sup>rd</sup> Batch	4 <sup>th</sup> Batch	5 <sup>th</sup> Batch
Purpose of the Buyback	Maintain the company's credibility and shareholders' equity	Maintain the company's credibility and shareholders' equity	Maintain the company's credibility and shareholders' equity	Maintain the company's credibility and shareholders' equity	Maintain the company's credibility and shareholders' equity
Actual Buyback period	2015/03/06~2015/05/05	2015/05/15~2015/06/12	2016/8/26~2016/9/26	2017/3/13~2017/5/9	2018/9/12~2018/10/30
Price range for Buybacks	NT\$50.05 to NT\$123.82	NT\$35.91 to NT\$87.58	NT\$19.01~ NT\$41.21	NT\$28.88 ~NT\$57.54	NT\$64.26 ~NT\$167.94
Number of shares bought back	1,015 thousand shares of common stock	1,184 thousand shares of common stock	865 thousand shares of common stock	0 shares of common stock	1,925 thousand shares of common stock
Total Value of Shares bought back	NT\$60,917,192	NT\$52,462,561	NT\$21,692,815	NT\$0	NT\$157,947,222
Number of shares that have already been canceled and transferred	1,015 thousand shares of common stock	1,184 thousand shares of common stock	865 thousand shares of common stock	0 shares of common stock	1,925 thousand shares of common stock
Accumulated number of shares held by the Company	0 share of common stock	0 share of common stock	0 share of common stock	0 share of common stock	0 shares of common stock
Ratio of the accumulated number of shares held by the Company to the total number of ordinary shares issued	0%	0%	0%	0%	0%

#### 4.1.10 Information on the Company's issuance of bonds

None.

#### 4.1.11 Information on issuance of preferred shares

None.

#### 4.1.12 Information on issuance of global depository receipts

None.

#### 4.1.13 Employee Stock Options

##### A. Issuance of Employee Stock Options

March 31, 2019

Types of Employee Stock Options	Employee Stock Options in 2003 (Note 2(1))	Employee Stock Options in 2015		Employee Stock Options in 2016		Employee Stock Options in 2017					
		March 30, 2015	April 24, 2015	March 4, 2016	November 11, 2016	March 10, 2017	November 28, 2017	December 5, 2017	January 5, 2017	February 7, 2018	
Approval date	Not applicable										
Issue date	(Note 2(2))										
Units issued	14,518,700	864,000	1,136,000	800,000	330,000	500,000	329,000	95,000			
Shares of stock options to be issued as a percentage of outstanding shares	24.25%	1.44%	1.90%	2.00%	1.34%	0.55%	0.83%	0.55%		0.16%	
Period	The stock options shall be valid for 10 years from the Grant date and shall expire after such period										
Method of performance	Issuance of new shares										
Period and percentage in which subscription is restricted (%)	(Note 2(3))	After two full years, 50% of stock options can be exercised. After three full years, 75% of stock options can be exercised. After four full years, 100% of stock options can be exercised.									
Exercised shares	7,399,323	267,359	257,226	42,500	51,000	0	0	0	0	0	
Amount of the shares exercised	US\$9,248,315.44	NT\$15,346,406.60	NT\$9,723,142.80	NT\$1,079,500	NT\$2,126,700	NT\$0	US\$0	NT\$0	NT\$0	NT\$0	
Unexercised shares	143,736	541,641	701,774	957,500	605,000	330,000	420,000	302,000	85,000		
Price per share of the unexercised shares	An average of US\$2.5091	NT\$57.40	NT\$37.80	NT\$25.40	NT\$41.70	NT\$84.50	NT\$78.00	NT\$99.20	NT\$96.90		
Percentage of unexercised shares to total issued shares	0.24%	0.90%	1.17%	1.60%	1.01%	0.55%	0.70%	0.50%		0.14%	

Types of Employee Stock Options	Employee Stock Options in 2003 (Note 2(1))	Employee Stock Options in 2015	Employee Stock Options in 2016	Employee Stock Options in 2017
Approval date	Not applicable	March 30, 2015	April 26, 2016	April 25, 2017
Issue date	(Note 2(2))	April 24, 2015	November 11, 2016	November 28, 2017
Number of invalid shares (Note 1)	6,975,641	55,000	200,000	0
Impact on possible dilution of shareholdings	(Note 2(4))	177,000	144,000	80,000
Financial Statements will be presented in accordance with the International Accounting Standards. However, after two full years upon expiration of the employee stock options granted by the Company, 50% of the granted stock options can be exercised. After three full years, 75% of stock options can be exercised. After four full years, 100% of stock options can be exercised. The influence on shareholders' interests will be gradually diluted.				

Note 1: The number of invalid shares were from employees' turnover and expired employee stock options.

Note 2: (1) Amendments to 2003 Employee Stock Options have been adopted by the Board of Directors in July 2010 to replace the aforementioned rules.

(2) 1,500,000 shares were issued on 2003/04/09; 505,200 shares were issued on 2003/06/06; 940,000 shares were issued on 2003/08/08; 179,600 shares were issued on 2003/10/13; 964,000 shares were issued on 2003/12/22; 374,200 shares were issued on 2004/04/02; 293,000 shares were issued on 2004/06/18; 732,400 shares were issued on 2005/01/14; 219,000 shares were issued on 2005/04/15; 995,000 shares were issued on 2005/07/15; 318,000 shares were issued on 2005/12/16; 230,000 shares were issued on 2006/01/17; 610,600 shares were issued on 2006/04/20; 412,000 shares were issued on 2006/07/31; 644,000 shares were issued on 2006/10/18; 474,000 shares were issued on 2007/01/29; 411,500 shares were issued on 2007/04/27; 950,000 shares were issued on 2007/09/21; 892,500 shares were issued on 2007/10/19; 357,000 shares were issued on 2008/01/25; 627,300 shares were issued on 2008/04/29; 421,000 shares were issued on 2008/07/25; 530,000 shares were issued on 2008/10/30; 282,000 shares were issued on 2009/02/05; 248,000 shares were issued on 2009/04/24; 321,000 shares were issued on 2009/07/31; 424,000 shares were issued on 2009/10/30; 392,000 shares were issued on 2010/01/15; 139,000 shares were issued on 2010/05/07.

(3) After one full year, 25% of stock options can be exercised, with 1/48 of the total shares vesting every month.

(4) Financial Statements will be presented in accordance with the International Accounting Standards. However, after one full year upon expiration of the employee stock options granted by the Company, 25% of the granted stock options can be exercised, with 1/48 of the total shares vesting every month. The influence on shareholders' interests will be gradually diluted. There are 143,736 shares that are estimated to be able to subscribe by the end of 2019, accounted for 0.24% of 59,881,348 shares of common stocks current issued and outstanding currently.

Types of Employee Stock Options	Employee Stock Options in 2017		Employee Stock Options in 2018	
	Approval date	April 25, 2017	May 21, 2018	March 19, 2019
Issue date	March 30, 2018	April 18, 2018	August 10, 2018	September 20, 2018
Units issued	250,000	200,000	500,000	500,000
Shares of stock options to be issued as a percentage of outstanding shares	0.42%	0.33%	0.83%	0.83%
Period	The stock options shall be valid for 10 years from the Grant date and shall expire after such period			
Method of performance	Issuance of new shares			
Period and percentage in which subscription is restricted (%)	After two full years, 50% of stock options can be exercised. After three full years, 75% of stock options can be exercised. After four full years, 100% of stock options can be exercised.			
Exercised shares	0	0	0	0
Amount of the shares exercised	NT\$0	NT\$0	NT\$0	NT\$0
Unexercised shares	245,000	185,000	460,000	484,800
Price per share of the unexercised shares	NT\$119.50	NT\$125.50	NT\$123.50	NT\$88.80
Percentage of unexercised shares to total issued shares	0.41%	0.31%	0.77%	0.81%
Number of invalid shares (Note 1)	0	0	0	0
Impact on possible dilution of shareholdings	Financial Statements will be presented in accordance with the International Accounting Standards. However, after two full years upon expiration of the employee stock options granted by the Company, 50% of the granted stock options can be exercised. After three full years, 75% of stock options can be exercised. After four full years, 100% of stock options can be exercised. The influence on shareholders' interests will be gradually diluted.			

Note 1 : The number of invalid shares were from employees' turnover and expired employee stock options.

**B. List of executives and the top ten employees receiving Employee Stock Options**

March 31, 2019

	Title	Name	No. of Subscribed Shares	Ratio of Subscribed Shares to Total Issued Shares	Exercised				Unexercised			
					No. of Shares	Price (US\$)	Amount (US\$ thousand)	Ratio of Shares to Total Issued Shares	No. of Shares	Price (US\$)	Amount (US\$ thousand)	Ratio of Shares to Total Issued Shares
	CEO	Johnny Shyang-Lin Shen			137	2.5091	350.07	0.23%	0	2.5091	0	0%
	COO	Jacky Ni (Note 12)			80	1.8079 (Note 1)	144.62	0.13%	400	1.8079 (Note 1)	723.16	0.67%
	Sales VP of Japan Business Unit	Kozo Fujita (Note 13)			20	1.1906 (Note 2)	23.81	0.03%	239	1.1906 (Note 2)	432.09	0.40%
	GM of Japan Business Unit	Junichiro Hosaka			0	0.7990 (Note 3)	0	0%	975	0.7990 (Note 3)	779.03	1.63%
	GM of China Business Unit	Andy Lin			0	1.3434 (Note 4)	0	0%	50	1.3434 (Note 4)	67.17	0.08%
	GM of US Business Unit	Hiroyuki Nagashima	3,166	5.29%	0	2.8171 (Note 5)	0	0%	70	2.8171 (Note 5)	197.20	0.12%
	VP of Design Engineering	Leo Cheng			0	2.6013 (Note 6)	0	0%	500	2.6013 (Note 6)	1,300.65	0.81%
	VP of Sales	Rebert Chang			0	3.3627 (Note 7)	0	0%	15	3.3627 (Note 7)	50.44	0.03%
	CFO	Daniel Wang			0	4.0228 (Note 8)	0	0%	320	4.0228 (Note 8)	1,287.30	0.53%
	Financial Controller	Nancy Chan			0	2.4749 (Note 9)	0	0%	360	2.4749 (Note 9)	890.96	0.60%
	VP of SA	Peter Teng										
	Executives											



	Title	Name	No. of Subscribed Shares	Ratio of Subscribed Shares to Total Issued Shares	Exercised				Unexercised				
					No. of Shares	Price (US\$)	Amount (US\$ thousand)	Ratio of Shares to Total Issued Shares	No. of Shares	Price (US\$)	Amount (US\$ thousand)	Ratio of Shares to Total Issued Shares	
Top Ten Employees	VP of Corporate Marketing	David Chiang			93.67	2,5091	235.01	0.16%	28.34	2,5091	71.10	0.05%	
	Director of Design Solution	Doni Ding			100	1,8079 (Note 1)	180.79	0.17%	120	1,8079 (Note 1)	216.95	0.20%	
	Deputy GM of Japan Business Unit	Hiroyuki Furuzono			64.75	1,1906 (Note 2)	77.09	0.11%	123.25	1,1906 (Note 2)	146.74	0.21%	
	Director of Corporate HR	Daisy Hsu			7.5	0,7990 (Note 3)	5.99	0.01%	57.5	0,7990 (Note 3)	37.95	0.08%	
	VP of R&D	James Huang			5	1,3434 (Note 4)	6.72	0.01%	33	1,3434 (Note 4)	44.33	0.06%	
	VP of MFG Engineering	Vincent Ku		997.6	1.67%	0	2,8171 (Note 5)	0	0%	150	2,8171 (Note 5)	422.57	0.25%
	Sr. Director of Circuit Technologies	Allan Lin				0	3,3627 (Note 7)	0	0%	40	3,3627 (Note 7)	134.51	0.07%
	Sr. Director of Quality System	Mark Lo				0	4,1058 (Note 10)	0	0%	10	4,1058 (Note 10)	41.06	0.02%
	Director of Design Engineering	Mitsuya Takashima				0	4,0228 (Note 8)	0	0%	95	4,0228 (Note 8)	382.17	0.16%
	Director of Design Engineering	Feiwei Wu				0	2,8841 (Note 11)	0	0%	29.6	2,8841 (Note 11)	85.37	0.05%
					0	2,4749 (Note 9)	0	0%	50	2,4749 (Note 9)	123.75	0.08%	

Note 1: The price of the stock option is NT\$57.40.

Note 2: The price of the stock option is NT\$37.80.

Note 3: The price of the stock option is NT\$25.40.

Note 4: The price of the stock option is NT\$41.70.

Note 5: The price of the stock option is NT\$84.50.

Note 6: The price of the stock option is NT\$78.00.  
Note 7: The price of the stock option is NT\$99.20.  
Note 8: The price of the stock option is NT\$123.50.  
Note 9: The price of the stock option is NT\$76.30.  
Note 10: The price of the stock option is NT\$119.50.  
Note 11: The price of the stock option is NT\$88.80.  
Note 12: Mr. Jacky Ni resigned from COO on March 15, 2019.  
Note 13: Mr. Kozo Fujita resigned from insider on March 15, 2019.

**C. Status of any private placement of employee stock warrants during the 3 most recent years and up to the date of the publication of the Annual Report:**  
None.

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**4.1.14 Issuance of New Restricted Employee Shares**

None.

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**4.1.15 Status of mergers or acquisitions**

None.

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**4.1.16 Issuance of new shares for merging and transferring the stocks of other companies**

None.

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**4.2 Implementation of Fund Usage Plan**

None.

## V. Overview of Business Operations

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### 5.1 Business Activities

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#### 5.1.1 Business scope

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##### A. Main areas of business operations

Alchip engages in Application Specific IC (ASIC) and System-on-Chip (SoC) design, manufacturing and production, and is especially good at deep-submicron and high-end processing chips with high complexity.

##### B. Operational proportion

Unit:NT\$ thousand;%

Category	2017		2018	
	Amount	%	Amount	%
ASIC and Chip production	4,208,346	96.52	3,302,059	95.69
NRE	51,887	3.37	30,720	0.89
Others	5,410	0.11	117,899	3.42
Total	4,265,643	100.00	3,450,678	100.00

##### C. Main products and Services

- (1) ASIC and Chip production : Provide customers with Non-Recurring Engineering (NRE) of Application Specific Integrated Circuit (ASIC) and System on Chip (SoC), and mass production management of wafer manufacturing, packaging, and testing.
- (2) Non-Recurring Engineering (NRE) : Mainly provide the circuit design component database and all kinds of Silicon Intellectual Property (SIP) required by product design, produce circuit diagrams for mask process, and manufacture masks, wafer, cutting, and packaging on a consign basis and then deliver the trial production samples after doing product testing by our engineers.
- (3) Others : Only provide customers with back-end wafer fabrication, packaging, and testing.

##### D. New products development

The Company will continue to endeavor to R&D and manufacturing of state-of-the-art integrated circuit to enhance technologies and ensure quality of service, including special customized design software tools required by SoC development, R&D in the internal Design Methodology, and advanced design technology. It will also provide the most effective solution depending on different market segment, and establish corresponding platforms and Silicon Intellectual Property solutions (including: DDR/LVDS/OSC/AFE/USB/PCIE).

### 5.1.2 Industry overview

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#### A. Current status and Development of the Industry

With the great leap forward in semiconductor process technology, the complexity of chips is getting higher and higher. The semiconductor industry announces to enter an era of specialization. The Company specially provides design and manufacturing services of Application Specific Integrated Circuit (ASIC) and System on Chip (SoC) with high complexity and mass production. The current status and development of the industry is described as follows :

- (1) Rise of fabless ASIC

In the past, a system company could choose to develop its own ASIC/SoC to get the advantage of differentiation and stay competitive, or to entrust the turnkey production process including design, manufacturing, packaging, and testing to reliable ASIC partners (such as IBM and LSI Logic). However, as the process technology enters into the generation of deep submicron, expenditures on R&D in technology, investments in machinery, equipment, and factories rise rapidly. The existing Integrated Design Manufacturers (IDMs) are unable to afford the investment in the infrastructure and overtaken by pure-play foundries. As a result, more system companies concentrate resources on product specifications and front-end design, and outsource the back-end design and production of products to professional fabless ASIC companies.

Through collaboration with strategic partners (including wafer fabrication, packaging, and testing house), a fabless ASIC company provides a complete solution from RTL/Netlist to chip manufacturing, packaging, and testing. Thus, the system company enjoys the faster time to market, lower costs, and more professional design capability.

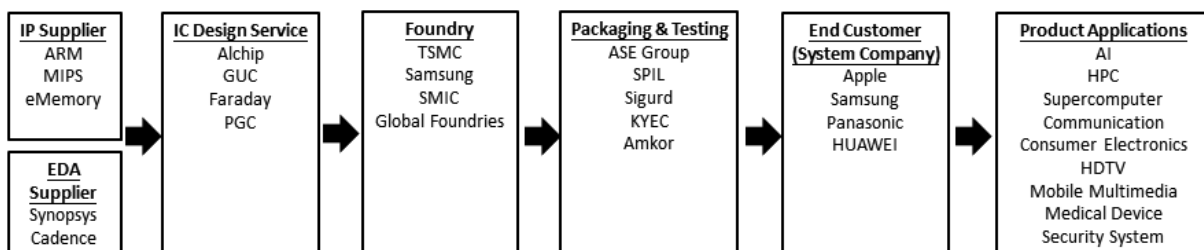
(2) Overview of System on Chip (SoC)

With the evolution of IC manufacturing process and many consumer electronics development towards miniaturization, the market demand for thin, short, power-saving multifunction increase dramatically, this makes SoC become the trend for the development of system companies in the future. SoC refers to the integration of the core processor, logic unit, memory unit, and a variety of I/O interfaces onto a single chip. One chip alone can get the system function completely and leave the extra space to chips performing other different functions, such as GPS positioning, WiMax, Audio/Video IC, camera IC, TV chip, etc. through which the operational functions of system products can be enhanced.

Since all stages of the SoC design have encountered validation and analysis bottlenecks, the difficulty in integration will greatly increase when using external IPs. In addition, the investment amount surges and the risk in design iteration increases while the process moving towards more sophisticated nanoscale development. Only through design provide solutions from allocation and specifications to design principles working closely together with the back-end process can high value added services to customers. At present, there is a lack of large and capable fabless ASIC companies in the industry. Therefore, not many orders are released from system big firms, which leaves plenty of room for future growth in the market.

**B. Relevance among the upper-stream, middle-stream and down-stream in the industry**

The fabless ASIC industry drives the development of all system applications, silicon intellectual property (SIP), manufacturing, packaging, testing, etc., forming the industry chain with specialization and division of labor. Each performs one's own functions as shown below :



### **C. Trends of product development**

- (1) Application Specific Integrated Circuit (ASIC) : It refers to an integrated circuit used in the particular application. On the circuit board, one unit of ASIC chip specifically designed by each company can always be found. The ASIC chip application market is broadly divided into six segments including Computers and Peripherals, Wired Communications, Wireless Communications, Consumer, Automotive, and Industrial and Others. In which, consumer electronics still account for the highest proportion with the growth momentum mainly coming from mobile communications and high-definition TV applications, and wireless communications, computers, and peripherals coming in second.
- (2) System on Chip (SoC) : With the evolution of the process, all system functions can be integrated into a single chip. That is, the platform-based design method can be achieved through the highly integrated SoC. This design method can effectively solve issues such as the complexity and time to market of different grades of products. In the future, we can foresee that the consumer electronics can be platformized as a result of the design trend of SoC integrated chips.

### **D. Market competition**

The primary competitors of fabless ASIC companies are Integrated Design Manufacturer (IDM) and companies of the same type. As we shift into the generation of deep submicron, large IDMs begin to decline and find themselves unable to compete with fabless ASIC companies because of the high cost of production. Currently, most IDMs gradually transform into the Fab-lite/Fabless model. Moreover, in the competition with other companies of the same type, the time to market of products becomes the main appeal of fabless ASIC customers. With the continuous improvement of the processing speed of chips, and the algorithm of modulation and demodulation becoming more complex at the same time, the designers have to evaluate carefully how to define and optimize the low-power consumption strategy for the entire chip in the shortest design cycle, and think deeply about how the package design can tolerate the ultra-high power consumption to ensure the signal quality of high-speed interfaces. Therefore, only with fabless ASIC companies holding professional technical capabilities and capable of providing integration services can we stay ahead under the circumstances of the intense competition.

### **5.1.3 Research and Development**

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**A. In 2018 and 2017, the Company invested NT\$620,393 thousand and NT\$522,377 thousand in R&D respectively.**

#### **B. Technologies have been developed successfully**

Alchip combines the software tools for design (EDA) and design technologies that are researched and developed internally, including circuits, physical design, and unique software tools for design, to provide customers with services improving efficiency, reduced size, lower power consumption, and fast deployment. Technologies that are researched and developed internally are shown below:

- (1) Hierarchical physical design and timing budgeting method : Through this method, the chip design can be divided into multiple parts that can be designed at the same, grasp the timing of each part while controlling the timing for each part to meet timing requirements for chips.
- (2) Physical design method : Through this method, various types of Silicon Intellectual Property (IP) are used in the high-density chip design to reduce the chip size and achieve cost cutting goals.
- (3) Timing and electrical design method : This method can improve the defect-free rate by adjusting several parameters.

- (4) Power consumption distribution method : This method can reduce power consumption and enhance electrical efficiency.
- (5) Design for Testability (DFT) : This method can maximize the scope of testability and reduce other unnecessary tests reduce the testing time and cost.
- (6) Technology in the stage of product planning and specification development : Alchip conducts the cost planning for customers, including the selection of System-on-Chip (SoC) or System in Package (SiP), planning of system cost and bill of material (BOM) costs, consideration of process maturity and Silicon Intellectual Property (IP) stability, feasibility of next-generation process (half node), and evaluation on Static Random Access Memory (SRAM) repair. It also makes selection for testing of finished products and solutions, including the joint development of test solutions with IP vendors, establishment of built-in test module (DFT, BIST), and with testing machines to achieve mass production, adoption of two sets, four sets, or even eight sets of circuit boards being tested simultaneously while making mass production to save testing cost. Finally, it develops the most appropriate packaging approach and builds a good partnership with the packaging house to exploit the best quality of the finished product and market efficiency.
- (7) Prototype and technology in the stage of production : In the prototype creation and chip mass production stage, Alchip works closely with suppliers via professional equipment and technology (built-in testing machines and test grips) to help customers reduce the time taken to enter mass production while analyzing product characteristics and sensitivity, and to formulate process conditions and test specifications for the mass production process. It also provides a small number of prototypes for customers to manufacture system engineering prototyping machines. In the final acceptance inspection process of prototyping machines of customers, Alchip prepares the mass production of chips, including the analysis on reliability/qualification. Upon entering mass production, it continues to improve the defect-free rate and shorten the testing time to reduce production costs for customers.

### C. Products have been developed successfully

Alchip have developed 300 units of products since its establishment. Products can be divided into three domains as described below:

Three domains	Product application	Current status/Process	Design outlook and planning
AI/HPC/ Communication Category	AI	<ul style="list-style-type: none"> <li>• Including 28nm/12nm</li> <li>• 2018: 2 design cases, have been in mass production</li> </ul>	Continued to design and mass produce the chips required by system big firms
	HPC	<ul style="list-style-type: none"> <li>• Including 40nm/16nm</li> <li>• 2018: 3 design cases, have been in mass production</li> </ul>	Continued to design and mass produce the chips required by system big firms
	Information Network Equipment	<ul style="list-style-type: none"> <li>• Including 65nm/55nm/40nm</li> <li>• 2010: 1 design case, has been in mass production</li> <li>• 2011: 3 design cases, have been in mass production</li> <li>• 2012: 2 design cases, have been in mass production</li> <li>• 2013: 2 design cases, have been in mass production</li> </ul>	Continued to design and mass produce the chips required in communication network LTE, TD-SCDMA for communication big firms.

	Supercomputer	<ul style="list-style-type: none"> <li>• Including 90nm/65nm/40nm/28nm/16nm</li> <li>• 2006: 1 design case, has been in mass production</li> <li>• 2010: 1 design case, has been in mass production</li> <li>• 2012: 2 design cases, have been in mass production</li> <li>• 2013: 2 design cases, have been in mass production</li> <li>• 2014: 1 design case, has been in mass production</li> <li>• 2015: 2 design cases, have been in mass production</li> <li>• 2016: 3 design cases, have been in mass production</li> <li>• 2017: 3 design cases</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to mass produce supercomputer networking chips for academic institutions</li> <li>• Cooperate with Z University in 2006, as the world's fastest supercomputer at that time</li> </ul>
Consumer Electronics Category	High-Definition Camera Recorder	<ul style="list-style-type: none"> <li>• Including 65nm/55nm/40nm</li> <li>• 8 design cases, have been in mass production</li> </ul>	Continued to design and mass produce the chips required by Japan's DSC big firms
	High-Definition Digital TV Related Applications	<ul style="list-style-type: none"> <li>• Including 65nm/40nm/32nm</li> <li>• 2010: 7 design cases, have been in mass production</li> <li>• 2011: 6 design cases, have been in mass production</li> <li>• 2012: 5 design cases, have been in mass production</li> <li>• 2013: 8 design cases, have been in mass production</li> <li>• 2014: 1 design case, has been in mass production</li> <li>• 2015: 3 design cases, have been in mass production</li> <li>• 2016: 1 design case, has been in mass production</li> <li>• 2017: 1 design case, has been in mass production</li> <li>• 2018: 1 design case, has been in mass production</li> </ul>	<ul style="list-style-type: none"> <li>• Continued to design and mass produce the chips for Japan's digital TV big firms</li> <li>• Have begun to design the new generation of products</li> </ul>
	Digital Camera	<ul style="list-style-type: none"> <li>• Including 65nm/55nm/40nm/28nm/14nm</li> <li>• 2010: 3 design cases, have been in mass production</li> <li>• 2011: 3 design cases, have been in mass production</li> <li>• 2012: 3 design cases, have been in mass production</li> <li>• 2013: 2 design cases, have been in mass production</li> </ul>	Continued to design and mass produce the chips for the first manufacturer in the world to develop digital cameras

		<ul style="list-style-type: none"> <li>• 2015: 3 design cases, have been in mass production</li> <li>• 2016: 1 design case, has been in mass production</li> <li>• 2017: 1 design case, has been in mass production</li> <li>• 2018: 2 design cases, have been in mass production</li> </ul>	
	Mobile Phone	<ul style="list-style-type: none"> <li>• Including 90nm/55nm/40nm/28nm</li> <li>• 2010: 2 design cases, have been in mass production</li> <li>• 2011: 3 design cases, have been in mass production</li> <li>• 2012: 2 design cases, have been in mass production</li> <li>• 2013: 1 design case, has been in mass production</li> <li>• 2014: 1 design case, has been in mass production</li> </ul>	Continued to design and mass produce the chips required by communication big firms
	Multimedia Player	<ul style="list-style-type: none"> <li>• Including 180nm/130nm/90nm</li> <li>• 2009: 4 design cases, have been in mass production</li> <li>• 2011: 1 design case, has been in mass production</li> <li>• 2012: 1 design case, has been in mass production</li> </ul>	Continued to design and mass produce the chips required by multimedia big firms
	Tablet PC	<ul style="list-style-type: none"> <li>• Including 55nm</li> <li>• 2011: 1 design case, has been in mass production</li> </ul>	Continued to design and mass produce the chips required by multimedia big firms
	Game Machine	<ul style="list-style-type: none"> <li>• Including 90nm/65nm/40nm/28nm</li> <li>• 2012: 1 design case, has been in mass production</li> </ul>	Continued to design and mass produce the chips required by video game machine big firms
Niche Market Category	Bitcoin/Litecoin Mining Machine	<ul style="list-style-type: none"> <li>• Including 28nm/20nm/16nm/14nm/12nm/7nm</li> <li>• 2013: 3 design cases, have been in mass production</li> <li>• 2014: 5 design cases, have been in mass production</li> <li>• 2015: 2 design cases, have been in mass production</li> <li>• 2018: 2 design cases, have been in mass production</li> </ul>	<ul style="list-style-type: none"> <li>• Design and mass produce the world's fastest Bitcoin mining 28nm chip for Swedish company; complete the design of next-generation 16nm chip</li> <li>• Design the chips for a number of Chinese mining equipment &amp; machinery manufacturers</li> </ul>
	Game Machine	<ul style="list-style-type: none"> <li>• Including 28nm</li> <li>• 2014: 1 design case, has been</li> </ul>	Design and mass produce the 28nm game



		<ul style="list-style-type: none"> <li>in mass production</li> <li>• 2016: 1 design case</li> </ul>	machine graphics chip for Japanese big firms
	Medical Imaging Equipment	<ul style="list-style-type: none"> <li>• Including 130nm/28nm</li> <li>• A total of 3 design cases, have been in mass production</li> </ul>	Design and mass produce the chips for Japan's medical device big firm
	Security System Equipment	<ul style="list-style-type: none"> <li>• Including 180nm</li> <li>• 2010: 1 design case, has been in mass production</li> <li>• 2012: 1 design case, has been in mass production</li> <li>• 2013: 1 design case, has been in mass production</li> </ul>	Design and mass produce the chips for several security equipment big firms
Others Category	Automobile Electronics Equipment	<ul style="list-style-type: none"> <li>• Including 180nm</li> <li>• 2011: 1 design case, has been in mass production</li> <li>• 2012: 1 design case, has been in mass production</li> </ul>	Design and mass produce the chips for Japan's system big firms

(1) Success case - the world's fastest supercomputer system chip

Alchip completed the communication network chip used in supercomputers for customers in 2011. This design of ultra high-speed computer system chip achieved one-pass design tapeout and one-pass silicon success. Alchip was responsible for the complete design integration which includes physical, electrical, timing and thermal design of this SoC project. The chip adopted TSMC's 65nm process and contained over 60 million logic gates aiming at 800MHz performance whole chip while consuming over 54 watts of power in 20mm by 17mm die size. Instead of the traditional ring method, the unique two-dimensional array of Area I/O technology was used to narrow the experience area. Finally, Alchip successfully made its output through the flip-chip packaging technology and won the championship of the world's fastest operator thanks to the computing power of its end products. As of now, Alchip has completed a number of supercomputer SoC solutions at 16nmFinFET, the end product's performance broke the world record and became the world's fastest super computer as soon as it released at that time. Alchip has also accomplished 2 design cases among TOP500.

(2) Success cases – tier-one system companies

A. A Company : The Japan's system firm has given its most important product lines to Alchip since 2003, including high-definition digital TV, game machine, digital camera, and video camera.

B. I Company : The Taiwanese I Company has cooperated with Alchip to produce the digital camera chips since 2009. The latest generation of products has been given to Alchip for production.

C. AC Company : One of Top Green 500 HPC supercomputer system firms in Japan has cooperated with Alchip to produce chips.

#### 5.1.4 Long-term and short-term business development plans

In the future, Alchip will still continue to focus on its core businesses – R&D, design and manufacturing in high-end processing SoC, and work closely with world-class manufacturing suppliers to improve Taiwan's international status in the chip design industry through leading technologies. The Company's short- and

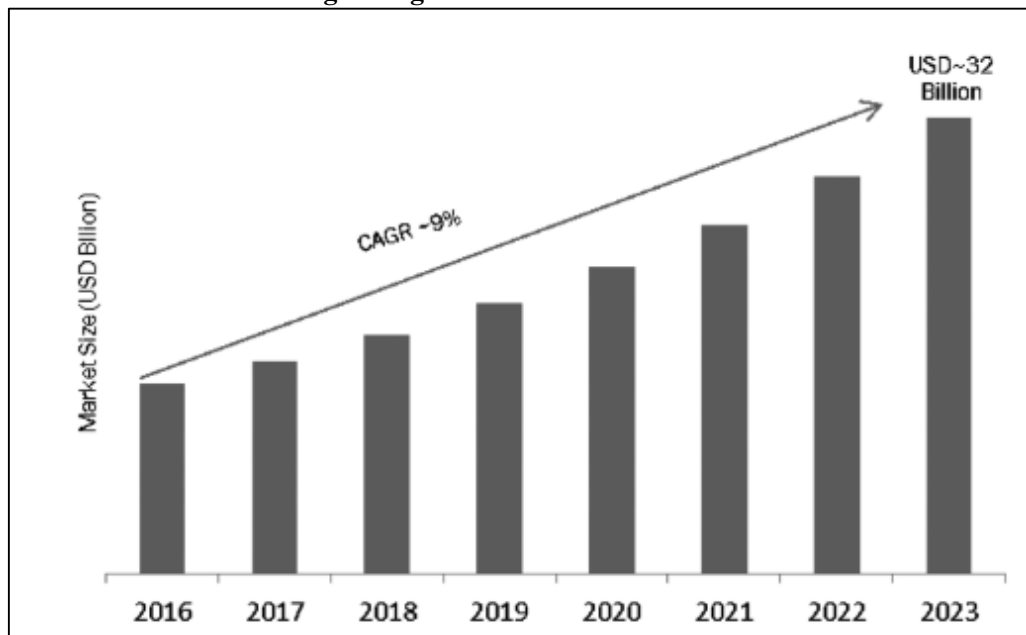
long-term business development plans are described in three aspects of R&D, business, and production as follows.

Item	Short-term business development plan	Long-term business development plan
R&D	<ol style="list-style-type: none"> <li>1. Customize and verify analog circuits</li> <li>2. Optimize the design process, and shorten the time required for the design process.</li> <li>3. Reinforce R&amp;D in the advanced process, and strengthen the ability SoC integration capabilities and advances in quality of design.</li> <li>4. Research and develop the power saving design method.</li> <li>5. At the time of product design, consider clearly DFT, DFM, DFP, etc. to make mass-production costs predictable and controllable.</li> </ol>	<ol style="list-style-type: none"> <li>1. Deepen R&amp;D in the high-end analog circuits customization and verification and expand the Silicon Intellectual Property library.</li> <li>2. Cooperate with foundries, and continuously deep plow the R&amp;D in advanced IC product design.</li> <li>3. Continuously advance the standardization of design process, shorten the design time, reduce the R&amp;D in the power consumption design method.</li> <li>4. Improve the performance and energy saving of silicon intellectual property such as application of ARM high-end processors.</li> <li>5. Intensify SoC front-end design capability, and develop various application platform architecture.</li> <li>6. Enhance the system analysis capability to ensure the predictability of chips being integrated into the system by customers, such as: SI, PI.</li> </ol>
Business	<ol style="list-style-type: none"> <li>1. Focus on system customers, and choose products with a high market potential, especially in HPC/AI related products.</li> <li>2. Introduce the existing products of system customers into the advanced process to reduce costs and power consumption.</li> <li>3. Increase the system integration such as SoC or SiP.</li> <li>4. Develop customers through market orientation, find customers with the development potential, and focus on customers of four domains of the Company.</li> </ol>	<ol style="list-style-type: none"> <li>1. Build service bases for major customers in the world, thoroughly develop long-term partnerships with customers and core technologies, and visibility and market share</li> <li>2. Strengthen the strategic alliance with silicon intellectual property suppliers and long-term partnerships.</li> <li>3. Working with customers to develop various application platform architecture, help customers establish cooperative alliances, and increase the competitiveness of system integration e.g. SoC or SiP.</li> <li>4. Continue to enhance the cooperation between the upstream and downstream firms, and broaden the scope to include market information.</li> </ol>
Production	<ol style="list-style-type: none"> <li>1. Enhance the cooperation among the upstream, midstream, and downstream.</li> <li>2. Provide customers with high-quality supply chain management to create the added value of the production.</li> <li>3. Build long-term partnerships with foundries.</li> </ol>	<ol style="list-style-type: none"> <li>1. Strengthen the link between design and production, continuously reduce production costs, and improve the defect-free rate.</li> <li>2. Provide customers with higher-quality supply chain management and more professional back-end consulting capability to create added values of production.</li> <li>3. Build long-term close partnerships with foundries, including verification and R&amp;D in the Silicon Intellectual Property.</li> </ol>

## 5.2 Market and Sales Overview

### 5.2.1 Market analysis

#### A. The market size of ASIC is growing

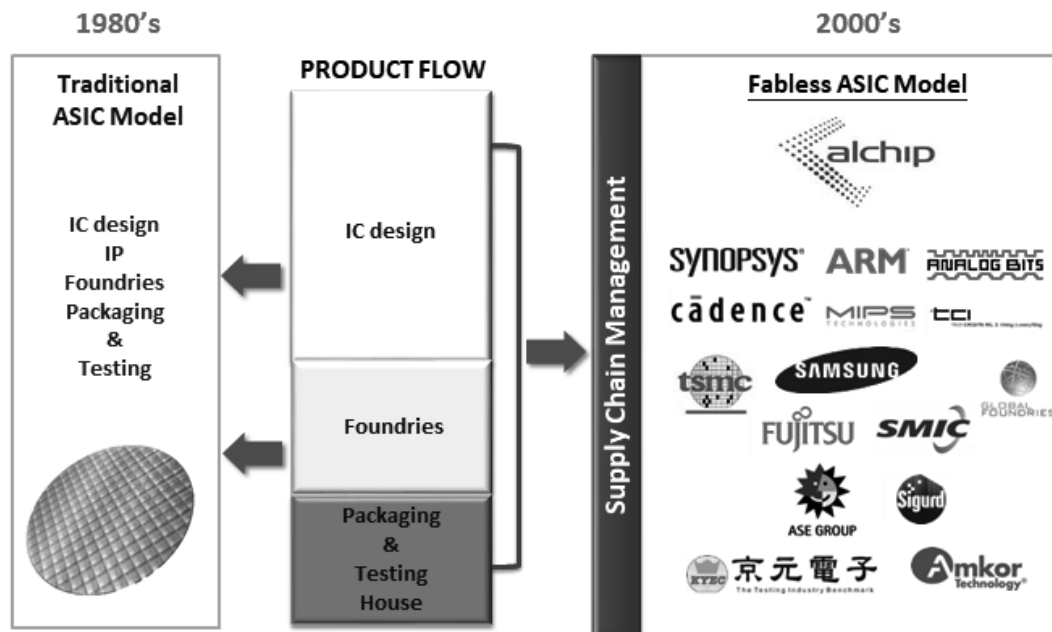


Source: [MRFR Analysis](#), January 2019

Since its invention, semiconductors have been developed for 60 years. Looking at the development of the semiconductor industry after entering the generation of deep submicron, there are three key trends: the business model from system companies' vertical integration to specialization and division of labor nowadays; process technology following Moore's Law developed to date already moving towards 16 nm process node; system products adopting package stacking technology (SiP) and integrated System-on-Chip (SoC) mode to achieve the greatest market competitiveness.

#### (1) Trend I : The industry with specialization and division of labor

The semiconductor industry was mainly a closed production system vertically integrating the upstream, midstream, and downstream until the early 1980s, and the system company undertakes to do everything by itself. The pure play foundry business model was formally established with the foundation of the first pure-play foundry, TSMC, and UMC in 1987. After 2000, the specialization and division of labor in the semiconductor industry is increasingly apparent except that large IDMs still have IC design and foundries. Today, system companies concentrate on the R&D in core technology and engagement in brand marketing, and give the back-end design and production supply chain management to fabless ASIC companies. The fabless ASIC companies allied with their strategic partners to form the industry with specialization and division of labor.



(2) Trend II : High-end process takes the place of low-end process

ASIC design seeks the high-end process to reduce costs, power consumption, and size. In respect of wafer fabrication, as we shift into the generation of submicron and deep submicron, one unit of medium-scaled (5 ~ 10M gate) SoC cost millions of dollars. Mask for 90nm cost approximately 0.7 millions of dollars that exceeded one million dollars after entering the 65 nm process. Mask for 40 nm process cost approximately 2 million dollars and cost more than 5 million dollars for 16nm process. Based on the statistics from the market institution, ICinsights, the market scale of the global foundries is approximately 50.9 billion dollars in 2016. It will increase by a compound annual growth rate of 7.6% from 2016 to 2021, growing from 50.9 billion dollars to 72.1 billion dollars.

(3) Trend III : The system integration gradually moves to SoC (system design) / SiP (Packaging technology) System products are faced with intense market competition. Shorter development time and cost effective design are the primary requirements of customers. ASIC design is not only SiP integration but also a system-level integration. To pursue the high-end process, we have to take the chip packaging and testing technology into account to gain the competitive advantage of cost, power consumption, and volume. In response to the whole new SoC, it may be required to take a lot of time and money, which results in the SiP package stacking technology. Compared with the traditional IC packaging, the SiP package stacking technology can reduce design time, increase packaging density, lower risks, and save system costs. In the future, the SoC will gradually move towards the cross-platform collaboration to make the most competitive integration across platforms through SiP / SoC integration mode.

(4) Trend IV : System manufacturers will gradually move towards outsourcing ASIC design and production

Under the pressure from functional diversity and cost competitiveness, major manufacturers of system products with large demand in markets, such as cameras, tablet PCs, smart phones, etc. have to face cost pressures and future competitiveness. Therefore, they begin to think about the adoption of self-developed ASIC strategy in order to gain advantages of differentiation and competitiveness. System manufactures will concentrate more on keeping core firmware in hand and gradually move towards outsourcing ASIC design and production in terms of software technology.

## B. Sales by region

Unit:NT\$thousand

Regions of sales	2017		2018	
	Amount	%	Amount	%
Taiwan	462,338	10.84	211,552	6.13
Japan	1,709,171	40.07	1,320,636	38.27
Mainland China	1,746,913	40.95	1,577,129	45.70
Europe	22,330	0.52	183,574	5.32
Others	324,981	7.62	157,787	4.58
Total	4,265,643	100.00	3,450,678	100.00

## C. Market share

According to financial information bulletins of companies, the total sales of the domestic design service industry was approximately NT\$21.8 billion in 2018. The Company's operating revenue was approximately NT\$3.45 billion, with market share of 15.82% ranked as the third.

## D. Demand and Supply Conditions for the Market in the Future, and Market Growth Potential

With applications of SoC more widely and diverse needs of end products, IC manufacturers and IC design companies clearly sense that their design productivity is far less than the process technology advanced. To achieve purposes of faster time to market and lower IC design costs, system manufacturers must work with fabless ASIC companies with the capability to integrate various Silicon Intellectual Property. As a result, the demand for fabless ASIC will grow more and more.

From the perspective of growth in all regions, Asia-Pacific region remains the center of future growth, driven by the growth momentum coming from the huge domestic market in Mainland China. The Company constantly researches and develops the design process and technology of advanced processes (28 nm and below) over a long period of time, makes improvements on the use of general commercial software for R&D design (EDA), and enhances its supplier chain management to make products of customer groups lead the market through abundant design resources and technical support while the Company's operating revenue increasing in 2018.

## E. Competitive Niche

### (1) High-end process experience :

Currently the technical experience of fabless ASIC companies for the most part still remains in 90-nm node and above. The design team of Alchip focuses on the design cases with high complexity (over 20 million gates) for advanced processes (28 nm and below), develops and mass produces a series of System on Chip successfully for world-class system companies. It can effectively overcome challenges from electrical closure (including power management, timing convergence, system interface, and signal completeness), Design for Test (DFT), Design for Manufacturing (DFM), or the system-level, and further shorten the design time and enhance the efficiency of chips to help customers reduce costs, increase production efficiency, decrease power consumption, and optimize of chip size.

### (2) Customization service :

To satisfy customer needs, the Company provides moderate flexibility and creates customized design for customers. Alchip recognizes its market position in SoC design with high complexity for advanced processes. It always has a full communication and understanding first for any customer's requirement, offers all-round services from design to mass production, and includes Silicon Intellectual Property required by products of customers going on the market for the future in the Company's R&D plan and prepares them in advance to shorten the design time in the future.

### (3) Quality Assurance :

Alchip's goal is to develop and provide the highest-quality solutions to customers, achieve the highest standard of excellence, and continue to boost creativity. To help customers seize the market opportunity, the Company introduces the Design for Test (DFT) method in the design stage. The hardware circuit is additionally installed on a chip, which allows the faults and manufacturing defects to be detected when testing the chip, and further the testing cost is reduced and the defect-free rate of chip mass production is improved, making all tasks certain to be completed rapidly and effectively and reducing risks in IC design. Meanwhile, Alchip also implements strict quality policies, continuously reviews and enhances its services in order to complete tasks given by customers in a time-sensitive, highly cost-effective manner and ensure products and quality meeting customers' requirements.

(4) Master the advanced process design technologies :

The Company's core team masters design capabilities of advanced processes, and has quite the understanding of the variability in advanced processes. Risks resulting from the lack of the variability in advanced processes of general commercial EDA software can be properly predicted and prevented. It is more complex for advanced processes systems. In the chip design and packaging process, the system analysis is also taken into consideration to ensure the predictability that customers get chips integrated into systems, such as: Signal Integrity (SI) and Power Integrity (PI). Alchip's advanced process design solutions have also obtained empirical results from more than 200 million units of mass-production chips. After adoption of Alchip's design programs, customers can complete product design goals in the shortest time and gain the cost-effectiveness under high-volume mass production..

(5) Reliability :

High-complexity SoC design faces challenges in reliability, quality, cost, and time for products to market. The Company has completed more than 300 design projects since its establishment in 2003, and obtained the world's and system company's quality certification. Regardless of high-end system chips, high-complexity chips, and advanced-process chips, success has been achieved for all wafer start at the first attempt by far. Alchip considers environment variation factors that may occur at early design stage of circuits to reduce time and costs in re-designs and re-spins, and achieve high defect-free rate. Alchip accomplishes the reliability assurance through careful planning and implementation, concentration on the reliability, pre-sale support, and continuous improvement in the reliability for related products.

(6) Long-term customer relationships and strategic alliance partners :

The Company has long-term relationships with all customers, and pursues shared goals for better, faster results and lower costs. In respect of supply chain management, it also maintains good partnership with upstream and downstream strategic partners, and provides customers with complete solutions and products that are more competitive.

## **F. Advantages, disadvantages and responsive strategies in the development of perspective**

(1) Advantageous factors :

- i. Complete supply chain of Taiwan's semiconductor industry : The semiconductor has division of labor based on specialization and close relationship between upstream and downstream. Taiwan has advanced-process wafer fab, packaging, and testing houses and complete satellite suppliers, which has a comparative advantage in the development of IC design services. Besides, the convenience of location attracts manufacturers around the globe to place orders in Taiwan in view of the first-class international competitiveness.
- ii. Heavy demand for semiconductor products from Taiwan : Taiwan's OEM/ODM business mode has very high production efficiency and economies of scale in sub-contract manufacturing for not

only semiconductor but also system products. Therefore, there is a huge demand in Taiwan's domestic market to support orders from foreign manufacturers.

iii. Support by government policy : The electronics industry has been strongly supported by the government through investments OEM/ODM in the semiconductor sector, and fostering information technology, consumer electronics, and IC manufacturing industries. Thus, talented people and industrial structure are both beneficial for long-term development.

(2) Disadvantageous factors and responsive measures :

i. Since engineers with advanced-process experience are very few, talented people are not easy to find and develop. Retaining professional personnel has become increasingly competitive because of the flourishing of IC industry. Companies often have to pay a high price for recruiting outstanding talents. As a result, to enhance employees' cohesion and sense of belonging towards the Company, the Company has to pay higher cost of human resource.

**【Responsive Measure】**

① The Company develops its own talents over a long period through internal and external professional education and training as well as on-the-job training, and improves employee benefits and reduces turnover rate.

② Adoption of employee stock options to keep talents.

ii. As the industry looks promising and capacity requirements are going up, the Company needs to steadily expand its production capacity to improve service quality. Additionally, IDM industry mode is no longer competitive. The market trend for system customers to look for partners is becoming more and more obvious. Currently, the design service industry is limited in size, and requires expanding its scale to gain big orders from world-class system companies.

**【Responsive Measure】**

① Simplify the development and design process to improve productivity.

② Build the application specific Silicon Intellectual Property platform to shorten the design time and resource input.

## **5.2.2 Main Product Application and Production Flow**

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### **A. Main product application**

Alchip's major products are divided into three categories :

(1) AI/HPC/Communication market : The market for network, storage, and computing devices is growing. To meet higher standards for performance, these devices must use increasingly complex high-efficiency and high-density System on Chips. The Company collaborated with China's large system manufacturing firm to complete multiple 3M, GO TD/LTE mobile communications baseband chips and put them into mass production. It also continued to mass-produce supercomputer networking chips for academic institutions, and the project product was chosen as the world's fastest supercomputer. The characteristics lies in a multitude of customized design with high degree of complexity and difficulty or particularly rigorous process conditions and testing, such as master chips of communications equipment with tens of millions units of logic gates frequently. The complexity and difficulty is found in not only design, but also testing and packaging that will be taken into account consequently.

(2) Consumer electronics products : including designs for applications such as HDTV, mobile phones, digital cameras/video cameras, entertainment systems, portable media players, tablet PC master chips, and peripheral chips. Among which, mobile communication devices have integrated with features of MP3, camera, GPS, mobile TV, wireless surfing, gaming machine, etc., and they will

become a personal finance and identification tool in the future. In the semiconductor sector, the consumer market is the fastest growing segment. In response to the fierce competition in the market, Alchip provides predictable chip realization time, adopts the applied efficiency circuits with empirical experiences, completes prototype chips and enters mass production as soon as possible so that customers can get maximum returns on their investments.

- (3) Niche market products : including ASIC design in special applications such as surveillance systems, entertainment machines, and medical equipment and instruments.



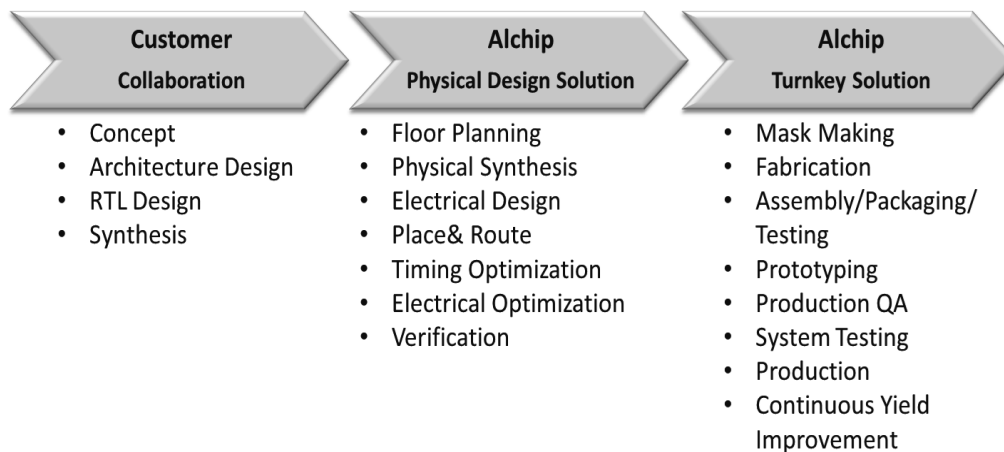
### **B. Production process of major products:**

Chip design is composed of front-end design and back-end design. The front-end design is provided by the system company, and back-end design, production, and manufacturing, on the other hand, are subcontracted to Alchip.

At the front-end design, the concept of a product is decided by the customer. RTL (Register Transform Level) is used to describe functions required by IC and determine the operating speed of the product. Finally, the target database containing all the details (basic functional logic) is established. Through the use of synthesis software, RTL is converted to net list, in which, electronic circuits are converted to logic gates, and the function defined therein is realized through Synthesis Software while the operating clock defined by designer is optimized, and the completed design is given to the fabless ASIC supplier for back-end design.

The back-end design is divided into two phases. The first phase begins with the initialization of the design case and ends in receipt of customer's final net list, which takes about 6 to 8 weeks. The second phase in which engineers use physical design software to convert Net List to the actual layout, and generate the file named GDSII for manufacturing masks (commonly known as tape out). This phase takes about 4 to 6 weeks.





Alchip provides not only the back-end design service, but also a complete turn-key service from design to wafer fabrication, packaging, and testing for customers. In Alchip's service process, the wafer fabrication phase begins after delivery of GDSII file to foundries for manufacturing. The period from delivery of GDSII to completion of chip's finished product testing takes about 8 to 12 weeks. The chip manufacturing process is roughly divided into the following steps: wafer fabrication (wafer fab for short), wafer probe, assembling, initial test and final test. Alchip builds close working relationships with suppliers for overall back-end design and production.

- (1) Silicon Intellectual Property suppliers : Alchip works closely with silicon intellectual Property suppliers and seeks the most appropriate capacity/price ratio. Alchip can provide products of principal IP suppliers around the globe. Customers can adopt their own IP and then combine them flexibly with IP provided by Alchip.
- (2) Foundries : Alchip chooses cooperative firms based on the customer's demand. The open foundries business mode adopted by it does not need to depend on a fixed foundry and so the design capability and development in itself is limited. The Company keeps good partnerships with most foundries (such as: TSMC, Samsung, SMIC, Global Foundries, etc.). It also cooperates closely with TSMC in R&D at the back-end design for deep-submicron and high-end processing SoC.
- (3) Packaging/testing house : Considering the packaging/testing when manufacturing products, in the early design stage, the manufacturing & production team and design & engineering team of Alchip will work together with customers and packaging/testing houses in the supply chain and ensure that each part is correct in the process of commercialization. In the meantime, the logistics group of Alchip makes chips produce timely and deliver them to customers through sound planning production process, and good interaction with supply chain companies.

The following is a list of individual suppliers in the semiconductor industry chain :

Foundry	
Packaging & Testing House	
SIP Supplier	 (over 30 partners)

### 5.2.3 Raw Material Supply

Main raw material	Main source	Supply status
Wafer	Taiwan	Good

### 5.2.4 Major suppliers and customers

#### A. Major suppliers contributing more than 10% of total purchase amount in years 2017 and 2018

Unit: NT\$ thousand/%

Item	2017				2018			
	Supplier	Amount	Percentage of full-year net purchase (%)	Relationship with the issuer	Supplier	Amount	Percentage of full-year net purchase (%)	Relationship with the issuer
1	TSMC	1,210,044	99.63	None	TSMC	561,316	84.02	None
2	-	-	-	-	Others	106,727	15.98	None

Explanation: Alchip is a professional IC design company, and its main purchase item is wafer. Alchip pursues quality and ensures delivery time, and has the long-term cooperation and builds stable partnership with wafer foundries.

#### B. Major customers contributing more than 10% of total sales amount in years 2017 and 2018

Unit: NT\$ thousand/%

Item	2017				2018			
	Customer	Amount	Percentage of full-year net sales (%)	Relationship with the issuer	Customer	Amount	Percentage of full-year net sales (%)	Relationship with the issuer
1	S Company	1,293,947	30.33	None	AB Company	499,045	14.46	None
2	K Company	638,565	14.97	None	K Compnay	463,834	13.44	None
3	D Company	434,382	10.18	None	S Comoany	460,434	13.34	None
4	-	-	-	-	YCompany	331,015	9.56	None

Explanation: The increase in the sales amount of AB Company and Y Company was resulting from revenue recognition of design service completion and the increase of chip production respectively. The decrease in the sales amount of S Company and D Company was resulting from the decrease in demand for chip production in 2018.

## 5.2.5 Production output in years 2017 and 2018

Unit:thousand;NT\$thousand

Output	Year	2017		2018	
		Quantity	Value	Quantity	Value
<b>Major Products</b>					
ASIC and Chip production		14,893	2,168,204	13,726	1,124,174
NRE		-	160	-	-
Others		431	14,470	529	118,852
<b>Total</b>		<b>15,324</b>	<b>2,182,834</b>	<b>14,255</b>	<b>1,243,026</b>

Note: Alchip is a professional IC design company, and has no its own wafer fabrication capacity. The capacity of general manufacturing industry is not applicable. NRE refers to IC design services coming into contract. Since contracts for cost input is different to each project, it is not applicable to calculation of quantity and value.

## 5.2.6 Sales amount in years 2017 and 2018

Unit: NT\$ thousand

Shipments & Sales	Year	2017				2018			
		Domestic sales		Overseas sales		Domestic sales		Overseas sales	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
<b>Major Products</b>									
ASIC and Chip production		8,847	462,338	6,317	3,746,008	4,488	211,552	10,445	3,090,507
NRE		-	-	-	51,887	-	-	-	30,720
Others		-	-	384	5,410	-	-	470	117,899
<b>Total</b>		<b>8,847</b>	<b>462,338</b>	<b>6,701</b>	<b>3,803,305</b>	<b>4,488</b>	<b>211,552</b>	<b>10,915</b>	<b>3,239,126</b>

## 5.3 Information on Employees

The Company's number of employees employed, their average years of service, average age, the percentage of employees at each education level for the two most recent years:

Year		2017	2018	The Current Year up to March 31, 2019
Number of Employees	Supervisor of Managerial Level or Above	83	102	100
	General staff	262	292	283
	Total	345	394	383
Average age		30.8	31.9	31.9
Average years of service		3.1	5.4	5.4
Percentage of Employees at Each Education Level	Ph.D.	1%	1%	1%
	Master	37%	34%	34%
	College	59%	62%	62%
	Senior High School and below (inclusive)	3%	3%	3%

## **5.4 Expenditure on Environmental Protection**

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Total losses (including damage awards) and fines for environmental pollution in the most recent year as well as the current year up to the date of the publication of the annual report , and describe the responsive measures (including corrective measures) and possible disbursements to be made in the future (including an estimate of losses, fines, and compensation resulting from any failure to adopt responsive measures. If the loss cannot be reasonably estimated, make a statement to that effect.): None.

## **5.5 Labor Relations**

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### **5.5.1 Describe employee benefit plans, continuing education, training, retirement systems, and the status of their implementation, and labor-management agreements and measures for upholding employees' rights and interests**

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#### **A. Employee benefit plans**

The Group's employee benefit plans are implemented in accordance with relevant laws and regulations where subsidiaries are located, including labor and health insurance, group insurance, pension distribution, and annual health examination. The subsidiaries of the Group also establish employee welfare committees responsible for planning and handling employees' welfare matters including cash gifts for holidays and festivals, employee travel, regular group recreation activity, and year-end party.

#### **B. Continuing education and training**

To enhance employees' professional capabilities and achieve the company's goals in cultivation of talent, the Company makes annual training programs for employees based on the Company's development strategy and employees' needs, scrupulously implements training, and conducts reviews and auditing on training performance in accordance with ISO Standard for Training Management and Process.

#### **C. Retirement systems and status of their implementation**

Alchip's retirement systems are implemented in accordance with Labor Standards Act and Labor Pension Act of the republic of China to provide protection for employees' security.

#### **D. Labor-management agreements and measures for upholding employees' rights and interests**

The Group has always valued employees' rights and interests as well as their opinions. We keep labor relations harmonious, and employees may make communications and submit their suggestions on the company's operations through regular labor-management conference. Therefore, no material labor dispute has occurred up to now.

### **5.5.2 Describe any loss sustained as a result of labor disputes in the most recent year and the current year up to the date of the publication of the annual report, disclose an estimate of losses incurred to date or likely to be incurred in the future, and mitigation measures. If the loss cannot be reasonably estimated, make a statement to that effect**

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The Group has always maintained harmonious labor relations. There is no loss sustained as a result of labor disputes, and no losses incurred as a result of labor disputes are estimated to be incurred in the future year.

## 5.6 Material Contracts

Supply and sales contracts, technical cooperation contracts, engineering/construction contracts, long-term loan contracts, and other contracts that would affect shareholders' equity, where said contracts are either still effective as of the date of the publication of annual report, or expired in the most recent year are listed as follows:

### 5.6.1 Alchip Technologies, Limited, Alchip(Holdco)

Agreement	Counterparty	Start/end Dates of contracts	Major content	Restrictive clauses
Design and production	S Company	Five years from September 15, 2013	Alchip (Holdco) provides product R&D services, manufactures, and sells integrated circuit products to S Company based on the Statement of Work attached with the contract.	None
Design and production	AB Company	Five years from November 1, 2017	Alchip (Holdco) provides product R&D services, manufactures, and sells integrated circuit products to AB Company based on the Statement of Work attached with the contract.	None
Design and production	Y Company	Five years from April 1, 2014	Alchip (Holdco) provides product R&D services, manufactures, and sells integrated circuit products to Y Company based on the Statement of Work attached with the contract.	None
Partner	F Company	One year from March 13, 2009 (automatically extended for one year annually)	F Company appointed Alchip (Holdco) as its "Value Chain Aggregator".	None
Software licensing	G Company	From April 1, 2003 to this day	G Company licensed Alchip (Holdco) the right to use Licensed Products (and it signed an amendment to the contract of software license with Alchip (Holdco), Alchip (TW), Alchip (JP), Alchip (Wuxi), and Alchip (Shanghai) on July 29, 2016. G Company licensed Alchip (Holdco), Alchip (TW), Alchip (JP), Alchip (Wuxi), and Alchip (Shanghai) the right to use Licensed Products and patented technologies with expiration date on October 31, 2019).	None
Technology licensing	G Company	From April 1, 2003 to this day	G Company licensed Alchip (Holdco) the right to use Licensed Products (and it signed an amendment to the contract of software license with Alchip (Holdco) and Alchip(Shanghai) on July 29, 2016. G Company licensed relevant patents on technologies to Alchip (Holdco) and Alchip(Shanghai) for use with expiration date on August 31, 2019).	None
Technology licensing	G Company	From April 1, 2003 to this day	G Company licensed Alchip (Holdco) the right to use Licensed Products (and it signed an amendment to the contract of software license with Alchip (Holdco) and	None

			Alchip(Shanghai) on October 24, 2017. G Company licensed relevant patents on technologies to Alchip (Holdco) and Alchip(Shanghai) for use with expiration date on January 23, 2021).	
Technology licensing	G Company	From April 1, 2003 to this day	G Company licensed Alchip (Holdco) the right to use Licensed Products (and it signed an amendment to the contract of software license with Alchip (Holdco) and Alchip(Shanghai) on October 26, 2018. G Company licensed relevant patents on technologies to Alchip (Holdco) and Alchip(Shanghai) for use with expiration date on December 16, 2021).	None
Software licensing	H Company	From June 29, 2006 to the termination by H Company as agreed in the contract	H Company licensed Alchip (Holdco) the right to use Licensed Materials	None
Technology licensing	H Company	From June 30, 2017 to March 30, 2020	H Company licensed relevant patents on technologies to Alchip (Holdco) for use.	None

#### 5.6.2 Alchip Technologies, Inc.,Alchip(Taiwan)

Agreement	Counterparty	Start/end dates of contracts	Major content	Restrictive clauses
Lease contract	CyberLink Corp.	From August 1, 2019 to July 31, 2024	Lease the property located in “9F., No. 12, Wenhui St., Neihu Dist., Taipei City” and “9F.-1, No. 12, Wenhui St., Neihu Dist., Taipei City” as office space.	None

#### 5.6.3 Alchip Technologies, Limited,TW Branch

Agreement	Counterparty	Start/end dates of contracts	Major content	Restrictive clauses
Lease contract	TAI YUAN TESTILE	From January 1, 2019 to December 31, 2023	Lease the property located in “11F.-1, No. 1, Taiyuan 1st St., Zhubei Vil., Zhubei City, Hsinchu County” as office space	None

#### 5.6.4 Alchip Technologies, Limited,Alchip(Shanghai)

Agreement	Counterparty	Start/end dates of contracts	Major content	Restrictive clauses
Technology licensing	G Company	From April 1, 2003 to this day	G Company licensed Alchip (Holdco) the right to use Licensed Products (and it signed an amendment to the contract of software license with Alchip (Holdco) and Alchip (Shanghai) on July 29, 2016. G Company licensed relevant patents on technologies to Alchip (Holdco) and Alchip (Shanghai) for use with expiration date on August 31, 2019.	None
Technology licensing	G Company	From April 1, 2003 to this day	G Company licensed Alchip (Holdco) the right to use Licensed Products (and it signed an amendment to the contract of software license with Alchip (Holdco) and Alchip (Shanghai) on October 24,	None

			2017. G Company licensed relevant patents on technologies to Alchip (Holdco) and Alchip (Shanghai) for use with expiration date on January 23, 2021.	
Technology licensing	G Company	From April 1, 2003 to this day	G Company licensed Alchip (Holdco) the right to use Licensed Products (and it signed an amendment to the contract of software license with Alchip (Holdco) and Alchip (Shanghai) on October 26, 2018. G Company licensed relevant patents on technologies to Alchip (Holdco) and Alchip (Shanghai) for use with expiration date on December 16, 2021	None
Lease contract	10 Landlords	From July 1, 2019 to June 30, 2022	Lease the property located in “11F, East Building, Greenland Center, No. 596, Middle Longhua Rd., Xuhui District, Shanghai City” as office space	None

#### 5.6.5 Alchip Technologies, KK Alchip(Japan)

Agreement	Counterparty	Start/end dates of contracts	Major content	Restrictive clauses
Manufacturing	K Company	Five Years from March 1, 2015	Alchip (Japan) provides manufacturing and delivers the manufacturing products as agreed by both parties to K Company.	None

## VI. Financial Highlights

### 6.1 Financial Highlights

#### 6.1.1 Condensed balance sheet and statements of comprehensive income/ statements of income(Consolidated)

##### A. Balance sheet (Consolidated)

Unit: NT\$ thousand

Item	Year	Financial Summary for The Last Five Years(Note1)				
		2014	2015	2016	2017	2018
Current assets		2,689,501	2,581,575	2,266,456	2,332,005	2,883,785
Property, Plant and Equipment		358,202	444,654	216,976	269,326	316,836
Intangible assets		179,262	143,811	117,058	87,192	146,759
Other Non-Current assets		92,237	744,971	688,160	427,395	370,024
Total assets		3,319,202	3,915,011	3,288,650	3,115,918	3,717,404
Current liabilities	Before distribution	540,679	1,087,814	731,082	358,056	768,574
	After distribution	580,112	1,117,493	731,082	422,064	(Note 2)
Non-current liabilities		-	-	-	43,417	27,931
Total liabilities	Before distribution	540,679	1,087,814	731,082	401,473	796,505
	After distribution	580,112	1,117,493	731,082	465,481	(Note 2)
Equity attributable to owner of the company		2,778,523	2,827,197	2,557,568	2,714,445	2,920,899
Share capital		634,818	615,678	607,028	610,010	597,731
Capital surplus		1,418,141	1,392,250	1,388,223	1,425,312	1,456,360
Retained earnings	Before distribution	615,653	662,507	421,432	730,175	821,922
	After distribution	576,220	632,828	421,432	666,167	(Note 2)
Other equity		109,911	156,762	140,885	(51,052)	44,886
Treasury stock		-	-	-	-	-
Non-controlling interest		-	-	-	-	-
Total equity	Before distribution	2,778,523	2,827,197	2,557,568	2,714,445	2,920,899
	After distribution	2,739,090	2,797,518	2,557,568	2,650,437	(Note 2)

Note 1 : Financial information for the year 2014~2018 is audited by CPAs.

Note 2 : Pending on the approval of 2019 shareholders' meeting.



**B. Statements of comprehensive income(Consolidated)**

Unit: NT\$ thousand

Item \ Year	Financial Summary for The Last Five Years (Note)				
	2014	2015	2016	2017	2018
Operating revenues	4,691,741	3,785,741	3,690,977	4,265,643	3,450,678
Gross profit	953,307	822,497	487,833	1,201,130	1,291,441
Profit (loss) from operations	342,198	140,827	(209,745)	320,051	321,925
Non-operating income & expenses	(42,690)	27,409	8,432	38,934	12,880
Profit(loss)before income tax	299,508	168,236	(201,313)	358,985	334,805
Net profit(loss) from operations of continued segments	211,186	128,936	(211,396)	308,743	257,357
Net profit(loss)	211,186	128,936	(211,396)	308,743	257,357
Other comprehensive income(loss) (net of income tax)	139,282	46,851	(15,877)	(191,937)	81,936
Total comprehensive income(loss)	350,468	175,787	(227,273)	116,806	339,293
Net income attributable to shareholders of the parent	211,186	128,936	(211,396)	308,743	257,357
Net income attributable to non-controlling interest	-	-	-	-	-
Comprehensive income attributable to Shareholders of the parent	350,468	175,787	(227,273)	116,806	339,293
Comprehensive income attributable to non-controlling interest	-	-	-	-	-
Earnings(loss) per share (NT\$)	3.77	2.07	(3.45)	5.08	4.22

Note : Financial information for the year 2014~2018 is audited by CPAs.

**6.1.3 CPA opinions from 2014 to 2018**

Year	CPA	Accounting Firm	Auditor's Opinion
2014	Yi-Wen Wang, S.C. Huang	Deloitte & Touche	Unqualified opinion
2015	Yi-Wen Wang, S.C. Huang	Deloitte & Touche	Unqualified opinion
2016	Cheng-Ming Lee, S.C. Huang	Deloitte & Touche	Unqualified opinion
2017	Cheng-Ming Lee, S.C. Huang	Deloitte & Touche	Unqualified opinion
2018	Yi-Wen Wang, Cheng-Ming Lee	Deloitte & Touche	Unqualified opinion

## 6.2 Financial Analysis

### A. Consolidated financial analysis from 2014 to 2018

Item		Financial Analysis for the Last Five Years(Note1)				
		2014	2015	2016	2017	2018
Financial structure (%)	Debt ratio	16.29	27.79	22.23	12.88	21.43
	Ratio of long-term capital to property, plant and equipment	775.69	635.82	1,178.73	1,023.99	930.71
Liquidity (%)	Current ratio	497.43	237.32	310.01	651.30	375.21
	Quick ratio	412.39	198.84	273.68	603.09	322.36
	Interest earned ratio (times)	-	29.45	(58.83)	198.79	376.76
Operating performance	Accounts receivable turnover (times)	8.30	5.06	4.00	6.00	6.02
	Days sales outstanding	44	72	91	61	61
	Inventory turnover (times)	20.74	11.11	12.20	17.09	9.20
	Accounts payable turnover (times)	35.35	25.48	16.40	18.43	23.67
	Average inventory turnover days	18	33	30	21	40
	Property, plant and equipment turnover (times)	13.68	9.43	11.16	17.54	11.77
	Total assets turnover (times)	1.8	1.05	1.02	1.33	1.01
Profitability	Return on total assets (%)	8.08	3.70	(5.79)	9.69	7.55
	Return on equity (%)	9.52	4.60	(7.85)	11.71	9.13
	Pre-tax income to paid-in capital (%)	47.18	27.33	(33.16)	58.85	56.01
	Net margin(%)	4.5	3.41	(5.73)	7.24	7.46
	Basic earnings per share (NT\$)	3.77	2.07	(3.45)	5.08	4.22
Cash flow	Cash flow ratio (%)	145.69	56.75	73.22	347.00	132.66
	Cash flow adequacy ratio (%)	87.62	97.75	99.43	118.46	112.50
	Cash reinvestment ratio (%)	19.92	15.13	12.57	27.04	16.64
Leverage	Operating leverage	5.68	14.86	(6.87)	6.44	7.55
	Financial leverage	1.00	1.04	0.98	1.01	1.00
Analysis of deviation of 2018 vs. 2017 over 20%						
(1)Debt Ratio : Increased by 66.38% in 2018, mainly resulting from the increase in accounts payable and receive in advance from customer.						
(2)Current Ratio, Quick Ratio : Decreased by 42.39% and 46.54%, respectively in 2018, mainly resultinng from the increase in accounts payable and receive in advance from customer .						
(3)Interest Coverage Ratio : Increased by 89.53%, resulting from the decrease in short-term financing loan and decrease in interest expenses in 2018.						

- (4) Inventory Turnover Rate, Average inventory turnover days : Decreased by 46.17% and increased 90.48% , respectively, mainly resulting from the increase in inventory in 2018.
- (5) Accounts Payable Turnover Rate : Increased by 28.43%, mainly resulting from the decrease in average accounts payable.
- (6) Property, plant and equipment turnover, Total assets turnover : decreased by 32.90% and 24.06%, respectively in 2018, due to the decrease in revenue.
- (7) Return on Assets, Return on Equity : decreased by 22.08% and 22.03% ,respectively in 2018, mainly resulting from the decrease of net profit.
- (8) Cash Flow Ratio : Decreased by 61.77%, resulting from the increase in inventory, decrease in cash generated from operating activities and increase in current liabilities in 2018.
- (9) Cash reinvestment ratio : Decreased by 38.46%, resulting from the decrease in net profit, decrease in cash generated from operating activities and increase in paid cash dividend in 2018.

Note 1: Financial information for the year 2014~2018 is audited by CPAs.

Note 2: Financial analysis equations:

1. Financial structure
  - (1) Ratio of liabilities to assets= Total liabilities/Total assets
  - (2) Ratio of long-term assets to Property, plant and equipment=(total equity+non-current liabilities)/ property, plant and equipment, net
2. Solvency
  - (1) Current ratio=Current assets/Current liabilities
  - (2) Quick ratio=(Current assets-inventory-prepaid expense)/Current liabilities
  - (3) Multiple of interest protection=income tax and interest expenses net income before income tax/interest expenses in the current period
3. Operating ability
  - (1) Account receivable turnover(times)=Net sales/Average accounts receivable and notes receivable(net)
  - (2) Days sales in account receivable=365/Account receivable turnover(times)
  - (3) Inventory turnover= Cost of goods sold/Average inventory
  - (4) Payables (including accounts payable and notes payable resulting from operation) turnover = net sales / balance (gross) of average accounts payable (including accounts payable and notes payable resulting from operation)
  - (5) Average days in sales=365/Inventory turnover
  - (6) Property, plant and equipment turnover(times)=Net sales/ net sales/average property, plant and equipment, net
  - (7) Total assets turnover=Net sales/Average assets
4. Profitability
  - (1) Ratio of return on total assets=[net income+interest expense(1-tax rate)/Average assets]
  - (2) Ratio of equity= Net income/Average total Equity
  - (3) Profit ratio=New income/Net sales
  - (4) Earnings per share=(Net income- preferred stock dividend)/Weighted average stock issued (Note 4)
5. Cash flow
  - (1) Cash flow ratio=Net cash flow from operating activity/Current liabilities
  - (2) Cash flow adequacy ratio=Net cash flow from operating activities in five years/(Capital expenditure+inventory increase+cash dividend) in five years
  - (3) Cash reinvestment ratio=(Net cash flow from operating activity –cash dividend)/ gross of property, plant and equipment+long-term investment+other non-current assets+working capital)(Note 5)
6. Leverage
  - (1) Operation leverage=(Net operating income-operating cost and expense)/Operating income (Note 6)
  - (2) Financial ratio= Operating income/(Operating income-Interest expense)

Note 4:When the above formula for calculation of earnings per share is used during measurement, give special attention to the following matters:

1. Measurement should be based on the weighted average number of common shares, not the number of issued shares at year end.
2. In any case where there is a cash capital increase or treasury stock transaction, the period of time in circulation shall be considered in calculating the weighted average number of shares.
3. In the case of capital increase out of earnings or capital surplus, the calculation of earnings per share for the past year and the half-year shall be retrospectively adjusted based on the capital increase ratio, without the need to consider the issuance period for the capital increase.

4. If the preferred shares are non-convertible cumulative preferred shares, the dividend of the current year (whether issued or not) shall be subtracted from the net profit after tax, or added to the net loss after tax. In the case of non-cumulative preferred shares, if there is net profit after tax, dividend on preferred shares shall be subtracted from the net profit after tax; if there is loss, then no adjustment need be made.

Note 5: Give special attention to the following matters when carrying out cash flow analysis:

1. Net cash flow from operating activities means net cash in-flows from operating activities listed in the statement of cash flows.
2. Capital expenditures means the amounts of cash out-flows for annual capital investment.
3. Inventory increase will only be entered when the ending balance is larger than the beginning balance. An inventory decrease at year end will be deemed zero for calculation.
4. Cash dividend includes cash dividends from both common shares and preferred shares.
5. Gross fixed assets value means the total value of fixed assets prior to the subtraction of accumulated depreciation.

Note 6: Issuers shall separate operating costs and operating expenses by their nature into fixed and variable categories. When estimations or subjective judgments are involved, give special attention to their reasonableness and to maintaining consistency.

Note 7: In the case of a company whose shares have no par value or have a par value other than NT\$10, for the calculation of the above-mentioned paid-in capital ratio, the ratio of equity attributable to owners of the parent as stated in the balance sheet shall be substituted.

### 6.3 Audit Committee's Report for the Most Recent Year

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## **Alchip Technologies, Limited AUDIT COMMITTEE'S REVIEW REPORT**

To: Shareholders' Annual General Meeting for Year 2019, Alchip Technologies, Limited

The Board of Directors has prepared and submitted to the undersigned, Audit Committee of Alchip Technologies, Limited 2018 Business Report, Consolidated Financial Statements and Dividend Distribution proposal. The Consolidated Financial Statements have been duly audited by Certified Public Accountants Janice Wang and Jamie Lee of Deloitte & Touche. The above Business Report, Consolidated Financial Statements and Dividend Distribution proposal have been examined and determined to be correct and accurate by the undersigned. This Report is duly submitted in accordance with Article 14-4 of Securities and Exchange Law and Article 219 of the Company Law.

The Audit Committee, Chairman:

Mr. Mao-Wei Hung



**6.4 Consolidated Financial Statement for the most recent year, including an auditor's report prepared by a CPA, and 2-year comparative balance sheet, statement of comprehensive income, statement of changes in equity, cash flow chart, and any related footnotes or attached appendices**

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Please refer to pages 129 to 199.

**6.5 A Parent Company Only Financial Statement for the Most Recent Year, Certified by a CPA, but not Including the Statements of Major Accounting Items**

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Not applicable.

**6.6 Financial Difficulties Encountered By the Company and the Related Party in the Most Recent Year and Up to the Date of the Annual Report**

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None.

## VII. Review of Financial Status, Financial Performance, and Risk Management

### 7.1 Analysis of Financial Status

#### A. Comparability and analysis on financial status

Unit: NT\$ thousand; %

Item	Year	2017	2018	Difference	
				Amount	%
Current Assets		2,332,005	2,883,785	551,780	23.66
Property, Plant and Equipment		269,326	316,836	47,510	17.64
Intangible Assets		87,192	146,759	59,567	68.32
Other Non-Current Assets		427,395	370,024	(57,371)	(13.42)
<b>Total Assets</b>		<b>3,115,918</b>	<b>3,717,404</b>	<b>601,486</b>	<b>19.30</b>
Current Liabilities		358,056	768,574	410,518	114.65
Non-Current Liabilities		43,417	27,931	(15,486)	(35.67)
Other Liabilities		-	-	-	-
<b>Total Liabilities</b>		<b>401,473</b>	<b>796,505</b>	<b>395,032</b>	<b>98.40</b>
Share Capital		610,010	597,731	(12,279)	(2.01)
Capital Surplus		1,425,312	1,456,360	31,048	2.18
Retained Earnings		730,175	821,922	91,747	12.57
Other Equity		(51,052)	44,866	95,918	(187.88)
<b>Total Equity</b>		<b>2,714,445</b>	<b>2,920,899</b>	<b>206,454</b>	<b>7.61</b>

1. Analysis of Deviation over 20% and the amount of change reaches 1% of total assets for the current year

- (1) Current Assets : Resulting from increase in accounts receivable and inventory in 2018.
- (2) Property, plant and equipment : Resulting from the increase in purchase of machinery equipment in 2018.
- (3) Intangible Assets : Resulting from the increase in purchase of intellectual property in 2018.
- (4) Other Non-Current Assets : Resulting from decrease in financial assets at FVTOCI in 2018.
- (5) Current liabilities : Resulting from the increase in accounts payable and receive in advance from customer in 2018.
- (6) Non-Current liabilities : Resulting from China subsidiary obtained grants from China government in 2017.
- (7) Retained Earnings : Resulting from the net profit in 2018.
- (8) Other equity : Resulting from the changes of Exchange differences arising on translation to the presentation currency.

2. The above deviations had no major impact on Alechip's financial position.

## 7.2 Analysis of Financial Performance

### A. Comparability and analysis on business performance

Unit: NT\$ thousand; %

Item	Year		Difference	
	2017	2018	Amount	%
Operating revenues	4,265,643	3,450,678	(814,965)	(19.11)
Operating costs	3,064,513	2,159,237	(905,276)	(29.54)
Gross profit	1,201,130	1,291,441	90,311	7.52
Operating expenses	881,079	969,516	88,437	10.04
Profit (loss) from operations	320,051	321,925	1,874	0.59%
Non-operating income and expenses	38,934	12,880	(26,054)	(66.92)
Profit(loss) before income tax	358,985	334,805	(24,180)	(6.74)
Income tax expense	50,242	77,448	27,206	54.15
Net profit (loss)	308,743	257,357	(51,386)	(16.64)
Other comprehensive income(loss)	(191,937)	81,936	273,873	142.69
Total comprehensive income(loss) for the year	116,806	339,293	222,487	190.48
<p>1. Analysis of Deviation:(over 10% and the amount of change reaches 1% of total assets for the current year.)</p> <p>(1) Operating revenue : Resulting from the decrease in the revenue of chip production in 2018.</p> <p>(2) Operating costs : Resulting from the decrease in chip production business as well as decrease in production cost in 2018.</p> <p>(3) Operating expenses : Resulting from the increase in pay raise,resulting increase in salary expenses.</p> <p>(4) Non-operating income and expenses : Resulting from the recognition of expected credit losses from bond investment in 2018.</p> <p>(5) Income tax expense : Resulting from the tax rate change to 20% from 17%.</p> <p>(6) Net profit(loss) : Resulting from the decrease in operating revenues,increase in operating expenses and the recognition of expected credit losses from bond investment in 2018.</p> <p>(7) Other comprehensive income(loss) : Resulting from exchange differences arising on translation to the presentation currency.</p> <p>(8) Total comprehensive income(loss) : Resulting from the increase in total comprehensive income in 2018.</p> <p>2. The above deviations had no major impact on Alchip's financial position.</p>				

**B. Forecast of sales volume and the basis therefore:** The Company establishes its annual shipment target not only referring to the market analysis of the research institutions, but also according to customer's estimated demand and considering the capacity planning and past operating performance.

**C. Possible effect on the company's future finance and business operations as well as Future countermeasures:** The industry to which the company belongs is still at the stage of growth, and impacts of the financial crisis are gradually eliminated. The Company will pay attention to changes in the market demand at all times, expand the market share, and improve the Company's profit ability. The Company's future businesses should have a sustainable growth and sound financial status.



## 7.3 Analysis of Cash Flow

### 7.3.1 Cash flow analysis for the most recent year

Unit: NT\$ thousand;%

Item \ Year	2017	2018	Increase/Decrease	
			Amount	%
Operating activities	1,242,471	1,019,620	(222,851)	17.94
Investing activities	(505,453)	(1,258,449)	752,996	148.97
Financing activities	(63,795)	(223,946)	160,151	251.04

Analysis of changes:

- (1) Operating activities : A decrease of NT\$222,851 thousand in cash generated from operating activities is resulting from the increase in inventory in 2018.
- (2) Investing activities : A increase of NT\$752,996 thousand in cash used in investing activities is resulting from the increase in amount of time deposit in 2018.
- (3) Financing activities : A increase of NT\$160,151 thousand in cash used in financing activities is resulting execute share buyback in 2018.

### 7.3.2 Cash flow analysis for the coming year (2019) and remedy for cash deficit and liquidity analysis

The Company has adequate own funds and it shows that cash is provided by operating activities, which should be able to response to cash used in investing activities and financing activities. It is unlikely that insufficient liquidity will be a problem.

## 7.4 Major Capital Expenditure for the Most Recent Year and its Effect on Finance and Business operations of the Company

None.

## 7.5 Investment Policy for the Most Recent Year, Main Reasons for Profits or Losses, Improvement Plans and Investment Plans for the Coming Year

### 7.5.1 Investment policy of the Company

The company's current policy is to invest in targets associated with its basic businesses mainly and not invest in other industries. It is conducted by the relevant operating department in compliance with the "Investment Cycle" internal control system and "Guideline for Acquisition and Disposal of Assets". The above regulations or procedures have been discussed and resolved by the Board of Directors or shareholders' meeting.

## 7.5.2 Main reasons for profits or losses generated from investment for the most recent year

Unit:NT\$thousand

Item	Profit (Loss) in 2018	Investment Policy	Reasons for the Profits/Losses	Improvement Plan
Alchip (HK)	(14,787)	Invest in subsidiaries in China	Recognized investment loss under equity method.	Not applicable
Alchip (US)	(681)	A sales office for the U.S. market	Maintained a stable operating status	Not applicable
Alchip (JP)	4,532	An office to develop Japan market	Maintained a stable operating status	Not applicable
Alchip (TW)	(21,649)	Provide ASIC and SoC services	Maintained a stable operating status	Not applicable
Alchip BVI	(23,927)	General investment	Recognized expected credit losses from bond investment	Not applicable
Alchip (SH)	(15,309)	An office to develop the China market, and provide support for sales and R&D.	Maintained a stable operating status	Not applicable
Alchip (Wuxi)	10,361	Provide R&D support	Maintained a stable operating status	Not applicable
Alchip (Hefei)	(207)	Provide R&D support	Maintained a stable operating status	Not applicable
Alchip (Jinan)	(9,402)	Provide R&D support	In a start up stage, recognized personnel cost	Not applicable

## 7.6 Analysis of Risk Management

Analyze and assess the following circumstances for the most recent year and up to the date of publication of the annual report:

### 7.6.1 Effects of changes in interest rates, foreign exchange rates and inflation on the Company's finance, and future countermeasures

#### A. Interest rate

The Company's interest expenses was NT\$891 thousand in 2018, accounted for 0.025% of annual operating income. Therefore, changes in future interest rates have no material impact on the Company's operation and profit.

#### B. Foreign exchange rates

The Group has the U.S. Dollar as its functional currency, as the Group's sales and purchases were mainly settled in U.S. Dollar. It also holds cash in New Taiwan Dollar, Renminbi, and Japanese Yen to meet subsidiaries' working capital requirements. The Company's foreign exchange (losses) gains were NT\$(3,694) thousand and NT\$7,312 thousand in 2018 and 2017, accounted for 0.1% and 0.17% of annual operating income, respectively, which have little impact on the Company's operations and profits.

The Group currently has no material risk of exchange rate fluctuations. However, it is anticipated that Cayman Holdings Company applying for listing on the Taiwan Stock Exchange may probably pay NTD dividends to domestic investors, or acquire NTD funding from domestic fundraising that will be required to convert it to USD for use in the future, the risk of changes in USD to NTD exchange rates in which may be incurred. Response measures will be possibly adopted by the financial department of the Company as follows:

- (1) Financial personnel maintain appropriate foreign exchange positions at the right time based on future foreign exchange rate trends required for operations of the Group's subsidiaries, and reduce the impact of exchange rate fluctuation on the listing company's profit ability.
- (2) Keep close contact with main banks and monitor changes in the foreign exchange market to provide relevant heads of divisions and branches with a full grasp of the trend in exchange rate fluctuation to make timely adjustments in response to contingent circumstances of change in the currency of collection and payment.
- (3) Adopt the natural write-off principle (namely, the whole overseas and domestic sales are quoted in Dollars) to external currency risks, and apply methods such as forward exchange agreements and taking foreign currency debts at the right as needed to reduce the impact of exchange rate fluctuation on the company's profit or loss.

### **C. Inflation/deflation**

Prices of raw materials required by the Company remain stable. The Company's future profit or loss is not much affected by the short-term inflation.

### **7.6.2 Policies, main causes of gain or loss and future countermeasures with respect to high-risk, high-leveraged investments, lending or endorsement guarantees, and derivatives transactions**

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The Company remains true to its principle of stable operation on the prerequisite of financial soundness for the development, and has not engaged in any high-risk, high-leveraged investments, or derivatives transactions for the most recent year. Any lending or endorsement guarantees will be conducted in accordance with relevant requirements prescribed in the Company's "Guideline for Acquisition and Disposal of Assets", "The Guideline for Loaning Funds to Others", and "The Guideline For Endorsement and Guaranty". No loss has occurred by now.

### **7.6.3 Future research & development projects and corresponding budget**

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In response to future growth, the Company will continuously invest R&D resources in development of high-end System on Chip (SoC) for advanced processes (16, 12 and 7nm) and R&D in design for customized circuit Silicon Intellectual Property (IP). Major R&D items include: Low Power Design Flow, Clocking Optimization technique, Signal Integrity management technology, design and development of customized circuit Silicon Intellectual Property, such as design and development of high-speed Mobile Industry Processor Interface (MIPI) circuit, performance enhancement of high-end microprocessor and peripheral Silicon Intellectual Property, high-end multi-chip packaging design technology, and so on.

In 2018 and 2017, the Company invested NT\$620,393 thousand and NT\$522,377 thousand in R&D, respectively, both reached hundred million NT dollars. It will continue to invest R&D resources in the future depending on the product development plan. However, if the Company does not continue to invest R&D in the future, products development and relevant R&D plans will be limited. Moreover the Company may be unable to meet customer needs or market trends and then even will loss orders. As a result, it will have a material adverse effect on the company's operations.

### **7.6.4 Effect of major foreign and domestic policy and regulatory changes on the company's finance and business operations, and countermeasures**

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The country of registration place of the Company is Cayman Island. The Cayman government issued International Tax Co-Operation(Economic Substance) Law on December 27,2018, effective on January 1, 2019, and announced its guidance on February 22, 2019. The Economic Substance Law has material impact

on the Company's operation. The Company has consulted with consultancy to come up with responsive measures and continuously track the changes of the laws and regulations to formulate policies to counteract the effects. The major places of operation of the Company are Taiwan and China with businesses performed in accordance with relevant laws and regulations of competent authorities at major places of operation.

#### **7.6.5 Effect of technological and industry changes on the Company's finance and business operations, and countermeasures**

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The Company has always emphasized the improvement of R&D capabilities. Currently the chips designed and produced by it are mostly products in 28nm and below processes. No material adverse effect of technological and industry changes on the company's finance and business operations in medium- and long-term is expected. The Company reviews and recognizes IT security risk topic every year, based on the severity and the possibility of risk occurs to assess the risks. If the result of risk assessment is "High Risk", the corresponding of risk control will be performed. There is no High Risk of IT security risk at this current assessment.

#### **7.6.6 The impact of changes in corporate image on corporate risk management, and the Company's countermeasures**

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None.

#### **7.6.7 Expected benefits and potential risks of mergers and acquisitions, and countermeasures**

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Not applicable.

#### **7.6.8 Expected benefitsexpected benefits and possible risks associated with plant expansion**

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Not applicable.

#### **7.6.9 Risks from centralized purchasing or selling, and countermeasures**

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##### **A. Concentration of purchasing**

The Company's main raw material is wafer, and 90% of which are purchased from Taiwan Semiconductor Manufacturing Company Limited (hereinafter referred to as "TSMC"). There has indeed been a concentration phenomenon in purchasing operations. Since the Company does not sign a long-term supply contract with the wafer foundry, once the wafer foundry does not give adequate support capacity, risks of shortage or interruptions may occur in the Company. However, the Company develops relationships of strategic alliance and business bond with suppliers for wafer capacity, and provides timely the latest application trends in products on the market and estimated sales of products in order for wafer foundries to support the capacity requirements. Meanwhile, it obtains TSMC's capacity plan for more than half a year to meet the demand for material preparation of production. In addition, the Company has built the second source of supply to increase the flexibility of source of supply and avoid any circumstance such as shortage or interruptions of supply.

##### **B. Concentration of Selling**

The top sales customers of the Company were the customer of AB Company, K Company and S Comapny, with proportion of 14.46%,13.44% and 13.34%, respectively, there is no concentration selling issue. The Company constantly endeavored to develop new customers and diversify customer base in the past year. The benefit thereof will be revealed in 2019.

### **7.6.10 Impact and risk associated with large share transfers or changes in shareholdings of Directors, or shareholders who hold more than 10% of the Company's shares, and countermeasures**

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There is no significant impact and risk on share transfers or changes in shareholdings of directors, supervisors, or shareholders who hold more than 10% of the Company's shares up to the date of publication of the annual report.

### **7.6.11 Impact and risk associated with changes in management rights, and countermeasures**

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No such case during the most recent year and the current year up to the date of publication of the annual report.

### **7.6.12 Litigation or non-litigation matters**

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If the outcome of a concluded or pending litigious, non-litigious or administrative litigation event involving the company, director, general manager, de facto responsible person major shareholders holding more than 10% equity interest, or subsidiary of the company might have material impact on shareholders' equity or the prices of the company's securities, disclose the facts of dispute, amount of claim, lawsuit start date, main parties concerned and current status as of the date of the publication of annual report.

- A. For litigious or non-litigious proceedings or administrative disputes involving the company with respect to which a judgment has become final and unappealable in the most recent two years or in the current year up to the date of the publication of the annual report, and for any such matter still pending. If the outcome could materially impact shareholders' equity or the prices of the company's securities, the annual report shall list the facts of the dispute, amount of money at stake in the dispute, the date of commencement of proceedings, the main parties to the dispute, and current status of the dispute's handling:** None.
- B. For litigious or non-litigious proceedings or administrative disputes involving a company director, the general manager, a de facto responsible person, a 10 percent or greater major shareholder, or a controlled company, if a judgment has become final and unappealable in the most recent two years and the current year up to the date of the publication of the annual report, or if such a matter is still pending, if the outcome could materially impact shareholders' equity or the prices of the company's securities, the annual report shall list the facts of the dispute, amount of money at stake in the dispute, the date of commencement of proceedings, the main parties to the dispute, and current status of the dispute's handling:** None.
- C. Where any of the situations set out under Article 157 of the Securities and Exchange Act has occurred with respect to a company director, managerial officer, or 10 percent or greater major shareholder within the preceding two years, or in the current year up to the date of publication of the annual report, the prospectus shall indicate that fact and describe the current status of the company's handling of the matter:** None.

### **7.6.13 Other Material Risks**

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None.

### **7.7 Other Material Matters**

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None.

## VIII. Special Disclosure

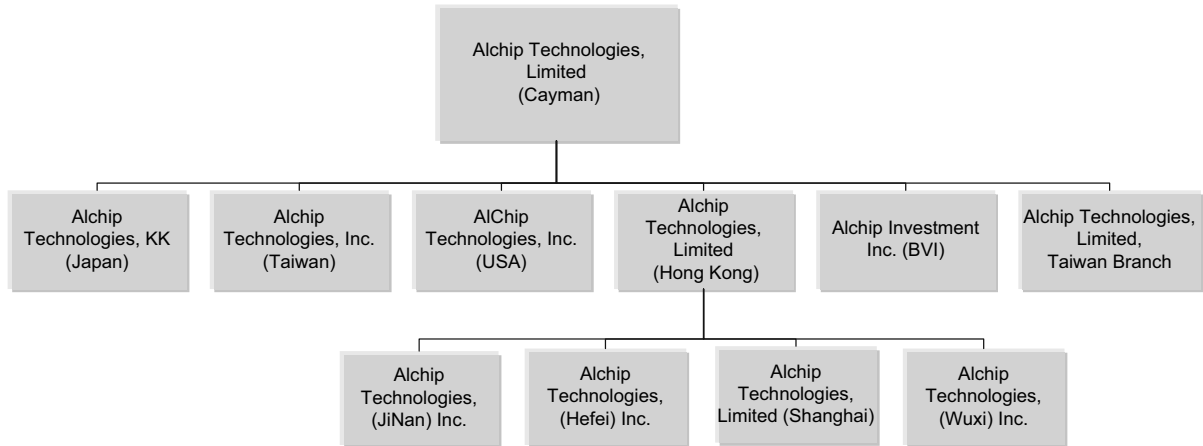
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### 8.1 Information of Subsidiaries

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#### 8.1.1 Subsidiaries chart

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### 8.1.2 Profiles of subsidiaries

December 31, 2018;Unit: NT\$thousand

Name	Principal Businesses	Date of Incorporation	Paid-in Capital	Purpose of the Investment	Shareholding %	Method of Accounting Treatment
Alchip HK	General investment	2002	520,687 (Note2)	Invest in subsidiaries in China	100%	Equity Method
Alchip US	ASIC and SoC sales	2003	114,922	A sales office for the U.S. market	100%	Equity Method
Alchip Japan	ASIC and SoC sales	2004	62,587	An office to develop the Japan market,	100%	Equity Method
Alchip Taiwan	Provide ASIC and SoC services	2005	100	Provide ASIC and SoC services	100%	Equity Method
Alchip Shanghai	Research, develop, and design ASIC and SoC, and provide relevant services and sales	2002	393,152	An office to develop the China market, and provide support for sales and R&D	100%	Equity Method
Alchip Wuxi	Research, develop, and design ASIC and SoC, and provide relevant services	2012	61,430	Provide R&D support	100%	Equity Method
Alchip BVI	General investment	2015	473,317 (Note1)	General investment	100%	Equity Method
Alchip Hefei	Research, develop, and design ASIC and SoC, and provide relevant services	2016	15,358	Provide R&D support	100%	Equity Method
Alchip Jinan	Research, develop, and design ASIC and SoC, and provide relevant services	2018	24,081	Provide R&D support	100%	Equity Method

Note1 : The amount of NT\$471,735 thousand (US\$15,050 thousand) has been remitted.However, the procedure of capital-increase has not been completed.

Note2 : The amount of NT\$24,288 thousand (US\$820 thousand) has been remitted.However, the procedure of capital-increase has not been completed.

### 8.1.3 For companies presumed to have a relationship of control and subordination and information on their shareholders in common

None.

### 8.1.4 Industries covered by the business operated by the subsidiaries overall

The Company's affiliates all engage in professional Application Specific IC (ASIC) and System-on-Chip (SoC) design, manufacturing and production.

### 8.1.5 Rosters of Directors, Supervisors, and Presidents of Alchip's subsidiaries

April 23, 2019

Name of Affiliated Enterprise	Title	Name or Representative	Shareholding	
			Number of Shares	%
Alchip Taiwan	Chairman CEO	Kinying Kwan Johnny Shyang-Lin Shen	Alchip Technologies (Cayman) holds 10,000 shares	100%
	Director	Johnny Shyang-Lin Shen		
	Director Supervisor	David Chiang Herbert Chang		
Alchip Japan	Chairman GM	Junichiro Hosaka Junichiro Hosaka	Alchip Technologies (Cayman) holds 2,000 shares	100%
	Director	Kozo Fujita		
	Director	Kinying Kwan		
	Supervisor	Hiroyuki Furuzono		
Alchip US	Director	Kinying Kwan	Alchip Technologies (Cayman) holds 391,000,000 shares	100%
Alchip HK	Chairman	Kinying Kwan	Alchip Technologies (Cayman) holds 12,230,170,100 shares	100%
	Director	Kinying Kwan		
Alchip Shanghai	Executive Director	Steven Wu	Alchip Technologies (Cayman) has a capital contribution of US\$12,800 thousand	100%
	GM	Andy Lin		
Alchip Wuxi	Chairman GM	Andy Lin Andy Lin	Alchip Technologies (Cayman) has a capital contribution of US\$2,000 thousand	100%
	Director	Daniel Wang Leo Cheng		
	Supervisor	Johnny Shyang-Lin Shen		
Alchip BVI	Director	Daniel Wang	Alchip Technologies (Cayman) holds 50,000 shares	100%
	Director	Nancy Chan		
Alchip Hefei	Chairman GM	Andy Lin Andy Lin	Alchip Technologies (Cayman) has a capital contribution of US\$500 thousand	100%
	Director	Daniel Wang Leo Cheng		
	Supervisor	Johnny Shyang-Lin Shen		
Alchip Jinan	Chairman GM	Andy Lin Andy Lin	Alchip Technologies (Cayman) has a capital contribution of US\$784 thousand	100%
	Director	Daniel Wang Leo Cheng		
	Supervisor	Johnny Shyang-Lin Shen		



### 8.1.6 Operation highlights of Alchip subsidiaries

December 31, 2018;Unit:NT\$thousand

Company	Total Assets	Total Liabilities	Total Equity	Revenue	Operating Profit(Loss)	Net Profit(Loss)	EPS (NT\$Dollar)
Alchip Taiwan	597,697	2,544	595,153	5,301	(20,988)	(21,649)	-
Alchip Japan	175,346	116,344	59,001	640,027	5,948	4,532	-
Alchip US	27,329	4,782	22,546	6,965	(681)	(681)	-
Alchip Shanghai	422,014	49,862	372,152	293,632	(20,378)	(15,309)	-
Alchip Wuxi	114,825	28,691	86,134	125,308	7,992	10,361	-
Alchip HK	476,336	479	475,856	-	(238)	(14,787)	-
Alchip BVI	492,585	54	492,531	-	(516)	(23,927)	-
Alchip Hefei	91,336	92,247	(911)	112,764	(16,239)	(207)	-
Alchip Jinan	34,289	19,589	14,700	-	(9,022)	(9,402)	-

### 8.1.7 Consolidated financial statements of subsidiaries

Not applicable.

### 8.2 Private Placement Securities During the Current Year up to the Date of Publication of the Annual Report

None.

### 8.3 Holding or Disposal of Shares in the Company by Alchip's Subsidiaries During the Current Year up to the Date of Publication of the Annual Report

None.

### 8.4 Other Necessary Supplements

None.

## 8.5 Major Difference Between The Company's Articles of Association and the Regulations on the Protection of Shareholders' Equity of Taiwan

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p><b>I. Formation and change of equity capital of a company</b></p> <p>1. A company shall not cancel its shares, unless a resolution on capital reduction has been adopted by its shareholders' meeting; and capital reduction shall be effected based on the percentage of shareholding of the shareholders pro rata.</p> <p>2. A company reducing its capital may return share prices (or the capital stock) to shareholders by properties other than cash; the returned property and the amount of such substitutive capital contribution shall require a prior approval of the shareholders' meeting and obtain consents from the shareholders who receive such property.</p> <p>3. The Board of Directors shall first have the value of such property and the amount of such substitutive capital contribution set forth in the preceding Paragraph audited and certified by a Certified Public Accountant of the Republic of China before the shareholders' meeting.</p>	<p>Article 168 of the Company Act</p>	<p>1. The Company may, pursuant to Article 14 of the Company Law of Cayman Islands, reduce its capital previously issued only after a Special Resolution adopted by the shareholders' meeting and confirmed by the court of the Cayman Islands.</p> <p>2. Except as required by Article 14 of the Company Law of Cayman Islands, the Company's capital previously issued can be cancelled only when they are purchased, returned, or redeemed by the Company in accordance with Article 37 or Article 37B of the Company Law of Cayman Islands.</p> <p>3. Subject to Article 37 of the Company Law of Cayman Islands, the Company may purchase its own shares on such terms and in such manners as prescribed in the company's Articles of Association or resolved by the shareholders' meeting. Except as required by Article 37 of the Company Law of Cayman Islands, the following are not prescribed in the Company Law of Cayman Islands: (1) repurchase</p>	<p>There's a slight difference in the Article 10.7 of the company's Articles of Association and the matters of material significance on the protection of shareholders' rights and interests as stated left. Under the Company Law of Cayman Islands, the Company may reduce shares previously issued only after a Special Resolution adopted by the shareholders' meeting and confirmed by the court of the Cayman Islands. In view of this, as the procedure prescribed in Article 14.1 and Article 10.7 of the company's Articles of Association, the Company may reduce its capital through the purchase of shares. Reasons for such difference are due to the requirements in the Company Law of Cayman Islands. However, the company's Articles of Association does not set limits on the procedure for capital reduction. Therefore, such differences should not have a material adverse effect on the Company's shareholders' rights and interests.</p>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>1. Procedures for the Company to enter into a stock option agreement with its employees or issue employee stock options.</p> <p>2. The stock option obtained by any employee of the issuing company shall be non-assignment, except to the heir(s) of the said employee.</p>	<p>Article 167-2 of the Company Act</p>	<p>shall be effected based on the percentage of shareholding of the shareholders pro rata, (2) return share prices (or the capital stock) to shareholders by properties other than cash shall require a prior approval, or (3) shall have the value of property returned assessed; however, it may be prescribed in the company's Articles of Association.</p> <p>There is no particular regulation in the Company Law of Cayman Islands for employee stock option agreement or procedures of employee stock options issuance. Issuance of employee stock options and whether the options can be assigned should be prescribed in the employees' stock option agreement or stock option plan.</p>	<p>Although there have been amendments to Articles 11.1 to 11.4 of the company's Articles of Association based on the matters of material significance on the protection of shareholders' rights and interests as stated left, any restriction on assignment of employee stock options should be prescribed in the employees' stock option agreement or stock option plan in accordance with the Company Law of Cayman Islands. Such difference should not have a material adverse effect on the Company's shareholders' rights and interests.</p>
<b>II. Procedure for convening a shareholders' meeting or the method of resolutions</b>			
<p>1. A regular meeting of shareholders shall be held at least once every year and convened within six months after close of each fiscal year. A shareholders meeting shall be convened by the Board of Directors.</p> <p>2. A shareholders' meeting shall be</p>	<p>1. Article 170 of the Company Act  2. Article 172-1 of the Company Act  3. Paragraph 1 &amp; 2, Article 173 of the Company Act  4. Article 172 of the Company Act, Article 26-1 &amp; 43-6 of the Securities and Exchange Act  5. Article 173-1 of the Company Act</p>	<p>1.  (a) Except for an exempted company, the shareholders' meeting shall be held by each company at least once every year as set forth in Article 58 of the Company Law of Cayman Islands.  (b) An exempted company is not</p>	<p>For a foreign issuer being an exempted company under the Company Law of Cayman Islands, there is no need to hold an annual shareholders' meeting every year in accordance with the Company Law of the Cayman Islands provided that "The Company shall hold a general meeting as its annual general</p>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>convened within the territory of the Republic of China. Where a shareholders' meeting is to be convened outside the territory of the Republic of China, the Company shall apply for the approval of TWSE within two days after the Board resolution or obtaining the approval of the competent authority to convene the meeting by the shareholder(s).</p> <p>3. Shareholders holding 1% or more of the total issued shares may present to the foreign issuer a proposal at a shareholders' meeting in writing or electronically. The foreign issuer shall accept such proposals submitted by shareholders unless (i) the proposal involves matters which cannot be resolved at a shareholders' meeting (ii) the number of shares held by the shareholder is less than 1% of the total issued shares, (iii) the proposal was submitted not within the announced accepted period of time, or (iv) the proposal exceed 300 words or includes more than one proposal. For proposal urging the foreign issuer to promote public interests or fulfill its social responsibility, the board shall accept such proposal.</p> <p>4. Any or a plural number of</p>		<p>mandatorily required to convene the regular meeting of shareholders by the Company Law of Cayman Islands. The Company may include the number of shareholders' meetings required to be convened by the company every year in its Articles of Association.</p> <p>2. The shareholders' meeting of an exempted company is not restricted to be convened at a specific place by the Company Law of Cayman Islands; however, it may be prescribed in the company's Articles of Association.</p> <p>3. The shareholders' meeting convened by shareholder(s) or shareholders' proposal right is not required by the Company Law of Cayman Islands; however, the relevant procedures may be prescribed in the Articles of Association.</p> <p>4. The contents of the shareholders' meeting notice is not required by the Company Law of Cayman Islands; however, it may be prescribed in the Company's Articles of Association.</p> <p>5. The detail of the convention of shareholders' meetings is not required by the Company Law of Cayman Islands; however, the relevant procedures may be prescribed in the Articles of</p>	<p>meeting within six months following the end of each fiscal year, and shall specify the meeting as such in the notices calling it. At these meetings, the report of the Directors (if any) shall be presented." as prescribed in Article 16.2 of the Company's Articles of Association.</p> <p>Other matters are prescribed respectively in Articles 16.2, 16.3, 16.4, 18.9, 16.5 to 16.8, and 17.5 of the company's Articles of Association.</p> <p>Per Letter Tai-Zheng-Shang-Zi No. 0991701319 filed on April 13, 2010 by the TWSE, "Explanation 2 (3): To the extent that the laws of the place of registration are not contradicted, a foreign issuer may remove the part of "obtaining an approval from the competent authority" from the clause on the right of minority shareholders to call a special shareholders' meeting in the articles of association." Therefore, subject to Article 16.8 of the company's Articles of Association, "If the board of Directors do not within fifteen days from the date of the deposit of the requisition dispatch the notice of an extraordinary general meeting, the requisitionists may themselves convene an extraordinary general meeting in accordance with the Applicable Public</p>

<p><b>Matters of material significance on the protection of shareholders' rights and interests</b></p>	<p><b>Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"</b></p>	<p><b>Regulations relating to the laws of the foreign issuer's country of registration place</b></p>	<p><b>Provisions in the Company's Articles of Association and reasons for the discrepancy</b></p>
<p>shareholder(s) of a company who has (have) continuously held 3% or more of the total number of outstanding shares for a period of one year or a longer time may, by filing a written proposal setting forth therein the subjects for discussion and the reasons, request the Board of Directors to call a special meeting of shareholders. If the Board of Directors fails to give a notice for convening a special meeting of shareholders within 15 days after the filing of the request, the proposing shareholder(s) may, after obtaining an approval from the competent authority, convene a special meeting of shareholders on his/their own.</p> <p>5. Shareholders continuously holding no less than 50% of the total issued shares for three months or longer are eligible to convene a special general meeting. The calculation of the holding period and holding number of shares shall be based on the holding at the time of share transfer suspension date.</p> <p>6. The following matters shall not shall be itemized in the causes or subjects to be described in the notice to convene a meeting of shareholders and explained about the important contents thereof, and</p>		<p>Association.</p>	<p>Company Rules." Such difference should not have a material adverse effect on the Company's shareholders' rights and interests.</p>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>shall not be brought up as extraordinary motions; the main content can be announced at the website designated by Taiwan securities authority or by the foreign issuer, and the foreign issuer shall specify the link to the website on the notice</p> <ol style="list-style-type: none"> <li>(1) Election or discharge of Directors and supervisors;</li> <li>(2) Alteration of the Articles of Association;</li> <li>(3) Capital reduction;</li> <li>(4) Application to terminate public offering;</li> <li>(5) Dissolution, merger, conversion of shares, spin-off of the company;</li> <li>(6) Enter into, amend, or terminate any contract for lease of the company's business in whole, or for entrusted business, or for regular joint operation with others;</li> <li>(7) Transfer the whole or any essential part of its business or assets;</li> <li>(8) Accept the transfer of another's whole business or assets, which has great bearing on the business operation of the company;</li> <li>(9) Private placement of any equity-type securities;</li> </ol>			

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>(10) Granting waiver to the Director's engaging in any business within the scope of business of the Company;</p> <p>(11) Distributing part or all of its dividends or bonus by way of issuance of new Shares; and</p> <p>(12) Distribution of legal reserve fund from profit and capital reserve from share premium or gift, by means of rights issue or cash payment to existing shareholders.</p>			
<ol style="list-style-type: none"> <li>The voting power at a shareholders' meeting may be exercised in writing or by way of electronic transmission. Where the company meeting the "Range of Companies Subject to Electronic Voting Requirement" promulgated by the securities authority of the Republic of China; however, shall adopt the electronic transmission as one of the methods for exercising the voting power.</li> <li>Where a shareholders' meeting is to be convened outside the territory of the Republic of China, the Company must allow the shareholders to exercise the votes and cast the votes in writing or by way of electronic transmission</li> <li>The method for exercising the voting power shall be described in the shareholders' meeting notice to</li> </ol>	<ol style="list-style-type: none"> <li>Article 177-1 of the Company Act</li> <li>Article 177-2 of the Company Act</li> </ol>	<ol style="list-style-type: none"> <li>A shareholder shall not exercise his/her/its voting power in writing or by way of electronic transmission. Unless otherwise provided by the company's Articles of Association; however, a shareholder may authorize a proxy in writing or by way of electronic transmission to exercise the voting rights of his/her/its shares at the meeting.</li> <li>In case a shareholder exercises the voting power in his/her/its behalf through a proxy, he/she/it will not be deemed to have attended the shareholders' meeting in person.</li> <li>The Company's Articles of Association may prescribe the delivery of the power of attorney.</li> <li>There is no stipulation that a shareholder revokes the power of attorney in the Company Law of Cayman Islands. However, under</li> </ol>	<p>As prescribed in Article 19.6 of the company's Articles of Association, "A Member exercising voting power by way of a written ballot or by way of an electronic transmission shall be deemed to have appointed the chairman of the general meeting as his proxy to exercise his or her voting right at such general meeting in accordance with the instructions stipulated in the written or electronic document." Although the Company Law of Cayman Islands considers a shareholder exercising the voting power in such manner not to be deemed to have attended the shareholders' meeting in person, such a shareholder is still entitled to all the rights of a shareholder who has exercised his/her/its voting power in writing or by way of electronic transmission in accordance with the applicable laws and regulations of the</p>

<p><b>Matters of material significance on the protection of shareholders' rights and interests</b></p>	<p><b>Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"</b></p>	<p><b>Regulations relating to the laws of the foreign issuer's country of registration place</b></p>	<p><b>Provisions in the Company's Articles of Association and reasons for the discrepancy</b></p>
<p>be given to the shareholders if the voting power will be exercised in writing or by way of electronic transmission by the company. A shareholder who exercises his/her/its voting power at a shareholders meeting in writing or by way of electronic transmission shall be deemed to have attended the said shareholders' meeting in person, but shall be deemed to have waived his/her/its voting power in respect of any extemporary motion(s) and/or the amendment(s) to the contents of the original proposal(s) at the said shareholders' meeting.</p> <p>4. In case a shareholder elects to exercise his/her/its voting power in writing or by way of electronic transmission, his/her/its declaration of intention shall be served to the company two (2) days prior to the scheduled meeting date of the shareholders' meeting, whereas if two (2) or more declarations of the same intention are served to the company, the first declaration of such intention received shall prevail; unless an explicit statement to revoke the previous declaration is made in the declaration which comes later.</p> <p>5. In case a shareholder who has</p>		<p>principles of common law, notwithstanding anything in the Company's Articles of Association to the contrary, shareholders who attend the shareholders' meeting in person to exercise their voting power shall have the preemptive effect, provided that the Company's Articles of Association may prescribe the revocation of the power of attorney when shareholders do not attend the shareholders' meeting in person.</p>	<p>Republic of China. Such difference should not have a material adverse effect on the Company's shareholders' rights and interests.</p>



Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>exercised his/her/its voting power in writing or by way of electronic transmission intends to attend the shareholders' meeting in person, he/she/it shall, two days prior to the meeting date of the scheduled shareholders' meeting and in the same manner previously used in exercising his/her/its voting power, serve a separate declaration of intention to rescind his/her/its previous declaration of intention made in exercising the voting power under the preceding paragraph. In the absence of a timely rescission of the previous declaration of intention, the voting power exercised in writing or by way of electronic transmission shall prevail.</p> <p>6. In case a shareholder has exercised his/her/its voting power in writing or by way of electronic transmission, and has also authorized a proxy to attend the shareholders' meeting in his/her/its behalf, then the voting power exercised by the authorized proxy for the said shareholder shall prevail.</p>			
<p>Any of the following proposals involving material rights or interests of shareholders shall not be adopted without a resolution adopted by a</p>	<ol style="list-style-type: none"> <li>1. Article 185 of the Company Act</li> <li>2. Article 227 of the Company Act</li> <li>3. Article 227 of the Company Act</li> <li>4. Paragraph 1, Article 240 of the</li> </ol>	<p>1. According to Article 60 of the Company Law of Cayman Islands, a special resolution means a resolution that has been passed by a majority of</p>	<ol style="list-style-type: none"> <li>1. Article 1.1 of the Company's Articles of Association</li> <li>(a) Provisions of the Company's Articles of Association</li> </ol>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>majority of the shareholders present who represent two-thirds or more of the total number of its outstanding shares. If the total number of shares represented by the shareholders present at shareholders' meeting is not sufficient to meet the criteria specified in the above mentioned, the resolution to be made thereto may be adopted by two-thirds or more of the attending shareholders who represent a majority of the total number of its outstanding shares:</p> <ol style="list-style-type: none"> <li>1. A company enters into, amend, or terminate any contract for lease of the company's business in whole, or for entrusted business, or for regular joint operation with others, transfer the whole or any essential part of its business or assets, accept the transfer of another's whole business or assets, which has great bearing on the business operation of the company</li> <li>2. Modification or alteration of the Articles of Association</li> <li>3. Any modification or alteration in the Articles of Association prejudicial to the privileges of special shareholders shall be adopted by a meeting of special shareholders additionally</li> <li>4. Have the whole or a part of the surplus profit distributable as</li> </ol>	<p>Company Act</p> <ol style="list-style-type: none"> <li>5. Article 316 of the Company Act</li> </ol>	<p>not less than two-thirds (where there is any higher percentage of the total number of the voting rights is required in the Articles of Association, such higher percentage shall prevail) of such members as, being entitled to do so, vote in person or, where a power of attorney is allowed, by a proxy at a shareholders' meeting. As usually prescribed by a general Cayman Company's Articles of Association, a special resolution by which such proposal should be adopted shall be specified in the shareholders' meeting notice. A written resolution signed by all shareholders, provided that it has been authorized by the company's Articles of Association, is also deemed as a special resolution made. When the number of votes is required in the manner for exercising the voting power to calculate whether it belongs to a majority of special resolution, the company's Articles of Association may specify the total number of votes entitled to each shareholder.</p> <ol style="list-style-type: none"> <li>2. According to the Company Law of Cayman Islands, matters that require a special resolution include: (i) change the company name (Article 31); (ii) alter or add to articles of association (Article 24); (iii) alter or</li> </ol>	<p>According to Article 1.1 of the Company's Articles of Association, a special resolution means "a resolution passed by a majority of not less than two-thirds of votes cast by such Members as, being entitled so to do, vote in person or, where proxies are allowed, by proxy at a general meeting of which notice specifying the intention to propose the resolution as a special resolution has been duly given. means a resolution passed by a majority of not less than two-thirds of votes cast by such Members as, being entitled so to do, vote in person or, where proxies are allowed, by proxy at a general meeting of which notice specifying the intention to propose the resolution as a special resolution has been duly given." According to the Cayman Islands legal opinions, matters that require a special resolution include but are not limited to: (i) change the company name; (ii) alter or add to Articles of Association; (iii) alter or add to the memorandums of association with respect to any objects, powers or other matters specified therein; (iv) reduce share capital and any capital redemption reserve; (v) wind up voluntarily for reasons other than</p>

<p><b>Matters of material significance on the protection of shareholders' rights and interests</b></p> <p>dividends and bonuses distributed in the form of new shares to be issued by the company for such purpose</p> <p>5. A resolution for dissolution, consolidation or merger, or split-up of a company</p>	<p><b>Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"</b></p>	<p><b>Regulations relating to the laws of the foreign issuer's country of registration place</b></p> <p>add to the memorandums of association with respect to any objects, powers or other matters specified therein (Article 10); (iv) reduce share capital and any capital redemption reserve (Article 14 and 37(4)(d)); (v) wind up voluntarily for reasons other than that the company is unable to pay its debts as they fall due (Article 90(b)(i) and 116(c)); and (vi) merger or consolidation with other company.</p> <p>According to the Company Law of Cayman Islands, any resolution adopted by shareholders lower than the majority threshold for a matter that requires a special resolution is deemed invalid</p> <p>3. For matters other than those stated above, the Company Law of Cayman Islands does not require them to be adopted by a certain majority; however, it may be prescribed in the company's Articles of Association.</p>	<p><b>Provisions in the Company's Articles of Association and reasons for the discrepancy</b></p> <p>that the company is unable to pay its debts as they fall due; and (vi) merger or consolidation with other company. Additionally, according to Article 18.1 of the Company's Articles of Association, "No business shall be transacted at any general meeting unless a quorum is present. Unless otherwise provided in the Statute, the Articles and the Applicable Public Company Rules, Members present in person or by proxy, representing more than one-half of the total issued, outstanding Shares, shall constitute a quorum for any general meeting." That is, a special resolution may be adopted at a shareholders' meeting attended by shareholders representing the majority of shares issued and outstanding in person or by a proxy, and in which at least two-thirds of the votes cast by the shareholders present (including shareholders present by a proxy) are in favor of the resolution.</p> <p>(b) Reasons for discrepancy</p> <p>According to the Cayman Islands legal opinions, the special resolution is subject to the Company Law of Cayman Islands, and according to which, any resolution adopted by shareholders lower than the majority threshold</p>
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<p><b>Matters of material significance on the protection of shareholders' rights and interests</b></p>	<p><b>Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"</b></p>	<p><b>Regulations relating to the laws of the foreign issuer's country of registration place</b></p>	<p><b>Provisions in the Company's Articles of Association and reasons for the discrepancy</b></p>
			<p>for a matter that requires a special resolution is deemed invalid. And Article 1.1 of the company's Articles of Association defines separately "Supermajority Resolution" as "a resolution adopted by a majority vote of the Members present and entitled to vote on such resolution at a general meeting attended in person or by proxy by Members who represent two-thirds or more of the total issued, outstanding Shares of the Company or, (ii) if the total number of Shares represented by the Members present at the general meeting is less than two-thirds of the total issued, outstanding Shares of the Company, but more than half of the total issued, outstanding Shares of the Company, a resolution adopted at such general meeting by the Members who represent two-thirds or more of the Shares present and entitled to vote on such resolution."</p> <p>For any matter of material significance on the protection of shareholders' rights and interests as stated left, if it should be adopted by a special resolution pursuant to the Company Law of Cayman Islands, it will be still listed as one of matters under "Special</p>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
			<p>Resolution" in the company's Articles of Association; otherwise, it will be listed as one of matters under "Supermajority Resolution."</p> <p>2. Article 14.3 of the company's Articles of Association (moved to Article 14.4 if the proposed amendment to the Articles of Association is adopted at the annual general meeting of 2018)</p> <p>(a) Provisions of the company's Articles of Association: According to Article 14.3 of the company's Articles of Association, "Subject to the provisions of the Statute, the Articles, and the Applicable Public Company Rules, with regard to the dissolution procedures of the Company, the Company shall pass (a) a Supermajority Resolution, if the Company resolves that it be wound up voluntarily because it is unable to pay its debts as they fall due; or (b) a Special Resolution, if the Company resolves that it be wound up voluntarily for reasons other than the reason stated in Article 14.3(a) above." The slight difference between it and the matters of material significance on the protection of shareholders' rights and interests as stated left lies</p>

<p><b>Matters of material significance on the protection of shareholders' rights and interests</b></p>		<p><b>Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"</b></p>	<p><b>Regulations relating to the laws of the foreign issuer's country of registration place</b></p>	<p><b>Provisions in the Company's Articles of Association and reasons for the discrepancy</b></p>
				<p>in: based on the reasons for resolution to dissolve, the company's Articles of Association lists the resolution for dissolution as one of matters under "Supermajority Resolution" or "Special Resolution," respectively. In comparison, the matters of material significance on the protection of shareholders' rights and interests always require to be adopted by "Supermajority Resolution."</p> <p>(b) Reasons for discrepancy: According to the Cayman Islands legal opinions, the Company Law of Cayman Islands provides that a company shall resolve that it be wound up voluntarily for reasons other than being unable to pay its debts as they fall due by a special resolution. Thus the difference arises out of the laws of Cayman Islands. From the above, we can know that such difference comes from what is limited by law of Cayman Islands. Therefore, "if the Company resolves that it be wound up voluntarily because it is unable to pay its debts as they fall due," a Supermajority Resolution shall be adopted at the shareholders' meeting as prescribed in the company's Articles of Association.</p>

<p><b>Matters of material significance on the protection of shareholders' rights and interests</b></p>	<p><b>Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"</b></p>	<p><b>Regulations relating to the laws of the foreign issuer's country of registration place</b></p>	<p><b>Provisions in the Company's Articles of Association and reasons for the discrepancy</b></p>
<p>In case a TWSE primary listed company participates in the merger/consolidation, carries on the general transfer or carries on a division and is dissolved thereafter while the surviving or newly incorporated company is not a listed or OTC company, the resolution of the general meeting under the preceding two paragraphs shall be adopted by two-thirds or more of the votes of the shareholders who represent the total number of issued shares of the TWSE listed company.</p>	<p>Article 18, 27, 28, 29 &amp; 35 of the Business Mergers And Acquisitions Act</p>		<p>while a company is being wound up voluntarily for reasons other than the reason stated in Article 14.3(a), it will be listed as one of matters under "Special Resolution" as required by the Company Law of Cayman Islands. Such difference comes from what is limited by law of Cayman Islands, which should not have a material adverse effect on the Company's shareholders' rights and interests. This requirement is newly added in the Checklist of Shareholders Rights Protection with respect to Foreign Issuer's Place of Incorporation dated December 29, 2017. The company has proposed to add a new Article 14.3 to its Articles of Association reflecting this requirement. The proposed amendment to the Articles of Association has been submitted to the annual general meeting for approval.</p>
<p><b>III. Authorities and responsibilities of directors and supervisors</b></p>			
<p>The remuneration of directors, if not prescribed in the Articles of Association, shall be determined by a meeting of shareholders and cannot be ratified by a meeting of shareholders.</p>	<p>Paragraph 1, Article 196 of the Company Act</p>	<p>The Company Law of Cayman Islands does not clearly specify how to determine remuneration of directors; however, it may be prescribed in the company's Articles of Association.</p>	<p>Although neither the remuneration of directors is clearly specified nor it shall be determined by a meeting of shareholders is specified in the company's Articles of Association, referring to per Explanation Shang-Zi No. 09302030870 filed on March 8,</p>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>In case a director has, in the course of performing his/her duties, committed any act resulting in material damages to the company or in serious violation of applicable laws and/or regulations, but not discharged by a resolution of the shareholders' meeting, the shareholder(s) holding 3% or more of the total number of outstanding shares of the company may, within 30 days after that shareholders' meeting, institute a lawsuit in the court for a judgment in respect of such matter. The Taiwan Taipei District Court, R.O.C, may be the court of the first instance for this matter.</p>	<p>Article 200 of the Company Act</p>	<p>1. The Company Law of Cayman Islands does not clearly specify that the minority shareholders may institute a lawsuit in the court of Cayman Islands for discharge of directors.</p> <p>2. In general, the procedure for discharge of directors is prescribed in the company's Articles of Association, and that an ordinary resolution should be adopted at the shareholders' meeting is typically prescribed.</p> <p>3. According to shareholders' remedies required by the common law, in a lawsuit accusing a director of bringing about infringement to the company, the proper plaintiff in form should be the company per se and not an individual shareholder or minority shareholders. There are</p>	<p>2004 by the Ministry of Economic Affairs and the "Regulations Governing the Appointment and Exercise of Powers by the Remuneration Committee of a Company Whose Stock is Listed on the Stock Exchange or Traded Over the Counter," the Company's Board of Director has established a remuneration committee. Therefore, the provisions as stated left should not have a material adverse effect on the Company's shareholders' rights and interests.</p> <p>(1) Provisions of the company's Articles of Association: According to Article 28.2 (j) of the company's Articles of Association, "Subject to the provisions of the Statute, and the Articles or the Applicable Public Company Rules, in the event that he has, in the course of performing his duties, committed any act resulting in material damage to the Company or in serious violation of applicable laws and/or regulations or the Memorandum and the Articles, but has not been removed by the Company pursuant to a Supermajority Resolution vote, then any Member(s) holding 3% or more of the total number of issued, outstanding Shares shall have the right, within thirty days after that general meeting, to petition any</p>



<p><b>Matters of material significance on the protection of shareholders' rights and interests</b></p>		<p><b>Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"</b></p>	<p><b>Regulations relating to the laws of the foreign issuer's country of registration place</b></p> <p>only a few of exceptions for the above principle, including that when the conduct of a director constitutes a fraud against the minority shareholders and the person who commits such fraud is a company's controller, the minority shareholders who have suffered the fraud may institute a lawsuit in the court.</p> <p>4. Since the court of the Cayman Islands cannot ratify and enforce foreign non-monetary judgments before re-examination on the legal basis of the said dispute, such stipulation added in the company's Articles of Association may not be executed under the Company Law of Cayman Islands. Directors may be discharged according to the procedure prescribed in the Company's Articles of Association.</p>	<p><b>Provisions in the Company's Articles of Association and reasons for the discrepancy</b></p>	<p>competent court for the removal of such Director, at the Company's expense and such Director shall be removed upon the final judgment by such court. For clarification, if a relevant court has competent jurisdiction to adjudicate all of the foregoing matters in a single or a series of proceedings, then, for the purpose of this paragraph (j), final judgment shall be given by such competent court." It is slightly different from the matters of material significance on the protection of shareholders' rights and interests as stated left.</p> <p>(2)Reasons for discrepancy: The Company Law of Cayman Islands does not clearly specify that the minority shareholders are allowed to enter a petition in the court of Cayman Islands for discharge of directors. Under the common law, the subrogation litigation of shareholders will be claimed only under rare circumstances. Thus the company's Articles of Association prescribes that a shareholder shall institute a lawsuit in a competent court. Since shareholders may discharge a directors according to the company's Articles of Association, it should not have a material adverse effect on the</p>
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Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>1. Supervisors of a company shall be elected by the meeting of shareholders, among them at least one supervisor shall have a domicile within the territory of the Republic of China.</p> <p>2. The term of office of a supervisor shall not exceed three years, but he may be eligible for re-election.</p> <p>3. In case all supervisors of a company are discharged, the Board of Directors shall, within sixty (60) days, convene a special meeting of shareholders to elect new supervisors.</p> <p>4. Supervisors shall supervise the execution of business operations of the company, and may at any time or from time to time investigate the business and financial conditions of the company, examine the accounting books and documents, and request the Board of Directors or managerial personnel to make reports thereon.</p> <p>5. Supervisors shall audit the various statements and records prepared for submission to the shareholders' meeting by the Board of Directors, and shall make a report of their findings and opinions at the meeting of shareholders.</p>	<p>Article 216 to 222 of the Company Act</p>	<p>The Company Law of Cayman Islands has no corresponding concept of "Supervisor." The effect that supervisors are installed in accordance with the company's Articles of Association is not clear.</p>	<p>Company's shareholders' rights and interests.</p> <p>Article 32.6 of the company's Articles of Association</p> <p>As described in the former section of Paragraph 2, Article 28-4 of Taiwan Stock Exchange Corporation Rules Governing Review of Securities Listings "A foreign issuer shall install either an audit committee or supervisors". The Company has installed an audit committee by all independent directors (Article 32.6 of Articles of Association); therefore, supervisors are not required to be installed additionally. Such difference should not have a material adverse effect on the Company's shareholders' rights and interests.</p>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>6. In performing their functional duties of auditing, the supervisors may appoint a certified public accountant to conduct the auditing in their behalf.</p> <p>7. Supervisors of a company may attend the meeting of the Board of Directors to give their opinions. In case the Board of Directors or any director commits any act, in carrying out the business operations of the company, in a manner in violation of the laws, regulations, the Articles of Incorporation or the resolutions of the shareholders' meeting, the supervisors shall forthwith advise, by a notice, to the Board of Directors or the Director, as the case may be, to cease such act.</p> <p>8. The supervisors may each exercise the supervision power individually.</p> <p>9. A supervisor shall not be concurrently a director, a managerial officer or other staff/employee of the company.</p>	<p>Article 200, 214, 220 and 227 of the Company Act</p>		
<p>1. Shareholder(s) who has/have been continuously holding 1% or more of the total number of the outstanding shares of the company over six months may request in writing the supervisors of the company to institute, for the company, an action against a</p>	<p>Article 200, 214, 220 and 227 of the Company Act</p>	<p>1. The Company Law of Cayman Islands has no corresponding concept of "Supervisor." The effect that supervisors are installed in accordance with the company's Articles of Association is not clear.</p> <p>2. According to shareholders' remedies required by the common law, in a</p>	<p>Article 25.6 of the company's Articles of Association</p> <p>As described in the former section of Paragraph 2, Article 28-4 of Taiwan Stock Exchange Corporation Rules Governing Review of Securities Listings "A foreign issuer shall install</p>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>director of the company. The Taiwan Taipei District Court, R.O.C, may be the court of the first instance for this matter.</p> <p>2. In case the supervisors fail to institute an action within 30 days after having received the request made by shareholder(s), then the shareholders filing such request may institute the action for the company. The Taiwan Taipei District Court, R.O.C, may be the court of the first instance for this matter.</p> <p>3. In addition to the events that the board of directors does not or is unable to convene a shareholders meeting, the supervisors or audit committee may, for the benefit of the company, convene shareholders meeting when necessary.</p>	<p>Article 197-1 of the Company Act</p>	<p>lawsuit accusing a director of bringing about infringement to the company, the proper plaintiff in form should be the company per se and not an individual shareholder or minority shareholders. There are only a few of exceptions for the above principle, including that when the conduct of a director constitutes a fraud against the minority shareholders and the person who commits such fraud is a company's controller, the minority shareholders who have suffered the fraud may institute a lawsuit in the court.</p> <p>3. Since the court of the Cayman Islands cannot ratify and enforce foreign non-monetary judgments before re-examination on the legal basis of the said dispute, such stipulation added in the company's Articles of Association may not be executed under the Company Law of Cayman Islands. Directors may be discharged according to the procedure prescribed in the company's Articles of Association.</p>	<p>either an audit committee or supervisors." The Company has installed an audit committee by all independent directors; therefore, supervisors are not required to be installed additionally. Such difference should not have a material adverse effect on the Company's shareholders' rights and interests.</p>
<p>In case a director or supervisor (applicable to companies who install supervisors) of a company whose shares are issued to the public has created a pledge on the company's shares more than half of the company's shares being held by him/her/it at the</p>	<p>Article 197-1 of the Company Act</p>	<p>The fact that shares held by directors shall have no voting power (under which circumstances) is not required by the Company Law of Cayman Islands; however, the relevant procedures may be prescribed in the Articles of Association.</p>	<p>Article 24.3 of the company's Articles of Association</p> <p>In addition, as described in the former section of Paragraph 2, Article 28-4 of Taiwan Stock Exchange Corporation Rules Governing Review of Securities</p>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>time he/she/it is elected, the voting power of the excessive portion of shares shall not be exercised and the excessive portion of shares shall not be counted in the number of votes of shareholders present at the meeting.</p>			<p>Listings "A foreign issuer shall install either an audit committee or supervisors". The Company has installed an audit committee by all independent directors; therefore, supervisors are not required to be installed additionally. Such difference should not have a material adverse effect on the Company's shareholders' rights and interests. Thus supervisors are not included in the above mentioned Articles of Association. Such difference should not have a material adverse effect on the Company's shareholders' rights and interests.</p>
<ol style="list-style-type: none"> <li>The director of a company shall have the loyalty and shall exercise the due care of a good administrator in conducting the business operation of the company; and if he/she has acted contrary to this provision, shall be liable for the damages to be sustained by the company there-from. In case the director of a company does anything for himself/herself or on behalf of another person, the meeting of shareholders may, by a resolution, consider the earnings in such an act as earnings of the company.</li> <li>If the director of a company has, in the course of conducting the business operations, violated any</li> </ol>	<p>Paragraph 2, Article 8, Paragraph 3, Article 23 of the Company Act</p>	<ol style="list-style-type: none"> <li>The Company Law of Cayman Islands includes specifically obligations of directors as clear directions. According to the common law of Cayman Islands, each shareholder being liable to (1) fiduciary duties, and (2) exercise the due care of a good administrator for the company (duty of care). The company may claim compensation against the directors who have violated the above duties. In addition, directors who have violated their duties acquire interests shall be bound to return the same to the company.</li> <li>Based on principles of common law, in the course of operation for management of the company's</li> </ol>	<p>Article 26.5 of the company's Articles of Association</p> <p>However, if the director of a company has, in the course of conducting the business operations, violated any provision of the applicable laws and/or regulations and thus caused damage to any other person, such other person may not be able to claim compensation directly from such director under the law of Cayman Islands. Even the company's Articles of Association requires that the director shall be jointly liable for compensation with the company to the other person, the base of such claim will be unable to be created.</p>

Matters of material significance on the protection of shareholders' rights and interests	Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"	Regulations relating to the laws of the foreign issuer's country of registration place	Provisions in the Company's Articles of Association and reasons for the discrepancy
<p>provision of the applicable laws and/or regulations and thus caused damage to any other person, he/she shall be liable, jointly and severally, for the damage to such other person.</p> <p>3. The managerial officer or supervisor of a company, acting within the scope of their duties, shall assume the liabilities for the damage in the same manner as directors of a company do.</p>		<p>businesses, the acts of a director representing the company will be deemed as the acts of the company per se. If the conduct thereof causes damage of any third party, the company, not the director, shall be bound to be liable the third party for the acts. The third party caused by the damage cannot demand from the company the compensation and impose obligations on the directors according to the company's Articles of Association. Any third party who is not a shareholder cannot execute it according to the company's Articles of Association. The company who is liable for the damage to be sustained by the third party because the directors who have violated the duties may claim reimbursement against the directors caused the damage.</p> <p>3. The managerial officer generally has no fiduciary duties for the company. Since managerial officers are not the parties pursuant to the Articles of Association, no execution effect is present even it is prescribed in the Articles of Association. The above duties shall be entered into the contracts with managerial officer.</p>	<p>In addition, although Article 26.5 of the company's Articles of Association has required that such clause of obligation is also applicable to managerial officers; however, it shall be entered into the contracts with managerial officers in accordance with the law of Cayman Islands. Therefore, if the responsibilities of managerial officers for the matters of material significance on the protection of shareholders' rights and interests as stated left will be implemented, the Company shall enter into the contracts with managerial officers. Such difference should not have a material adverse effect on the Company's shareholders' rights and interests.</p>
<p>Where a juristic person acts as a shareholder of a company, its authorized representative may be</p>	<p>Paragraph 2, Article 27 of the Company Act</p>	<p>1. The fact that an authorized representative of a juristic person acting as a shareholder being elected</p>	<p>Article 27.4 of the Company's Articles of Association</p>

<p><b>Matters of material significance on the protection of shareholders' rights and interests</b></p> <p>elected as a director or supervisor of the company. If there is a plural number of such authorized representatives, each of them may be so elected, but such authorized representatives may not concurrently be selected or serve as the director or supervisor of the company.</p>	<p><b>Applicable laws and regulations of "Company Act" or "Securities and Exchange Act"</b></p>	<p><b>Regulations relating to the laws of the foreign issuer's country of registration place</b></p> <p>as a director is not regulated by the Company Law of Cayman Islands; however, it may be prescribed in the Articles of Association.</p> <p>2.The Company Law of Cayman Islands has no corresponding concept of "Supervisor." The effect that supervisors are installed in accordance with the company's Articles of Association is not clear.</p>	<p><b>Provisions in the Company's Articles of Association and reasons for the discrepancy</b></p> <p>As described in the former section of Paragraph 2, Article 28-4 of Taiwan Stock Exchange Corporation Rules Governing Review of Securities Listings "A foreign issuer shall install either an audit committee or supervisors." The Company has installed an audit committee by all independent directors; therefore, supervisors are not required to be installed additionally. Such difference should not have a material adverse effect on the Company's shareholders' rights and interests. Thus supervisors are not included in the above mentioned Articles of Association. Such difference should not have a material adverse effect on the Company's shareholders' rights and interests.</p>
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**8.6 Any Events in 2018 and as of the Date of Publication of the Annual Report that Had Significant Impacts on Shareholders' Right or Security Prices as Stated in Article 36-3-2 of the Securities and Exchange Law of Taiwan**

None.

## **INDEPENDENT AUDITORS' REPORT**

The Board of Directors and Shareholders  
Alchip Technologies, Limited:

### **Opinion**

We have audited the accompanying consolidated financial statements of Alchip Technologies, Limited and its subsidiaries (collectively referred to as the Company), which comprise the consolidated balance sheets as of December 31, 2018 and 2017, 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 Company as of December 31, 2018 and 2017, 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 International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China.

### **Basis for Opinion**

We conducted our audit in accordance with the Regulations Governing Auditing and Attestation of Financial Statements by Certified Public Accountants and 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 Company in accordance with The Norm of Professional Ethics for Certificate Public Account of Republic of China, and we have fulfilled our other ethical responsibilities in accordance with the requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for the opinion.



## **Key Audit Matters**

Key audit matters are matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements for the year ended December 31, 2018. These matters have been reflected in the entirety of the audited consolidated financial statements and throughout the process of the opinion formation. We do not provide opinions separately for these matters.

Key audit matter for the Company's consolidated financial statements for the year ended December 31, 2018 is stated as follows:

### Impairment Assessment of Equipment

As described in Note 5 of the consolidated financial statements, when the equipment related to chip production has any indication of impairment, the Company evaluates impairment loss based on the recoverable amount of equipment (Which is higher of its fair value less costs to sell or value-in-use). The recoverable amount, which is estimated based on the anticipation of the production life cycle of chips, projected production volume, and market price, is subject to a risk of changes in relation to the assumptions that could result in additional impairment loss or reversal of impairment loss. Consequently, the impairment assessment of equipment is deemed to be a key audit matter.

Our main audit procedures in respect of assessment thereof included as following: 1. Assessed the underlying information the management used when assessing whether there is any indication of impairment. 2. Reviewed the methodologies applied for the determination of the recoverable amount and the projected sales forecasts prepared by the management and evaluated the appropriateness of the impairment assessment which the management performed.

### **Responsibilities of the 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 the IFRS, IAS, IFRIC, and SIC endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the 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's or to cease operations, or has no realistic alternative but to do so.

Those charged with governance, including the audit committee, are responsible for overseeing the Company's financial reporting process.

### **Auditor's Responsibilities for the Audit of the Consolidated Financial Statements**

Our objectives are to obtain reasonable assurance on whether the entirety of the consolidated financial statements contain any material misstatement caused by 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 be reasonably be expected to influence the economic decision of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the auditing standards generally accepted in the Republic of China, we exercise professional judgement and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform 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 the one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
2. Obtain 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. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the management.
4. Conclude 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 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 Company to cease to

continue as a going concern.

5. Evaluate 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. Obtain sufficient and appropriate audit evidence for the financial information of entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for direction, supervision and performance of the Company audit. We remain solely responsible for our audit opinion.

We communicate 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 identify during our audit.

We also provide those charged with governance with statements that we have complied with relevant ethical requirements regarding independence, and 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 consolidated financial statements for the year ended December 31, 2018, and are therefore the key audit matter. We describe the matter in our auditor's report unless law or regulations precludes public disclosure about the matter or when, in extremely rare circumstances, we determine 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 Yi-Wen Wang and Cheng-Ming Lee.

The independent auditors' report and the accompanying consolidated financial statements have been translated into English from original Chinese version prepared and used in the Republic of China. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language independent auditors' report and consolidated financial statements shall prevail.

March 15, 2019

**ALCHIP TECHNOLOGIES, LIMITED AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**  
(In Thousands of New Taiwan Dollars)

Code	ASSETS	December 31, 2018		December 31, 2017	
		Amount	%	Amount	%
	<b>CURRENT ASSETS</b>				
1100	Cash and Cash Equivalents (Notes 4 and 6)	\$ 1,142,113	31	\$ 1,562,091	50
1120	Financial Assets at Fair Value Through Other Comprehensive Income (Notes 4 and 7)	20,889	1	-	-
1125	Available-for-sale Financial Assets (Notes 4 and 10)	-	-	156,843	5
1136	Financial Assets at Amortized Cost (Notes 4 and 8)	601,565	16	-	-
1170	Accounts Receivable, Net (Notes 4 and 11)	670,738	18	411,748	13
1200	Other Receivables (Note 4)	22,140	1	16,043	1
130X	Inventories (Notes 4 and 12)	281,278	8	60,516	2
1410	Prepayments (Note 16)	124,914	3	112,104	4
1470	Other Current Assets	20,148	-	12,660	-
11XX	Total Current Assets	<u>2,883,785</u>	<u>78</u>	<u>2,332,005</u>	<u>75</u>
	<b>NON-CURRENT ASSETS</b>				
1517	Financial Assets at Fair Value Through Other Comprehensive Income (Notes 4 and 7)	318,809	9	-	-
1523	Available-for-sale Financial Assets (Notes 4 and 10)	-	-	394,240	13
1600	Property, Plants, and Equipment (Notes 4 and 14)	316,836	8	269,326	9
1780	Intangible Assets (Notes 4 and 15)	146,759	4	87,192	3
1840	Deferred Tax Assets (Notes 4 and 25)	34,889	1	16,355	-
1900	Other Non-current Assets	16,326	-	16,800	-
15XX	Total Non-current Assets	<u>833,619</u>	<u>22</u>	<u>783,913</u>	<u>25</u>
1XXX	<b>TOTAL ASSETS</b>	<u>\$ 3,717,404</u>	<u>100</u>	<u>\$ 3,115,918</u>	<u>100</u>
	<b>LIABILITIES AND EQUITY</b>				
	<b>CURRENT LIABILITIES</b>				
2100	Short-term Borrowings (Note 17)	\$ -	-	\$ 42,074	1
2130	Contract Liabilities	316,979	8	-	-
2170	Accounts Payable	135,734	4	46,686	2
2200	Other Payables (Note 18)	204,706	5	193,917	6
2230	Current Tax Liabilities (Notes 4 and 25)	64,461	2	48,401	2
2311	Advanced Sales Receipts	-	-	14,969	1
2313	Deferred Revenue (Note 22)	44,813	1	-	-
2399	Other Current Liabilities	1,881	-	12,009	-
21XX	Total Current Liabilities	<u>768,574</u>	<u>20</u>	<u>358,056</u>	<u>12</u>
	<b>NON-CURRENT LIABILITIES</b>				
2570	Deferred Tax Liabilities (Notes 4 and 25)	9,986	-	-	-
2630	Deferred Revenue (Note 22)	17,945	1	43,417	1
25XX	Total Non-current Liabilities	<u>27,931</u>	<u>1</u>	<u>43,417</u>	<u>1</u>
2XXX	Total Liabilities	<u>796,505</u>	<u>21</u>	<u>401,473</u>	<u>13</u>
	<b>EQUITY ATTRIBUTABLE TO OWNERS OF THE COMPANY</b> (Notes 4, 20 and 21)				
3110	Share Capital	597,731	16	610,010	20
3200	Capital Surplus	1,456,360	39	1,425,312	46
	Retained Earnings				
3320	Special Reserve	67,693	2	67,693	2
3350	Unappropriated Earnings	754,229	20	662,482	21
3300	Total Retained Earnings	821,922	22	730,175	23
3400	Other Equity	44,886	2	(51,052)	(2)
3XXX	Total Equity	<u>2,920,899</u>	<u>79</u>	<u>2,714,445</u>	<u>87</u>
	<b>TOTAL</b>	<u>\$ 3,717,404</u>	<u>100</u>	<u>\$ 3,115,918</u>	<u>100</u>

The accompanying notes are an integral part of the consolidated financial statements.

**ALCHIP TECHNOLOGIES, LIMITED AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**  
(In Thousands of U.S. Dollars)

Code	ASSETS	December 31, 2018		December 31, 2017	
		Amount	%	Amount	%
	<b>CURRENT ASSETS</b>				
1100	Cash and Cash Equivalents (Notes 4 and 6)	\$ 37,184	31	\$ 52,490	50
1120	Financial Assets at Fair Value Through Other Comprehensive Income (Notes 4 and 7)	680	1	-	-
1125	Available-for-sale Financial Assets (Notes 4 and 10)	-	-	5,270	5
1136	Financial Assets at Amortized Cost (Notes 8)	19,585	16	-	-
1170	Accounts Receivable, Net (Notes 4 and 11)	21,837	18	13,836	13
1200	Other Receivables (Note 4)	720	1	539	1
130X	Inventories (Notes 4 and 12)	9,158	8	2,033	2
1410	Prepayments (Note 16)	4,067	3	3,767	4
1470	Other Current Assets	<u>656</u>	<u>-</u>	<u>425</u>	<u>-</u>
11XX	Total Current Assets	<u>93,887</u>	<u>78</u>	<u>78,360</u>	<u>75</u>
	<b>NON-CURRENT ASSETS</b>				
1517	Financial Assets at Fair Value Through Other Comprehensive Income (Notes 4 and 7)	10,380	9	-	-
1523	Available-for-sale Financial Assets (Notes 4 and 10)	-	-	13,247	13
1600	Property, Plants, and Equipment (Notes 4 and 14)	10,315	8	9,050	9
1780	Intangible Assets (Notes 4 and 15)	4,778	4	2,930	3
1840	Deferred Tax Assets (Notes 4 and 25)	1,136	1	550	-
1900	Other Non-current Assets	<u>532</u>	<u>-</u>	<u>564</u>	<u>-</u>
15XX	Total Non-current Assets	<u>27,141</u>	<u>22</u>	<u>26,341</u>	<u>25</u>
1XXX	<b>TOTAL ASSETS</b>	<u>\$ 121,028</u>	<u>100</u>	<u>\$ 104,701</u>	<u>100</u>
	<b>LIABILITIES AND EQUITY</b>				
	<b>CURRENT LIABILITIES</b>				
2100	Short-term Borrowing (Note 17)	\$ -	-	\$ 1,414	1
2130	Contract Liabilities	10,320	8	-	-
2170	Accounts Payable	4,419	4	1,569	2
2200	Other Payables (Note 18)	6,665	5	6,516	6
2230	Current Tax Liabilities (Notes 4 and 25)	2,099	2	1,626	2
2311	Advanced Sales Receipts	-	-	503	1
2313	Deferred Revenue (Note 22)	1,459	1	-	-
2399	Other Current Liabilities	<u>61</u>	<u>-</u>	<u>403</u>	<u>-</u>
21XX	Total Current Liabilities	<u>25,023</u>	<u>20</u>	<u>12,031</u>	<u>12</u>
	<b>NON-CURRENT LIABILITIES</b>				
2570	Deferred Tax Liabilities (Notes 4 and 25)	325	-	-	-
2630	Deferred Revenue (Note 22)	<u>584</u>	<u>1</u>	<u>1,459</u>	<u>1</u>
25XX	Total Non-current Liabilities	<u>909</u>	<u>1</u>	<u>1,459</u>	<u>1</u>
2XXX	Total Liabilities	<u>25,932</u>	<u>21</u>	<u>13,490</u>	<u>13</u>
	<b>EQUITY ATTRIBUTABLE TO OWNERS OF THE COMPANY</b> (Notes 4, 20 and 21)				
3110	Share Capital	<u>18,761</u>	<u>15</u>	<u>19,129</u>	<u>18</u>
3200	Capital Surplus	<u>46,788</u>	<u>39</u>	<u>45,682</u>	<u>44</u>
	Retained Earnings				
3320	Special Reserve	2,799	2	2,799	3
3350	Unappropriated Earnings	<u>27,074</u>	<u>23</u>	<u>24,021</u>	<u>23</u>
3300	Total Retained Earnings	<u>29,873</u>	<u>25</u>	<u>26,820</u>	<u>26</u>
3400	Other Equity	( <u>326</u> )	<u>-</u>	( <u>420</u> )	( <u>1</u> )
3XXX	Total Equity	<u>95,096</u>	<u>79</u>	<u>91,211</u>	<u>87</u>
	<b>TOTAL</b>	<u>\$ 121,028</u>	<u>100</u>	<u>\$ 104,701</u>	<u>100</u>

The accompanying notes are an integral part of the consolidated financial statements.

# ALCHIP TECHNOLOGIES, LIMITED AND SUBSIDIARIES

## CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In Thousands of U.S. Dollars and New Taiwan Dollars, Except Earnings (Loss) Per Share)

Code		2018			2017		
		US\$	NT\$	%	US\$	NT\$	%
4000	OPERATING REVENUE (Notes 4 and 23)	\$ 114,454	\$ 3,450,678	100	\$ 140,169	\$ 4,265,643	100
5000	OPERATING COST (Notes 12 and 24)	<u>71,619</u>	<u>2,159,237</u>	<u>63</u>	<u>100,700</u>	<u>3,064,513</u>	<u>72</u>
5900	GROSS PROFIT	<u>42,835</u>	<u>1,291,441</u>	<u>37</u>	<u>39,469</u>	<u>1,201,130</u>	<u>28</u>
	OPERATING EXPENSES (Note 24)						
6100	Selling and Marketing Expenses	4,705	141,839	4	4,062	123,610	3
6200	General and Administrative Expenses	6,875	207,284	6	7,725	235,092	6
6300	Research and Development Expenses	<u>20,577</u>	<u>620,393</u>	<u>18</u>	<u>17,165</u>	<u>522,377</u>	<u>12</u>
6000	Total Operating Expenses	<u>32,157</u>	<u>969,516</u>	<u>28</u>	<u>28,952</u>	<u>881,079</u>	<u>21</u>
6900	INCOME FROM OPERATIONS	<u>10,678</u>	<u>321,925</u>	<u>9</u>	<u>10,517</u>	<u>320,051</u>	<u>7</u>
	NON-OPERATING INCOME AND EXPENSES (Notes 4 and 24)						
7010	Other Income	2,109	63,587	2	1,356	41,260	1
7020	Other Gains and Losses	( 217 )	( 6,544 )	-	( 17 )	( 511 )	-
7050	Finance Costs	( 30 )	( 891 )	-	( 60 )	( 1,815 )	-
7055	Expected Credit Losses	( 1,435 )	( 43,272 )	( 1 )	-	-	-
7000	Total Non-operating Income and Expenses	<u>427</u>	<u>12,880</u>	<u>1</u>	<u>1,279</u>	<u>38,934</u>	<u>1</u>
7900	INCOME BEFORE INCOME TAX	11,105	334,805	10	11,796	358,985	8
7950	INCOME TAX EXPENSES (Notes 4 and 25)	<u>2,569</u>	<u>77,448</u>	<u>2</u>	<u>1,651</u>	<u>50,242</u>	<u>1</u>
8200	NET INCOME	<u>8,536</u>	<u>257,357</u>	<u>8</u>	<u>10,145</u>	<u>308,743</u>	<u>7</u>
	OTHER COMPREHENSIVE INCOME (LOSS)						
8310	Items that May not be Reclassified Subsequently to Profit or Loss						
8341	Exchange Differences Arising on Translation to the Presentation Currency	-	93,288	3	-	( 205,344 )	( 5 )
8360	Items that May be Reclassified Subsequently to Profit or Loss						
8361	Exchange Differences Arising on Translating Foreign Operations (Note 4)	32	970	-	56	1,709	-
8362	Unrealized Loss on Available-for-sale Financial Assets	-	-	-	384	11,698	1
8367	Unrealized Loss on investments in Debt Instrument at Fair Value Through Other Comprehensive Income	( 408 )	( 12,322 )	( 1 )	-	-	-
8300	Other Comprehensive Income (Loss) for the Year, Net of Income Tax	( 376 )	81,936	2	440	( 191,937 )	( 4 )
8500	TOTAL COMPREHENSIVE INCOME (LOSS) FOR THE YEAR	<u>\$ 8,160</u>	<u>\$ 339,293</u>	<u>10</u>	<u>\$ 10,585</u>	<u>\$ 116,806</u>	<u>3</u>
	NET INCOME (LOSS) ATTRIBUTABLE TO						
8610	Shareholders of the Company	<u>\$ 8,536</u>	<u>\$ 257,357</u>	<u>8</u>	<u>\$ 10,145</u>	<u>\$ 308,743</u>	<u>7</u>
	TOTAL COMPREHENSIVE INCOME (LOSS) ATTRIBUTABLE TO						
8710	Shareholders of the Company	<u>\$ 8,160</u>	<u>\$ 339,293</u>	<u>10</u>	<u>\$ 10,585</u>	<u>\$ 116,806</u>	<u>3</u>
	EARINGS PER SHARE (Note 26)						
9710	Basic Earnings per Share	<u>\$ 0.14</u>	<u>\$ 4.22</u>		<u>\$ 0.17</u>	<u>\$ 5.08</u>	
9810	Diluted Earnings per Share	<u>\$ 0.13</u>	<u>\$ 4.03</u>		<u>\$ 0.16</u>	<u>\$ 4.92</u>	

The accompanying notes are an integral part of the consolidated financial statements.

**ALCHIP TECHNOLOGIES, LIMITED AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY**

(In Thousands of New Taiwan Dollars)

Code	Capital Surplus										Retained Earnings			Other Equity			
	Share Capital	Share Premium	Share Options	Treasury Shares	Total	Special Reserve	Unappropriated Earnings	Total	Exchange Differences on Translating Foreign Operations	Unrealized Gain (Loss) on Available-for-sale Financial Assets	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Treasury Shares	Total Equity				
A1	BALANCE, JANUARY 1, 2017	\$ 607,028	\$ 1,344,253	\$ 37,849	\$ 6,121	\$ 1,388,223	\$ 67,693	\$ 353,739	\$ 421,432	\$ 159,076	\$ 18,191	\$ -	\$ 2,557,568				
N1	Share-based Compensation	-	-	19,973	-	19,973	-	-	-	-	-	-	19,973				
K1	Issue of Ordinary Shares Under the Employee Share Options	2,982	21,520	(4,404)	-	17,116	-	-	-	-	-	-	20,098				
D1	Net Profit for the Year Ended December 31, 2017	-	-	-	-	-	308,743	308,743	-	-	-	-	308,743				
D3	Other Comprehensive Income (Loss) for the Year Ended December 31, 2017	-	-	-	-	-	-	-	(203,635)	11,698	-	-	(191,937)				
D5	Total Comprehensive Income (Loss) for the Year Ended December 31, 2017	-	-	-	-	-	308,743	308,743	(203,635)	11,698	-	-	116,806				
Z1	BALANCE, DECEMBER 31, 2017	610,010	1,365,773	53,418	6,121	1,425,312	67,693	662,482	730,175	44,559	6,493	-	2,714,445				
A3	Effects of Retrospective Application	-	-	-	-	-	-	(13,194)	(13,194)	-	6,493	7,509	808				
A5	Adjusted Balance January 1, 2018	610,010	1,365,773	53,418	6,121	1,425,312	67,693	649,288	716,981	44,559	-	-	2,715,253				
B5	Appropriation of 2017 Earnings Cash Dividends	-	-	-	-	-	-	(64,008)	(64,008)	-	-	-	(64,008)				
N1	Share-based Compensation	-	-	47,675	-	47,675	-	-	-	-	-	-	47,675				
K1	Issue of Ordinary Shares Under the Employee Share Options	6,971	55,056	(21,457)	-	33,599	-	-	-	-	-	-	40,570				
L1	Buy-back of Treasury Shares	-	-	-	(6,121)	(50,226)	-	(88,408)	(88,408)	-	-	(157,884)	(157,884)				
L3	Cancellation of Treasury Shares	(19,250)	(44,105)	-	-	-	-	257,357	257,357	-	-	157,884	-				
D1	Net Income in 2018	-	-	-	-	-	-	-	-	-	-	-	257,357				
D3	Other Comprehensive Income (Loss) for the Year Ended December 31, 2018	-	-	-	-	-	-	-	94,258	(12,322)	-	-	81,936				
D5	Total Comprehensive Income (Loss) for the Year Ended December 31, 2018	-	-	-	-	-	-	257,357	94,258	(12,322)	-	-	339,293				
Z1	BALANCE, DECEMBER 31, 2018	\$ 597,731	\$ 1,376,724	\$ 79,636	\$ -	\$ 1,456,360	\$ 67,693	\$ 754,279	\$ 821,922	\$ 49,699	\$ -	\$ -	\$ 2,920,899				

The accompanying notes are an integral part of the consolidated financial statements.

**ALCHIP TECHNOLOGIES, LIMITED AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY**

(In Thousands of U.S. Dollars)

Code	Capital Surplus				Retained Earnings			Other Equity					
	Share Capital	Share Premium	Share Options	Treasury Shares	Total	Special Reserve	Unappropriated Earnings	Total	Exchange Differences on Translating Foreign Operations	Unrealized Gain(Loss) on Available-for-sale Financial Assets	Unrealized Gain(Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Treasury Shares	Total Equity
	\$	\$	\$	\$	\$	\$	\$	\$	(\$)	(\$)	\$	\$	\$
A1	19,030	43,090	1,171	199	44,460	2,799	13,876	16,675	323	537	-	-	79,305
N1	-	-	656	-	656	-	-	-	-	-	-	-	656
K1	99	705	(139)	-	566	-	-	-	-	-	-	-	665
D1	-	-	-	-	-	-	10,145	10,145	-	-	-	-	10,145
D3	-	-	-	-	-	-	-	-	56	384	-	-	440
D5	-	-	-	-	-	-	10,145	10,145	56	384	-	-	10,585
Z1	19,129	43,795	1,688	199	45,682	2,799	24,021	26,820	(267)	(153)	-	-	91,211
A3	-	-	-	-	-	-	(443)	(443)	-	153	317	-	27
A5	19,129	43,795	1,688	199	45,682	2,799	23,578	26,377	(267)	-	317	-	91,238
B5	-	-	-	-	-	-	(2,135)	(2,135)	-	-	-	-	(2,135)
N1	-	-	1,581	-	1,581	-	-	-	-	-	-	-	1,581
K1	236	1,831	(691)	-	1,140	-	-	-	-	-	-	-	1,376
L1	-	-	-	-	-	-	-	-	-	-	-	(5,124)	(5,124)
L3	(604)	(1,416)	-	(199)	(1,615)	-	(2,905)	(2,905)	-	-	-	5,124	-
D1	-	-	-	-	-	-	8,536	8,536	-	-	-	-	8,536
D3	-	-	-	-	-	-	-	-	32	(408)	(408)	-	(376)
D5	-	-	-	-	-	-	8,536	8,536	32	(408)	(408)	-	8,160
Z1	18,761	44,210	2,578	-	46,788	2,799	27,074	29,873	(235)	(91)	(91)	-	95,096

The accompanying notes are an integral part of the consolidated financial statements.



**ALCHIP TECHNOLOGIES, LIMITED AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(In Thousands of U.S. Dollars and New Taiwan Dollars)

Code		2018		2017	
		US\$	NT\$	US\$	NT\$
	<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>				
A10000	Income Before Income Tax	\$ 11,105	\$ 334,805	\$ 11,796	\$ 358,985
A20010	Adjustments For:				
A20100	Depreciation and Amortization	26,072	786,037	16,469	501,183
A20300	Expected Credit Losses	1,434	43,248	-	-
A20300	Impairment loss(reversed) on trade receivables	-	-	( 18 )	( 561 )
A20900	Interest Expenses	30	891	60	1,815
A21200	Interest Income	( 1,535 )	( 46,286 )	( 1,222 )	( 37,201 )
A21900	Share-based Compensation	1,581	47,675	656	19,973
A22500	Loss on Disposal of Equipment	16	491	3	105
A23100	Net Loss on Disposal of Financial Assets	69	2,072	247	7,515
A23800	(Reversal of) Write-down of Inventories	618	18,627	( 605 )	( 18,398 )
A24100	Net (Gain) Loss on Foreign Currency Exchange	227	6,854	( 64 )	( 1,953 )
A29900	Amortization of Prepayments	2,995	90,290	2,048	62,314
A30000	Net Changes in Operating Assets and Liabilities				
A31150	Accounts Receivable	( 7,834 )	( 236,204 )	16,504	502,267
A31180	Other Receivables	( 49 )	( 1,478 )	239	7,286
A31200	Inventories	( 7,743 )	( 233,414 )	3,650	111,044
A31230	Prepayments	( 3,652 )	( 110,098 )	( 2,936 )	( 89,354 )
A31240	Other Current Assets	( 231 )	( 6,952 )	185	5,625
A32125	Contract Liabilities	9,817	295,980	-	-
A32150	Accounts Payable	2,850	85,937	( 7,237 )	( 220,239 )
A32180	Other Payables	7	253	( 866 )	( 26,343 )
A32210	Advanced Sales Receipts	-	-	249	7,586
A32230	Other Current Liabilities	( 341 )	( 10,279 )	367	11,161
A32990	Deferred Revenue	584	17,614	1,459	44,398
A33000	Cash Generated from Operations	36,020	1,086,063	40,984	1,247,208
A33300	Interest Paid	( 35 )	( 1,069 )	( 59 )	( 1,799 )
A33500	Income Tax Paid	( 2,167 )	( 65,374 )	( 98 )	( 2,938 )
AAAA	Net Cash Generated from Operating Activities	<u>33,818</u>	<u>1,019,620</u>	<u>40,827</u>	<u>1,242,471</u>
	<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>				
B00010	Acquisition of Financial Assets at Fair Value through Other Comprehensive Income Acquired	( 633 )	( 19,081 )	-	-
B00020	Proceeds from Disposal of Financial Assets at Fair Value Through Other Comprehensive Income	5,894	177,693	-	-
B00040	Acquisition of Financial Assets at Amortized Cost	( 23,287 )	( 702,085 )	-	-
B00050	Proceeds from Disposal of Financial Assets at Amortized Cost	3,700	111,551	-	-
B00300	Acquisition of Available-for-sale Financial Assets	-	-	( 926 )	( 28,189 )

(Continued on next page)

(Continued from previous page)

Code		2018		2017	
		US\$	NT\$	US\$	NT\$
B00400	Proceeds from Disposal of Available-for-sale Financial Assets	\$ -	\$ -	\$ 2,614	\$ 79,562
B02700	Payments for Property, Plants, and Equipment	( 23,628 )	( 712,420 )	( 15,596 )	( 474,639 )
B02800	Proceeds from Disposal of Property, Plants, and Equipment	-	7	-	3
B03700	Decrease in Refundable Deposits	32	987	14	416
B04500	Payments for Intangible Assets	( 5,068 )	( 152,801 )	( 4,023 )	( 122,436 )
B07500	Interest Received	<u>1,250</u>	<u>37,700</u>	<u>1,309</u>	<u>39,830</u>
BBBB	Net Cash Used in Investing Activities	( <u>41,740</u> )	( <u>1,258,449</u> )	( <u>16,608</u> )	( <u>505,453</u> )
	CASH FLOWS FROM FINANCING ACTIVITIES				
C00100	Repayment of Short-term Borrowing	( 1,414 )	( 42,624 )	( 2,757 )	( 83,893 )
C04500	Cash Dividends	( 2,135 )	( 64,008 )	-	-
C04800	Proceeds from Exercise of Employee Share Options	1,376	40,570	665	20,098
C04900	Payments for Buy-back of Ordinary Shares	( <u>5,124</u> )	( <u>157,884</u> )	-	-
CCCC	Net Cash Used in Financing Activities	( <u>7,297</u> )	( <u>223,946</u> )	( <u>2,092</u> )	( <u>63,795</u> )
DDDD	EFFECTS OF EXCHANGE RATE CHANGES ON THE BALANCE OF CASH HELD IN FOREIGN CURRENCIES	( <u>87</u> )	<u>42,797</u>	<u>160</u>	( <u>85,182</u> )
EEEE	NET INCREASE(DECREASE)IN CASH AND CASH EQUIVALENTS	( 15,306 )	( 419,978 )	22,287	588,041
E00100	CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE YEAR	<u>52,490</u>	<u>1,562,091</u>	<u>30,203</u>	<u>974,050</u>
E00200	CASH AND CASH EQUIVALENTS AT THE END OF THE YEAR	<u>\$ 37,184</u>	<u>\$ 1,142,113</u>	<u>\$ 52,490</u>	<u>\$ 1,562,091</u>

The accompanying notes are an integral part of the consolidated financial statements.

**ALCHIP TECHNOLOGIES, LIMITED AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
**FOR THE YEARS ENDED DECEMBER 31, 2018 AND 2017**  
**(In Thousands of US Dollars and New Taiwan Dollars, Unless Stated Otherwise)**

**1. GENERAL INFORMATION**

Alchip Technologies, Limited (the Company) was incorporated in the Cayman Islands on February 27, 2003. The Company is mainly engaged in the research and development, design, and manufacture of fabless application specific integrated circuits (ASIC) and system on a chip (SoC) and the rendering of related services.

The Company's shares have been listed on the Taiwan Stock Exchange (TWSE) since October 28, 2014.

**2. APPROVAL OF STATEMENTS**

The consolidated financial statements of the Company and its subsidiaries (collectively referred to as the Company) were approved by the Company's Board of Directors and authorized for issue on March 15, 2019.

**3. APPLICATION OF NEW AND REVISED STANDARDS, AMENDMENTS AND INTERPRETATIONS**

a. Initial application of the amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), Interpretations of IFRS (IFRIC), and Interpretations of IAS (SIC) (collectively, the "IFRSs") endorsed and issued into effect by the FSC.

Except for the following, whenever applied, the initial application of the amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the IFRSs endorsed and issued into effect by the FSC would not have any material impact on the Company's accounting policies:

IFRS 9 "Financial Instruments" and related amendments

IFRS 9 supersedes IAS 39 "Financial Instruments: Recognition and Measurement" with consequential amendments to IFRS 7 "Financial Instruments: Disclosure" and other standards. IFRS 9 sets out requirements for classification, measurement, and impairment of financial assets and hedge accounting. Please refer to Note 4 for information relating to the relevant accounting policies.

The Company applies the requirements of financial assets classification, measurement and impairment retrospectively on January 1, 2018, and applies general hedge accounting prospectively. IFRS 9 is not applicable to the derecognition items prior to December 31, 2017 (inclusive).



- (1) Bond Investments previously classified as available-for-sale financial assets under IAS 39, with the contractual cash flows deriving from sole payments of principal and interest on the principal outstanding, are classified as FVTOCI and assessed the expected credit loss under IFRS 9 because these investments are held within a business model whose objective is both to collect contractual cash flows and sell the financial assets. As a result of retrospective application, the adjustments would result in a decrease in the carrying amount on the financial assets at FVTOCI of NT\$7,403 thousand (US\$249 thousand), a decrease in retained earnings of NT\$21,405 thousand (US\$719 thousand), a reclassification from “other equity-unrealized loss of available-for-sale financial assets” to “other equity-unrealized loss of financial assets FVTOCI” of NT\$6,493 thousand (US\$153 thousand), and an increase in “other equity-unrealized gain of financial assets at FVTOCI” of NT\$14,002 thousand (US\$470 thousand) on January 1, 2018
  - (2) Accounts receivables and other receivables that were classified as loans and receivables under IAS 39 are now classified as financial assets at amortized cost with assessment of expected credit loss under IFRS 9. As a result of retrospective application, the adjustments would result in a decrease in loss allowance for accounts receivable of NT\$8,211 thousand (US\$276 thousand) and an increase in retained earnings of NT\$8,211 thousand (US\$276 thousand) on January 1, 2018.
  - (3) Cash and cash equivalents and pledged time deposit previously classified as loans and receivables under IAS 39 are classified as measured at amortized cost under IFRS 9 because the contractual cash flows are sole payments of principal and interest on principal outstanding and are held within a business model whose objective is to collect contractual cash flows.
- b. Amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers and (IFRS) endorsed by the FSC for application starting from 2019.

New, Revised, or Amended Standards and Interpretations	Effective Date Announced by IASB (Note 1)
Annual Improvements to IFRSs 2015-2017 Cycle	January 1, 2019
Amendments to IFRS 9 “Prepayment Features with Negative Compensation”.	January 1, 2019 (Note 2)
IFRS 16 “Leases”.	January 1, 2019
Amendments to IAS 19 “Plan Amendment, Curtailment or Settlement”.	January 1, 2019 (Note 3)
Amendments to IAS 28 “Long-term Interests in Associates and Joint Ventures”.	January 1, 2019
IFRIC 23 “Uncertainty Over Income Tax Treatments”.	January 1, 2019

Note 1: Unless stated otherwise, the above New, Revised, or Amended Standards and Interpretations are effective for annual periods beginning on or after their respective effective dates.

Note 2: The FSC permits the election of early adoption of the amendments starting from 2018.

Note 3: The Company shall apply these amendments to plan amendments, curtailments, or settlements occurring on or after January 1, 2019.

### IFRS 16 “Leases”

IFRS 16 sets out the accounting standards for leases that will supersede IAS 17 “Lease”, IFRIC 4 “Determining Whether an Arrangement Contains a Lease”, and a number of related interpretations.

### Definition of Lease

Upon initial application of IFRS 16, the Company will apply the guidance of IFRS 16 in determining whether contracts are, or contain, a lease only to contracts entered into (or changed) on or after January 1, 2019. Contracts identified as containing a lease under IAS 17 and IFRIC 4 will not be reassessed and will be accounted for in accordance with the transitional provisions under IFRS 16.

### The Company as Lessee

Upon the initial application of IFRS 16, except for payments for low-value assets and short-term leases which will be recognized as expenses on a straight-line basis, the Company will recognize right-of-use assets and lease liabilities for all leases on the consolidated balance sheets. On the consolidated statements of comprehensive income, the Company will present the depreciation expense charged on right-of-use assets separately from the interest expense accrued on lease liability and computed using the effective interest method. On the consolidated statements of cash flows, cash payments for the principle portion of lease liability and cash payments for the interest portion are classified within financing activities and operating activities respectively. Currently, payments for operating lease contracts are recognized as expenses on a straight-line basis. Cash flow for operating leases are classified within the operating activities on the consolidated statements of cash flows.

The Company applying IFRS 16 retrospectively with the cumulative effect of the initial application of this standard recognized on January 1, 2019. Comparative information will not be restated.

Lease agreements classified as operating leases under IAS 17 will be measured at the present value of the remaining lease payments, discounted using the lessee’s incremental borrowing rate on January 1, 2019. Right-of-use assets are measured at the amount equal to the carrying value of lease liabilities (adjusted by the amount of

any prepaid or accred lease payments). Right-of-use assets are subject to impairment testing under IAS 36.

The Company expects to apply the following practical expedients:

- 1) The Company will apply a single discount rate to a portfolio of leases with reasonably similar characteristics to measure lease liabilities.
- 2) The Company will account for those leases for which the lease term ends on or before December 31, 2019 as short-term leases.
- 3) The Company will exclude initial direct costs from the measurement of right-of-use assets on January 1, 2019.
- 4) The Company will use hindsight, such as in determining lease terms, to measure lease liabilities.

#### The Company as Lessor

The Company will not make any adjustments for leases in which it is a lessor, and will account for those leases under IFRS 16 starting from January 1, 2019.

#### Impacts on Assets, Liabilities, and Equity on January 1, 2019

	Carrying Amount as of December 31, 2018	Adjustments Arising from Initial Application	Adjusted Carrying Amount as of January 1, 2019
Right-of-use Assets	\$ -	\$ 140,206	\$ 140,206
Other Non-current Assets	<u>16,326</u>	<u>( 1,378)</u>	<u>14,948</u>
Total Effect on Assets	<u>\$ 16,326</u>	<u>\$ 138,828</u>	<u>\$ 155,154</u>
Lease Liabilities - Current	\$ -	\$ 34,096	\$ 34,096
Lease Liabilities - Non-current	<u>-</u>	<u>104,732</u>	<u>104,732</u>
Total Effect on Liabilities	<u>\$ -</u>	<u>\$ 138,828</u>	<u>\$ 138,828</u>

Except for the above impacts, as of the date the consolidated financial statements were authorized for issue, the Company assessed the possible impacts that the aforementioned standard and interpretations would have on the Company's financial position and financial performance, and concluded that there would be no material impacts.

- c. The IFRSs issued by IASB but not yet endorsed and issued into effect by the FSC

<u>New, Revised, or Amended Standards and Interpretations</u>	<u>Effective Date Announced by IASB (Note 1)</u>
Amendments to IFRS 3 "Definition of a Business".	January 1, 2020 (Note 2)
Amendments to IFRS 10 and IAS 28 "Sale or	To be determined by IASB.

New, Revised, or Amended Standards and Interpretations	Effective Date Announced by IASB (Note 1)
Contribution of Assets Between an Investor and its Associate or Joint Venture”.	
IFRS 17 “Insurance Contracts”.	January 1, 2021
Amendments to IAS 1 and IAS 8 “Definition of Material”.	January 1, 2020 (Note 3)

Note 1: Unless stated otherwise, the above New, Revised, or Amended Standards and Interpretations are effective for annual periods beginning on or after their respective effective dates.

Note 2: The Company shall apply these amendments to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period starting on or after January 1, 2020 and to asset the acquisitions that occur on or after the aforementioned period .

Note 3: The Company shall apply these amendments prospectively for annual reporting periods starting on and after January 1, 2020.

As of the date the consolidated financial statements were authorized for issue, the Company is continuously assessing the possible impact that the application of above standards and interpretations will have on the Company’s financial position and financial performance, and will disclose the relevant impact when the assessment is completed.

#### **4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICY**

##### **Statement of Compliance**

The consolidated financial statements have been prepared in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers, and IFRSs as endorsed and issued into effect by the FSC.

##### **Basics of Preparation**

The consolidated financial statements have been prepared on the historical cost basis except for financial instruments that are measured at fair values.

The fair value measurements are grouped into Levels 1 to 3 based on the degree to which the fair value measurement inputs are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

- a. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities;
- b. Level 2 inputs are 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); and



- c. Level 3 inputs are unobservable inputs for the asset or liability.

The functional currency of the Company is U.S. dollars. For greater comparability and consistency of financial reporting, the consolidated financial statements are presented in New Taiwan dollars since the Company's shares are listed on the Taiwan Stock Exchange. The assets and liabilities items are translated into New Taiwan dollars using exchange rates prevailing at the end of each reporting period, the equity items are translated at the historical exchange rates, and the income and expense items are translated at the average exchange rates for the period. Exchange differences arising are recognized in exchange differences on translating foreign operations.

### **Classification of Current and Non-current Assets and Liabilities**

Current Assets Include:

- a. Assets held primarily for the purpose of trading;
- b. Assets expected to be realized within twelve months after the reporting period;  
and
- c. Cash and cash equivalents unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period.

Current Liabilities Include:

- a. Liabilities held primarily for the purpose of trading;
- b. Liabilities due to be settled within twelve months after the reporting period;  
and
- c. Liabilities for which the Company does not have an unconditional right to defer settlement for at least twelve months after the reporting period.

Assets and liabilities that are not classified as current are classified as non-current.

### **Basis of Consolidation**

The consolidated financial statements incorporate the financial statements of the Company and the entities controlled by the Company (i.e. its subsidiaries). Adjustments have been made to the financial statements of subsidiaries to bring their accounting policies to be consistent with those used by the Company. All intercompany transactions, balance, income and expenses are eliminated in full upon consolidation. For subsidiaries' details, percentage of ownership, and main businesses and products, see Note 13, Table 5 and Table 6 to the consolidated financial statements.

## **Foreign Currencies**

In preparing the financial statements of each individual Company entity, transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions.

At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Exchange differences on monetary items arising from settlement or translation are recognized in profit or loss in the period in which they arise.

Non-monetary items measured at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Exchange differences arising on the retranslation of non-monetary items are included in profit or loss for the period except for exchange differences arising from the retranslation of non-monetary items in respect to which gains and losses are recognized directly in other comprehensive income, in which case, the exchange differences are also recognized directly in other comprehensive income.

Non-monetary items that are measured at historical cost in a foreign currency are not retranslated.

For the purposes of presenting consolidated financial statements, the assets and liabilities of the Company are translated into New Taiwan Dollar using exchange rates prevailing at the end of each reporting period. Income and expense items are translated at the average exchange rates for the period. Exchange differences arising are recognized in other comprehensive income. The exchange differences accumulated in equity which resulted from the translation of assets and liabilities into the presentation currency are not subsequently reclassified to profit and loss.

## **Inventories**

Inventories include raw materials, materials, finished products, and works in progress and are stated at the lower of cost or net realizable value. Inventories write-downs are made by item, except where it may be appropriate to group similar or related items. Net realizable value is estimated selling price of inventories less all estimated costs of completion and costs necessary to make the sale. Inventory are recorded at weighted average cost on the balance sheet dated.

## **Property, Plants, and Equipment**

Property, plants, and equipment are stated at cost, less subsequent accumulated depreciation and subsequent accumulated impairment loss.

Depreciation is recognized based on the straight-line basis. Each significant part is depreciated separately. . The Company reviews the estimated useful lives, residual values, and depreciation method at the end of each reporting period, with the effect of any changes in estimates accounted for on a prospective basis.

On derecognition of an item of property, plant, or equipment, the difference between the sales proceeds and the carrying amount of the asset is recognized in profit or loss.

### **Intangible Assets**

Intangible assets separately acquired with finite useful lives are initially measured at the cost and subsequently measured at cost less accumulated amortization and accumulated impairment loss from the cost. Amortization is recognized on a straight-line basis . The estimated useful lives, residual values, and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate accounted for on a prospective basis.

On derecognition of an intangible asset, the difference between the net disposal proceeds and the carrying amount of the asset is recognized in profit or loss.

### **Impairment of Tangible and Intangible Assets**

At the end of each reporting period, the Company reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. Corporate assets are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis.

Recoverable amount is the higher of fair value less costs to sell and value in use. If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount, with the resulting impairment loss recognized in profit or loss.

When an impairment loss is subsequently reversed, the carrying amount of the asset or cash-generating unit is increased to the revised estimate of its recoverable amount, but only to the extent of the carrying amount that would have been determined had no impairment loss been recognized for the asset or cash-generating unit in prior years. A reversal of an impairment loss is recognized in profit or loss.

## **Financial Instruments**

Financial assets and financial liabilities are recognized when a Company entity becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss

### Financial Assets

All regular way purchases or sales of financial assets made in the regular method are recognized and derecognized on a trade date basis.

#### a. Measurement Category

##### 2018

Financial assets are classified into the following categories: financial assets at amortized cost and investments in debt instruments at FVTOCI.

#### 1) Financial Assets at Amortized Cost

Financial assets that satisfy the following two conditions are measured at amortized cost:

- i. Financial assets are held within a business model whose objective is to collect contractual cash flows; and
- ii. The contractual terms of financial assets give rise on specified dates that cash flows are solely payments of principal and interest on principal outstanding.

Subsequent to the initial recognition, financial assets at the amortized cost (including the cash and cash equivalents, accounts receivable, other receivables, and pledged time deposits) are measured at amortized cost, which equals gross carrying amount determined by the effective interest method less any impairment loss. Exchange differences are recognized in profit or loss.

Cash equivalents include time deposits with original maturities within three months from the date of acquisition, high liquidity, readily convertible to a known amount of cash, and are subject to an insignificant risk of changes in value. These cash equivalents are held for the purpose of meeting short-term cash commitments.

2) Investments in Debt Instrument at FVTOCI

Investments in debt instruments that satisfy the following two conditions are measured at financial assets at FVTOCI:

- i. Financial assets are held within a business model whose objective is to collect contractual cash flows and sell financial assets; and
- ii. The contractual terms of financial assets give rise on specified dates that cash flows are solely payments of principal and interest on principal outstanding.

Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment gains or losses on investments in debt instruments at FVTOCI are recognized in profit or loss. Other changes in the carrying amount of these debt instruments are recognized in other comprehensive income and will be reclassified to profit or loss when these debt instruments are disposed.

2017

Financial assets are classified into the following categories: Available-for-sale financial assets, and loans and receivables.

1) Available-for-sale Financial Assets

Available-for-sale financial assets are non-derivatives that are either designated as available-for-sale or are not classified as loans and receivables, held-to-maturity investments or financial assets at fair value through profit or loss.

Available-for-sale financial assets are measured at fair value. Changes in the carrying amount of available-for-sale monetary financial assets relating to changes in foreign currency exchange rates, interest income calculated using the effective interest method, and dividends on available-for-sale equity investments are recognized in profit or loss. Other changes in the carrying amount of available-for-sale financial assets are recognized in other comprehensive income and will be reclassified to profit or loss when the investment is disposed of or is determined to be impaired.

Dividends on available-for-sale equity instruments are recognized in profit or loss when the Company's right to receive the dividends is established.

Available-for-sale equity investments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured and derivatives that are linked to and must be settled by delivery of such unquoted equity investments are measured at cost less any identified impairment loss at the end of each reporting period and are presented in a separate line item as financial assets carried at cost. If, in a subsequent period, the fair value of the financial assets can be reliably measured, the financial assets are remeasured at fair value. The difference between carrying amount and fair value is recognized in other comprehensive income on financial assets. Any impairment losses are recognized in profit and loss.

## 2) Loans and Receivables

Loans and receivables, including cash and cash equivalents, accounts receivable, other receivables, debt investments with no active market, and pledged time deposits, are measured using the effective interest method at amortized cost less any impairment, except for short-term receivables when the effect of discounting is immaterial.

Cash equivalents include time deposits and short-term investments with original maturities within three months from the date of acquisition, which are highly liquid, readily convertible to a known amount of cash, and are subject to an insignificant risk of changes in value. These cash equivalents are held for the purpose of meeting short-term cash commitments.

## b Impairment of Financial Assets

### 2018

The Company recognizes a loss allowance for expected credit losses on financial assets at amortized cost (including accounts receivable) and investments in debt instruments measured at FVTOCI at the end of each reporting period.

The loss allowance for accounts receivable is measured at lifetime expected credit loss. For other financial assets, the Company recognizes lifetime expected credit losses when there have been a significant increase in credit risk since initial recognition. If, on the other hand, the credit risk on the financial assets have not increased significantly since initial recognition, the Company measures the loss allowance of the financial assets at an amount equal to 12-month expected credit losses.

Expected credit losses reflect the weighted average of credit loss with the respective risks of default occurring. Lifetime expected credit losses represent the expected credit losses that will result from all possible default events over the expected life of a financial instrument. In contrast, 12-month expected credit losses represent the portion of lifetime expected credit losses that is expected to result from default events on a financial instrument that are possible within 12 months after the reporting date.

The Company recognizes an impairment loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVTOCI, for which the loss allowance is recognized in the other comprehensive income and does not reduce the carrying amount of the financial assets.

## 2017

Financial assets are assessed for indicators of impairment at the end of each reporting period. Financial assets are considered to be impaired when there is objective evidence that, as a result of one or more events that occurred after the initial recognition of the financial asset, the estimated future cash flows of the investment have been affected.

For financial assets carried at amortized cost, assets are assessed for impairment on a collective basis even if they were assessed not to be impaired individually.

For financial assets carried at amortized cost, the amount of the impairment loss recognized is the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the financial asset's original effective interest rate.

For financial assets measured at amortized cost, if, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognized, the previously recognized impairment loss is reversed through profit or loss to the extent that the carrying amount of the investment at the date the impairment is reversed does not exceed what the amortized cost would have been had the impairment not been recognized.

In respect of available-for-sale debt securities, the impairment loss is subsequently reversed through profit or loss if an increase in the fair value of the investment can be objectively related to an event occurring after the recognition of the impairment loss.

When an available-for-sale financial asset is considered to be impaired, cumulative gains or losses previously recognized in other comprehensive income are reclassified to profit or loss in the period.

Available-for-sale equity instruments, impairment losses previously recognized in profit or loss are not reversed through profit or loss. Any increase in fair value subsequent to the recognition of an impairment loss is recognized in the other comprehensive income. When the fair value of available-for-sale debt instruments is increased in the subsequent period and where such increase can be objectively linked to the events occurring after the impairment loss is recognized in profit or loss, then the impairment loss is reversed and is recognized in profit or loss.

For financial assets that are carried at cost, the amount of the impairment loss is measured as the difference between the asset's carrying amount and the present value of the estimated future cash flows discounted at the current market rate of return for a similar financial asset. Such impairment loss will not be reversed in subsequent periods.

The carrying amount of the financial asset is reduced by the impairment loss directly for all financial assets with exception of trade receivables, where the carrying amount is reduced through the use of an allowance account. When a trade receivable is considered uncollectable, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are credited against the allowance account. Changes in the carrying amount of the allowance account are recognized in profit or loss except for uncollectable trade receivables that are written off against the allowance account.



c Derecognition of Financial Assets

The Company derecognizes a financial asset only when the contractual rights to the cash flows from the asset expires, or when it transfers the financial asset to another party with substantially all the risks and rewards of ownership.

Before 2018, on derecognition of a financial asset in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income was recognized in profit or loss. From 2018, on derecognition of a financial asset at amortized cost in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivables is recognized in profit or loss. On derecognition of an investment in debt instrument at FVTOCI in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income is recognized in profit or loss.

### **Revenue Recognition**

#### 2018

The Company identifies the contract performance obligations and recognizes revenue when all of the contract performance obligations are satisfied.

a. Revenue from Sales of Goods

The Company recognizes revenue and accounts receivable when promised goods are delivered to the customer's specified location, customer obtains control of goods and performance obligation is satisfied.

b. Revenue from Rendering of Non-Recruing Engineering (NRE) service

The Company provides NRE service which does not create assets of other purposes to the Company, and the Company has the executable rights on the receivables for the completed contract performance, the revenue is recognized when service is provided. NRE service measures its level of completeness based on the output method and milestones achieved.

#### 2017

Revenue is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates, and other similar allowances.

a. Sale of Goods

Revenue from the sale of goods is recognized when all the following conditions are satisfied:

- 1) The Company has transferred to the buyer the significant risks and rewards of ownership of the goods;
- 2) The Company retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;
- 3) The amount of revenue can be measured reliably;
- 4) It is probable that the economic benefits associated with the transaction will flow to the Company; and
- 5) The costs incurred or to be incurred with respect to the transaction can be measured reliably.

b. Rendering of Services

Revenue from a contract to provide services is recognized with reference to the stage of completion of the contract.

c. Interest Income

Interest income of financial assets is recognized when it is possible that the economic benefit will flow to the Company and the amount of income can be measured reliably. Interest income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable

**Leases**

Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

a. The Company as the Lessor

Lease income from operating leases is recognized on a straight-line basis over the lease term.

b. The Company as the Lessee

Operating lease payments are recognized as an expense on a straight-line basis over the lease term.

## **Government Grants**

Government grants are recognized when there is a reasonable assurance that the Company is able to comply with the conditions specified and that the grants is received.

Government grants that are receivables as compensation for relevant cost already incurred are recognized in profit or loss in the period in which cost is recognized as expenses. Government grants whose primary condition is the Company should purchase, construct or otherwise acquire noncurrent assets are recognized as deferred income, and transferred deferred income to profit and loss over the useful lives of related assets..

## **Employee Benefits**

### **a. Short-term Employee Benefits**

Liabilities recognized in respect of short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in exchange for the related service.

### **b. Post-employment Benefits**

Payments to defined contribution retirement benefit plans are recognized as an expense when employees have rendered service entitling them to the contributions.

## **Share-based Payment Arrangements**

The fair value at the grant date of the employee share options is expensed on a straight-line basis over the vesting period, based on the Company's best estimates of the number of shares or options that are expected to ultimately vest, with a corresponding increase in capital surplus - employee share options. It is recognized as an expense in full at the grant date if vesting immediately.

At the end of each reporting period, the Company revises its estimate of the number of employee share options expected to vest. The impact of the revision of the original estimates is recognized in profit or loss such that the cumulative expense reflects the revised estimate, with a corresponding adjustment to the capital surplus - employee share options.

## **Taxation**

Income tax expense represents the sum of the tax currently payable and deferred tax.

a. Current Tax

According to the Income Tax law, an additional tax of unappropriated earnings is provided for as income tax in the year the shareholders approve to retain earnings.

Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

b. Deferred Tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities and the corresponding tax bases used in the computation of taxable profit.

Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, unused loss carry forward, and unused tax credits to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered. A previously unrecognized deferred tax asset is also reviewed at the end of each reporting period and recognized to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the period in which the liabilities are settled or the assets are realized, based on tax rates and tax laws that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

c. Current and Deferred Tax for the Year

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity respectively.

## 5. CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

In the application of the Company's accounting policies, management is required to make judgments, estimates, and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered relevant. 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 if the revisions affect only that period or in the period of the revisions and future periods if the revisions affect both current and future periods.

### 1) Impairment of Equipment and Intangible Assets

The impairment of equipment and intangible assets in relation to the design and production of chips is based on the recoverable amount of those assets, which is the higher of fair value less costs to sell or value-in-use of those assets. Any changes in the market price or future cash flows will affect the recoverable amount of those assets and may lead to a recognition of additional or a reversal of impairment losses.

## 6. CASH AND CASH EQUIVALENTS

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
<u>NT\$</u>		
Demand Deposits	\$ 716,405	\$ 1,485,842
Time Deposits with Original Maturities Within Three Months from the Date of Acquisition	399,295	59,520
Checking Accounts	25,562	16,416
Petty Cash	<u>851</u>	<u>313</u>
	<u>\$ 1,142,113</u>	<u>\$ 1,562,091</u>
 <u>US\$</u>		
Demand Deposits	\$ 23,324	\$ 49,927
Time Deposits with Original Maturities Within Three Months from the Date of Acquisition	13,000	2,000
Checking Accounts	832	552
Petty Cash	<u>28</u>	<u>11</u>
	<u>\$ 37,184</u>	<u>\$ 52,490</u>

The market rate intervals of cash in bank at the end of the reporting period were as follows:

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
Bank Balance	0.01%~2.93%	0.01%~1.95%

**7. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME-2018**

	<u>December 31, 2018</u>
<u>Current</u>	
<u>NT\$</u>	
Foreign Bonds Investments	<u>\$ 20,889</u>
<u>US\$</u>	
Foreign Bonds Investments	<u>\$ 680</u>
<u>Non-current</u>	
<u>NT\$</u>	
Foreign Bonds Investments	<u>\$318,809</u>
<u>US\$</u>	
Foreign Bonds Investments	<u>\$ 10,380</u>

The foreign corporate bonds were classified as available-for-sale financial assets under IAS 39. Refer to Note 3 and Note 10 for information relating to reclassification and comparative information.

By the end of December 31, 2018, information on foreign corporate bonds held by the Company was as follows:

<u>Company Name</u>	<u>Coupon Rate</u>	<u>Effective Rate</u>	<u>Period</u>
BANCO BTG PACTUAL SA	4.00%	5.34%	7
BANCO DO BRASIL	3.88%	4.39%	10
BPCE SA	5.15%	4.23%	10
CENTURYLINK INC	5.80%	5.02%	10
CHINA CINDA FINANCE 2015 I LTD	4.25%	4.20%	10
CHINA ENERGY RESERVE AND CHEMICALS GROUP OVERSEAS CO LTD	5.25%/6.25%	4.71%/6.08%	3
HUARONG FINANCE II CO LTD	5.50%	4.38%/4.69%	10
NORDDEUTSCHE LANDESBANK	6.25%	5.83%/6.13%	10
PCPD CAPITAL LTD	4.75%	4.07%	5
SPRINT CORP	7.13%	7.51%	10
STANDARD CHARTERED PLC	5.70%	4.21%	10

## 8. FINANCIAL ASSETS AT AMORTIZED COST-2018

December 31, 2018

### Current

#### NT\$

Time Deposits with Original Maturities Exceeding Three Months from the Date of Acquisition	\$ 460,725
Other Debt Instruments	140,896
Less: Loss Allowance	( <u>56</u> )
	<u>\$ 601,565</u>

#### US\$

Time Deposits with Original Maturities Exceeding Three Months from the Date of Acquisition	\$ 15,000
Other Debt Instruments	4,587
Less: Loss Allowance	( <u>2</u> )
	<u>\$ 19,585</u>

Refer to Note 9 for information on credit risk management and impairment loss assessment related to financial assets at amortized cost.

## 9. CREDIT RISK MANAGEMENT OF DEBT INSTRUMENTS-2018

The investments in debt instrument are classified to the financial assets at FVTOCI and Financial Assets at amortized cost respectively.

Year Ended December 31, 2018

	<u>Financial Assets at FVTOCI</u>	<u>Financial Assets at Amortized Cost</u>	<u>Total</u>
<u>NT\$</u>			
Total Carrying Amount	\$ 392,509	\$ 601,621	\$ 994,130
Loss Allowance	( <u>50,033</u> )	( <u>56</u> )	( <u>50,089</u> )
Amortized Cost	342,476	<u>\$ 601,565</u>	944,041
Fair Value Adjustment	( <u>2,778</u> )		( <u>2,778</u> )
	<u>\$ 339,698</u>		<u>\$ 941,263</u>
<u>US\$</u>			
Total Carrying Amount	\$ 12,780	\$ 19,587	\$ 32,367
Loss Allowance	( <u>1,629</u> )	( <u>2</u> )	( <u>1,631</u> )
Amortized Cost	11,151	<u>\$ 19,585</u>	30,736
Fair Value Adjustment	( <u>91</u> )		( <u>91</u> )
	<u>\$ 11,060</u>		<u>\$ 30,645</u>

The Company obtains credit rating information provided by an independent credit rating agency (CRA) in order to continuously track and supervise the credit risk change of the investments in debt instrument. At the same time, the Company reviews the information of bond yield rate curve, debtor material information, and etc. to assess whether the

credit risk of investments in debt instrument has significantly increased since the initial recognition.

The Company considers the historical loss given default (LGD) of each level provided by CRA, the current financial status of the debtor, and its business outlook prediction in order to measure the 12-month expected credit loss or lifetime expected credit loss of the investments in debt instrument. The current credit risk rating mechanism used by the Company is as follows:

Credit Rating	Definition	Expected Credit Loss Recognition Basis	December 31, 2018		
			Expected Credit Loss Rate	Total Carrying Amount (NT\$)	Total Carrying Amount (US\$)
Normal	<i>The credit risk of debtor is low, and it has sufficient ability to repay the contractual cash flow, i.e. the Moody's rating is above Level B.</i>	12-month Expected Credit Loss Rate	0%~2.14%	\$ 938,789	\$ 30,565
Abnormal	The credit risk has significantly increased since the initial recognition, i.e. the Moody's rating has moved from above Level B to below Level B.	Lifetime Expected Credit Loss (expected credit loss increases but no credit impairment)		-	
Default	Credit Impairment Evidence Already Available	Lifetime Expected Credit Loss (with credit impairment)	65.08%~100%	55,341	1,802
Write-off	There is evidence indicating that the debtor is under severe financial difficulty and repayment cannot be reasonably expected.	Write-off	-	-	-

Regarding the investments in debt instrument of financial assets at FVTOCI and amortized cost, the loss allowance change information based on the credit risk rating is summarized as follows:

	Credit Rating		
	Normal	Abnormal	Default
<u>NT\$</u>			
Balance on January 1, 2018 (IAS 39)	\$ -	\$ -	\$ -
Effects of Retrospective Application of IFRS 9	6,478	-	-
Balance on January 1, 2018 (IFRS 9)	6,478	-	-
Credit Rating Change			
- Normal to Default (Note)	( 1,207 )	-	47,404
Purchase of New Debt Instrument	119	-	-
Derecognition	( 668 )	-	-
Exchange Rate and Other Changes	( 1,374 )	-	( 663 )
Loss Allowance on December 31, 2018	<u>\$ 3,348</u>	<u>\$ -</u>	<u>\$ 46,741</u>
<u>US\$</u>			
Balance on January 1, 2018 (IAS 39)	\$ -	\$ -	\$ -
Effects of Retrospective Application of IFRS 9	218	-	-
Balance on January 1, 2018 (IFRS 9)	218	-	-
Credit Rating Change			
- Normal to Default (Note)	( 40 )	-	1,585
Purchase New Debt Instrument	4	-	-
Derecognition	( 22 )	-	-
Exchange Rate and Other Changes	( 51 )	-	( 63 )
Loss Allowance on December 31, 2018	<u>\$ 109</u>	<u>\$ -</u>	<u>\$ 1,522</u>



Note: For the bonds issued by China Energy Reserve and Chemicals Group Overseas Capital Company Limited and matured in May, 2018, due to the principle is failed to be paid upon maturity, the credit rating was changed to default from normal resulting the increase of loss allowance for default by NT\$29,915 thousand (US\$1,000 thousand). For the bonds issued by China Energy Reserve and Chemicals Group International Holding Limited that will mature in November 2019, due to the interest is failed to be paid as scheduled, the credit rating was changed to default from normal resulting the increase of loss allowance for default by NT\$17,498 thousand (US\$585 thousand).

**10. AVAILABLE FOR SALE FINANCIAL ASSETS-2017**

	<u>December 31, 2017</u>
<u>Current</u>	
<u>NT\$</u>	
Foreign Bonds Investments	<u>\$ 156,843</u>
<u>US\$</u>	
Foreign Bonds Investments	<u>\$ 5,270</u>
<u>Non-current</u>	
<u>NT\$</u>	
Foreign Bonds Investments	<u>\$ 394,240</u>
<u>US\$</u>	
Foreign Bonds Investments	<u>\$ 13,247</u>

**11. ACCOUNTS RECEIVABLE**

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
<u>NT\$</u>		
<u>Accounts Receivable</u>		
Total Carrying Amount at		
Amortized Cost	\$676,344	\$425,415
Less: Loss Allowance	( 5,606 )	( 13,667 )
	<u>\$670,738</u>	<u>\$411,748</u>
<u>US\$</u>		
<u>Accounts Receivable</u>		
Total Carrying Amount at		
Amortized Cost	\$ 22,019	\$ 14,295
Less: Loss Allowance	( 182 )	( 459 )
	<u>\$ 21,837</u>	<u>\$ 13,836</u>

2018

The payment term granted to customers is 30 days to 90 days according to the factors of customers' financial conditions and historical payment records. In addition, when it is considered necessary, customers are requested to make pre-payments in order to reduce the risk of financial loss due to delay of payment.

The Company applies the simplified method of IFRS 9 to recognize the loss allowance for the accounts receivable based on the lifetime expected credit loss. The lifetime expected credit loss is calculated by using the historical loss ratio along with the consideration of the default records of the customer. The Company determines expected credit loss ratio by the factors including payment term, country of customer and the status of public listing or non public listing.

In the event there is an evidence indicating that the customer is under severe financial difficulty and the Company cannot reasonably estimate the recoverable amounts, the Company writes off relevant accounts receivable. However, the Company continues to engage in enforcement activity to attempt to recover the receivables which are due. Where recoveries are made, the recoverable amounts are recognized in profit or loss.

The aging of receivables was as follows:

	<u>December 31, 2018</u>
<u>NT\$</u>	
0-60 Days	\$ 445,994
61-120 Days	179,539
More Than and Including 121 Days	<u>50,811</u>
TOTAL	<u>\$ 676,344</u>
<u>US\$</u>	
0-60 Days	\$ 14,520
61-120 Days	5,845
More Than and Including 121 Days	<u>1,654</u>
TOTAL	<u>\$ 22,019</u>

Movements of the loss allowance for accounts receivable was as follows:

	<u>2018</u>
<u>NT\$</u>	
Balance at January 1,2018 (IAS 39)	\$ 13,667
Adjustments of Restrospective Application of IFRS 9	( <u>8,211</u> )
Balance at January 1,2018 (IFRS 9)	5,456
Less:Expected Credit Losses Currently Reversed	( 24 )
Foreign Exchange Translation Gains and Losses	<u>174</u>
Balance at December 31,2018	<u>\$ 5,606</u>
<u>US\$</u>	
Balance at January 1,2018 (IAS 39)	\$ 459
Adjustments of Retrospective Application of IFRS 9	( <u>276</u> )
Balance at January 1,2018 (IFRS 9)	183
Less:Expected Credit Losses Currently Reversed	( <u>1</u> )
Balance at December 31,2018	<u>\$ 182</u>

For year ended December 31, 2018, the decrease of loss allowance was due to the variations of accounts receivable of the customer group and company type.

2017

The payment term granted to customers was 30 to 90 days. No interest was charged on accounts receivable. In determining the recoverability of accounts receivable, the Company considered the aging of receivables, past default experience with the counterparties, and an analysis of their respective current financial positions to determine the irrecoverable amounts.

For the accounts receivable balances that were past due at the end of the reporting period, the Company did not recognize an allowance for impairment loss, because there was not a significant change in credit quality and the amounts were still considered recoverable. The Company did not hold any collateral over these balances.

The aging of receivables was as follows:

	<u>December 31, 2017</u>
<u>NT\$</u>	
0-60 Days	\$ 312,519
61-120 Days	100,448
More Than and Including 121 Days	<u>12,448</u>
TOTAL	<u>\$ 425,415</u>
<u>US\$</u>	
0-60 Days	\$ 10,502
61-120 Days	3,375
More Than and Including 121 Days	<u>418</u>
TOTAL	<u>\$ 14,295</u>

The aging of receivables that were past due but not impaired was as follows:

	<u>December 31, 2017</u>
<u>NT\$</u>	
1-60 Days	\$ 10,844
61-120 Days	10,833
More Than and Including 121 Days	<u>7,200</u>
TOTAL	<u>\$ 28,877</u>
<u>US\$</u>	
1-60 Days	\$ 364
61-120 Days	364
More Than and Including 121 Days	<u>242</u>
TOTAL	<u>\$ 970</u>

The above aging schedules were based on the number of past the due date.

Movements of the allowance for doubtful accounts receivable were as follows:

	<u>Group Assessment Impairment Loss</u>
<u>NT\$</u>	
Balance at January 1, 2017	\$ 15,405
Less: Impairment Losses Reversed	( 561 )
Foreign Exchange Translation Gains and Losses	( 1,177 )
Balance at December 31, 2017	<u>\$ 13,667</u>
<u>US\$</u>	
Balance at January 1, 2017	\$ 477
Less: Impairment Losses Reversed	( 18 )
Balance at December 31, 2017	<u>\$ 459</u>

## 12. INVENTORIES

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
<u>NT\$</u>		
Finished Products	\$ 7,770	\$ 23,772
Work in Progress	267,433	29,349
Raw Materials	<u>6,075</u>	<u>7,395</u>
	<u>\$281,278</u>	<u>\$ 60,516</u>
<u>US\$</u>		
Finished Products	\$ 253	\$ 799
Work in Progress	8,707	986
Raw Materials	<u>198</u>	<u>248</u>
	<u>\$ 9,158</u>	<u>\$ 2,033</u>

The cost of chip inventories recognized as cost of goods sold for the years ended December 31, 2018 and 2017 were NT\$1,561,849 thousand (US\$51,804 thousand) and NT\$2,582,617 thousand (US\$84,865 thousand), respectively.

The cost of goods sold included inventory write-downs of NT\$18,627 thousand (US\$618 thousand) for the year ended December 31, 2018.

The cost of goods sold for the year ended December 31, 2017 included reversals of inventory write-downs of NT\$18,398 (US\$605 thousand). Previous write-downs were reversed as a result of selling depreciated inventories.

## 13. SUBSIDIARIES

### a. Subsidiaries Included in the Consolidated Financial Statements

Investor	Subsidiary	Nature of Business	Percentage of Ownership (%)		Description
			2018 December 31	2017 December 31	
The Company	Alchip Technologies, Limited (registered in Hong Kong) (referred to as "Alchip HK")	Investments	100%	100%	—
	AlChip Technologies, Inc. (registered in the U.S.A.) (referred to as "Alchip USA")	Sales of ASIC and SOC.	100%	100%	—
	Alchip Technologies, KK (registered in Japan) (referred to as "Alchip KK")	Sales of ASIC and SOC.	100%	100%	—
	Alchip Technologies, Inc. (registered in Taiwan) ("Al-chip TW")	Provide ASIC and SOC services.	100%	100%	—
	Alchip Investment, Inc. (registered in the British Virgin Islands) (referred to as "Alchip BVI")	Investments	100%	100%	—
Alchip HK	Alchip Technologies (Shanghai) (registered in China) (referred to as "Alchip Shanghai")	Research and development, design, and sales of ASIC and SOC and rendering of related services.	100%	100%	—
	Alchip Technologies (Wuxi) (registered in China) (referred to as "Alchip Wuxi")	Research and development and design of ASIC and SOC and rendering of related services.	100%	100%	—
	Alchip Technologies (Hefei) (registered in China) (referred to as "Alchip Hefei")	Research and development and design of ASIC and SOC and rendering of related services.	100%	100%	—
	Alchip Technologies Jinan (registered in China) (referred to as "Alchip Jinan")	Research and development and design of ASIC and SOC and rendering of related services.	100%	-	Established in April 2018.

### b. Subsidiaries excluded from the consolidated financial statements: None.

## 14. PROPERTY, PLANTS AND EQUIPMENT

	Machinery Equipment	Computer Equipment	Office Equipment	Leasehold Improvements	Transportation Equipment	Total
<u>NT\$</u>						
<u>Cost</u>						
BALANCE, JANUARY 1, 2017	\$ 1,625,607	\$ 109,658	\$ 9,095	\$ 32,722	\$ 3,012	\$ 1,780,094
Addition	412,207	27,666	7,159	14,492	4,068	465,592
Disposals	( 58,950)	( 2,483)	( 159)	( 12,281)	-	( 73,873)
Effect of Foreign Currency Exchange Differences	( 135,463)	( 8,724)	( 837)	( 2,671)	( 322)	( 148,017)
BALANCE, DECEMBER 31, 2017	<u>\$ 1,843,401</u>	<u>\$ 126,117</u>	<u>\$ 15,258</u>	<u>\$ 32,262</u>	<u>\$ 6,758</u>	<u>\$ 2,023,796</u>
<u>Accumulated Depreciation</u>						
BALANCE, JANUARY 1, 2017	(\$ 1,450,400)	(\$ 74,205)	(\$ 5,435)	(\$ 32,270)	(\$ 808)	(\$ 1,563,118)
Depreciation Expenses	( 377,904)	( 12,310)	( 1,901)	( 2,153)	( 573)	( 394,841)
Disposals	58,950	2,396	138	12,281	-	73,765
Effect of Foreign Currency Exchange Differences	121,175	5,662	448	2,364	75	129,724
BALANCE, DECEMBER 31, 2017	<u>(\$ 1,648,179)</u>	<u>(\$ 78,457)</u>	<u>(\$ 6,750)</u>	<u>(\$ 19,778)</u>	<u>(\$ 1,306)</u>	<u>(\$ 1,754,470)</u>
Carrying Amounts at December 31, 2017	<u>\$ 195,222</u>	<u>\$ 47,660</u>	<u>\$ 8,508</u>	<u>\$ 12,484</u>	<u>\$ 5,452</u>	<u>\$ 269,326</u>
<u>Cost</u>						
BALANCE, JANUARY 1, 2018	\$ 1,843,401	\$ 126,117	\$ 15,258	\$ 32,262	\$ 6,758	\$ 2,023,796
Addition	660,282	13,507	2,110	10,110	-	686,009
Disposals	( 160,489)	( 4,383)	( 171)	( 6,737)	-	( 171,780)
Effect of Foreign Currency Exchange Differences	68,539	6,903	602	1,099	217	77,360
BALANCE, DECEMBER 31, 2018	<u>\$ 2,411,733</u>	<u>\$ 142,144</u>	<u>\$ 17,799</u>	<u>\$ 36,734</u>	<u>\$ 6,975</u>	<u>\$ 2,615,385</u>
<u>Accumulated Depreciation</u>						
BALANCE, JANUARY 1, 2018	(\$ 1,648,179)	(\$ 78,457)	(\$ 6,750)	(\$ 19,778)	(\$ 1,306)	(\$ 1,754,470)
Depreciation Expenses	( 620,878)	( 16,619)	( 2,609)	( 6,083)	( 1,232)	( 647,421)
Disposals	160,489	3,914	142	6,737	-	171,282
Effect of Foreign Currency Exchange Differences	( 61,534)	( 5,438)	( 281)	( 622)	( 65)	( 67,940)
BALANCE, DECEMBER 31, 2018	<u>(\$ 2,170,102)</u>	<u>(\$ 96,600)</u>	<u>(\$ 9,498)</u>	<u>(\$ 19,746)</u>	<u>(\$ 2,603)</u>	<u>(\$ 2,298,549)</u>
Carrying Amounts onat December 31, 2018	<u>\$ 241,631</u>	<u>\$ 45,544</u>	<u>\$ 8,301</u>	<u>\$ 16,988</u>	<u>\$ 4,372</u>	<u>\$ 316,836</u>

	Machinery Equipment	Computer Equipment	Office Equipment	Leasehold Improvements	Transportation Equipment	Total
<u>US\$</u>						
<u>Cost</u>						
BALANCE, JANUARY 1, 2017	\$ 50,334	\$ 3,493	\$ 284	\$ 1,011	\$ 94	\$ 55,216
Addition	13,545	909	235	476	134	15,299
Disposals	( 1,937 )	( 82 )	( 5 )	( 404 )	-	( 2,428 )
Effect of Foreign Currency Exchange Differences	-	12	1	-	-	13
BALANCE, DECEMBER 31, 2017	<u>\$ 61,942</u>	<u>\$ 4,332</u>	<u>\$ 515</u>	<u>\$ 1,083</u>	<u>\$ 228</u>	<u>\$ 68,100</u>
<u>Accumulated Depreciation</u>						
BALANCE, JANUARY 1, 2017	( \$ 44,901 )	( \$ 2,392 )	( \$ 171 )	( \$ 997 )	( \$ 27 )	( \$ 48,488 )
Depreciation Expenses	( 12,417 )	( 405 )	( 62 )	( 71 )	( 19 )	( 12,974 )
Disposals	1,937	79	5	404	-	2,425
Effect of Foreign Currency Exchange Differences	-	( 12 )	( 1 )	-	-	( 13 )
BALANCE, DECEMBER 31, 2017	<u>( \$ 55,381 )</u>	<u>( \$ 2,730 )</u>	<u>( \$ 229 )</u>	<u>( \$ 664 )</u>	<u>( \$ 46 )</u>	<u>( \$ 59,050 )</u>
Carrying Amounts at December 31, 2017	<u>\$ 6,561</u>	<u>\$ 1,602</u>	<u>\$ 286</u>	<u>\$ 419</u>	<u>\$ 182</u>	<u>\$ 9,050</u>
<u>Cost</u>						
BALANCE, JANUARY 1, 2018	\$ 61,942	\$ 4,332	\$ 515	\$ 1,083	\$ 228	\$ 68,100
Addition	21,901	448	70	335	-	22,754
Disposals	( 5,323 )	( 145 )	( 6 )	( 223 )	-	( 5,697 )
Effect of Foreign Currency Exchange Differences	-	( 8 )	-	1	( 1 )	( 8 )
BALANCE, DECEMBER 31, 2018	<u>\$ 78,520</u>	<u>\$ 4,627</u>	<u>\$ 579</u>	<u>\$ 1,196</u>	<u>\$ 227</u>	<u>\$ 85,149</u>
<u>Accumulated Depreciation</u>						
BALANCE, JANUARY 1, 2018	( \$ 55,381 )	( \$ 2,730 )	( \$ 229 )	( \$ 664 )	( \$ 46 )	( \$ 59,050 )
Depreciation Expenses	( 20,593 )	( 551 )	( 87 )	( 202 )	( 41 )	( 21,474 )
Disposals	5,323	130	5	223	-	5,681
Effect of Foreign Currency Exchange Differences	( 1 )	6	2	-	2	9
BALANCE, DECEMBER 31, 2018	<u>( \$ 70,652 )</u>	<u>( \$ 3,145 )</u>	<u>( \$ 309 )</u>	<u>( \$ 643 )</u>	<u>( \$ 85 )</u>	<u>( \$ 74,834 )</u>
Carrying Amounts at December 31, 2018	<u>\$ 7,868</u>	<u>\$ 1,482</u>	<u>\$ 270</u>	<u>\$ 553</u>	<u>\$ 142</u>	<u>\$ 10,315</u>

The above items of property, plants, and equipment are depreciated on a straight-line basis over the estimated useful lives as follows:

Machinery Equipment	1-5 Years
Computer Equipment	3-5 Years
Office Equipment	3-5 Years
Leasehold Improvements	3-5 Years
Transportation Equipment	5 Years

## 15. INTANGIBLE ASSETS

	Silicon Intellectual Property (SIP)	Software Cost	Total
<u>NT\$</u>			
<u>Cost</u>			
BALANCE, JANUARY 1, 2017	\$ 712,227	\$ 13,751	\$ 725,978
Additions	84,406	638	85,044
Effect of Foreign Currency Exchange Differences	( 50,906 )	( 1,076 )	( 51,982 )
BALANCE, DECEMBER 31, 2017	<u>\$ 745,727</u>	<u>\$ 13,313</u>	<u>\$ 759,040</u>
	Silicon Intellectual	Software Cost	Total

	Property (SIP)		
<u>Accumulated Amortization</u>			
BALANCE, JANUARY 1, 2017	( \$ 595,635 )	( \$ 13,285 )	( \$ 608,920 )
Amortization Expense	( 105,855 )	( 487 )	( 106,342 )
Effect of Foreign Currency			
Exchange Differences	<u>42,377</u>	<u>1,037</u>	<u>43,414</u>
BALANCE, DECEMBER 31, 2017	<u>( \$ 659,113 )</u>	<u>( \$ 12,735 )</u>	<u>( \$ 671,848 )</u>
Carrying Amounts at December 31, 2017	<u>\$ 86,614</u>	<u>\$ 578</u>	<u>\$ 87,192</u>
<u>Cost</u>			
BALANCE, JANUARY 1, 2018	\$ 745,727	\$ 13,313	\$ 759,040
Additions	193,293	1,046	194,339
Effect of Foreign Currency			
Exchange Differences	<u>20,132</u>	<u>447</u>	<u>20,579</u>
BALANCE, DECEMBER 31, 2018	<u>\$ 959,152</u>	<u>\$ 14,806</u>	<u>\$ 973,958</u>
<u>Accumulated Amortization</u>			
BALANCE, JANUARY 1, 2018	( \$ 659,113 )	( \$ 12,735 )	( \$ 671,848 )
Amortization Expense	( 138,144 )	( 472 )	( 138,616 )
Effect of Foreign Currency			
Exchange Differences	<u>( 16,318 )</u>	<u>( 417 )</u>	<u>( 16,735 )</u>
BALANCE, DECEMBER 31, 2018	<u>( \$ 813,575 )</u>	<u>( \$ 13,624 )</u>	<u>( \$ 827,199 )</u>
Carrying Amounts at December 31, 2018	<u>\$ 145,577</u>	<u>\$ 1,182</u>	<u>\$ 146,759</u>
<u>US\$</u>			
<u>Cost</u>			
BALANCE, JANUARY 1, 2017	\$ 22,044	\$ 425	\$ 22,469
Additions	<u>2,774</u>	<u>21</u>	<u>2,795</u>
BALANCE, DECEMBER 31, 2017	<u>\$ 24,818</u>	<u>\$ 446</u>	<u>\$ 25,264</u>
<u>Accumulated Amortization</u>			
BALANCE, JANUARY 1, 2017	( \$ 18,427 )	( \$ 412 )	( \$ 18,839 )
Amortization Expense	<u>( 3,479 )</u>	<u>( 16 )</u>	<u>( 3,495 )</u>
BALANCE, DECEMBER 31, 2017	<u>( \$ 21,906 )</u>	<u>( \$ 428 )</u>	<u>( \$ 22,334 )</u>
Carrying Amounts at December 31, 2017	<u>\$ 2,912</u>	<u>\$ 18</u>	<u>\$ 2,930</u>
<u>Cost</u>			
BALANCE, JANUARY 1, 2018	\$ 24,818	\$ 446	\$ 25,264
Additions	<u>6,411</u>	<u>35</u>	<u>6,446</u>
BALANCE, DECEMBER 31, 2018	<u>\$ 31,229</u>	<u>\$ 481</u>	<u>\$ 31,710</u>

	Silicon Intellectual Property (SIP)	Software Cost	Total
<u>Accumulated Amortization</u>			
BALANCE, JANUARY 1, 2018	( \$ 21,906 )	( \$ 428 )	( \$ 22,334 )
Amortization Expense	( 4,582 )	( 16 )	( 4,598 )
BALANCE, DECEMBER 31, 2018	<u>( \$ 26,488 )</u>	<u>( \$ 444 )</u>	<u>( \$ 26,932 )</u>
Carrying Amounts at December 31, 2018	<u>\$ 4,741</u>	<u>\$ 37</u>	<u>\$ 4,778</u>

The above items of intangible assets were depreciated on a straight-line basis over the estimated useful lives as follows:

Silicon Intellectual Property (SIP)	1-3 Years
Software Cost	3-5 Years

## 16. PREPAYMENTS

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
<u>NT\$</u>		
Prepayment for Electronic Design Automation (EDA) Tools	\$ 65,348	\$ 45,530
Prepayment for SIP	41,925	51,249
Prepayment for Raw Materials	7,703	2,273
Others	<u>9,938</u>	<u>13,052</u>
	<u>\$124,914</u>	<u>\$112,104</u>
<u>US\$</u>		
Prepayment for Electronic Design Automation (EDA) Tools	\$ 2,128	\$ 1,530
Prepayment for SIP	1,365	1,722
Prepayment for Raw Materials	251	76
Others	<u>323</u>	<u>439</u>
	<u>\$ 4,067</u>	<u>\$ 3,767</u>

## 17. SHORT TERM BORROWING

Loans were financed from Morgan Stanley Asia International Limited, Singapore Branch (Morgan Stanly) with the Open Fed Fund+110bps borrowing rate (for the first half of 2018 and year of 2017, the interest rate range was between 2.61% to 2.98% and 1.42% to 2.70%), respectively. The Company has repaid all loans in June 2018.



## 18. OTHER PAYABLES

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
<u>NT\$</u>		
Payables for Salaries and Bonuses	\$108,824	\$137,419
Payables for SIP	31,964	8,901
Payables for Technical Services	27,883	818
Payables for Professional Services	7,434	8,202
Payables for Sales Tax	3,756	11,802
Payables for Purchase of Equipment	206	7,487
Others	<u>24,639</u>	<u>19,288</u>
	<u>\$204,706</u>	<u>\$193,917</u>
<u>US\$</u>		
Payables for Salaries and Bonuses	\$ 3,543	\$ 4,618
Payables for SIP	1,041	299
Payables for Technical Services	908	27
Payables for Sales Tax	122	397
Payables for Professional Services	242	276
Payables for Purchase of Equipment	7	252
Others	<u>802</u>	<u>647</u>
	<u>\$ 6,665</u>	<u>\$ 6,516</u>

## 19. RETIREMENT BENEFITS PLAN

### Defined Contribution Plans

Alchip TW and the Alchip Taiwan Branch adopted a pension plan under the Labor Pension Act (the LPA), which is a state-managed defined contribution plan. Under the LPA, an entity makes monthly contributions to employees' individual pension accounts at 6% of monthly salaries and wages.

Subsidiaries in the People's Republic of China and Japan take part in the defined contribution pension plans operated by the local governments, to which the subsidiaries make monthly contributions.

## 20. EQUITY

### a. Share Capital

#### Ordinary Shares

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
Number of Shares Authorized (in thousands)	<u>100,000</u>	<u>100,000</u>
Shares Authorized (NT\$)	<u>\$ 1,000,000</u>	<u>\$ 1,000,000</u>
Number of Shares Issued and Fully Paid (in thousands)	<u>59,773</u>	<u>61,001</u>
Shares Issued		
NT\$	<u>\$ 597,731</u>	<u>\$ 610,010</u>
US\$	<u>\$ 18,761</u>	<u>\$ 19,129</u>

Fully paid ordinary shares, which have a par value per share of NT\$10, carry one vote per share and carry one right to dividends. The change of share capital was mainly due to the execution of employee stock option and cancellation of treasury stocks.

b. Retained Earnings and Dividend Policy

According to the dividend policy as set forth in the Articles of Incorporation, the Company's annual net income after tax shall offset its losses in previous years, then set aside a special reserve in accordance with the Applicable Public Company Rules or as requested by the authorities in charge, and then any remaining profit together with any undistributed retained earnings shall be used by the Company's board of directors as the basis for proposing a distribution plan, which should be resolved in the shareholders' meeting for distribution of dividends to shareholders. For the policy on the distribution of employees' compensation and directors' remuneration specified in the Articles of Incorporation, refer to Note 24-(5) Employees' Compensation and Directors' Remuneration.

The Company's Articles of Incorporation also stipulate a dividend policy that distribution of retained earnings may proceed by way of cash or share dividends, but the cash dividend to be distributed shall be no lower than 10% of the aggregate dividend distributed to shareholders and no more than 100% of the aggregate dividend distributed to shareholders.

The appropriation of earnings for 2017 was approved through the resolution of the ordinary shareholders' meeting on May 30, 2018

	2017			
	Appropriation of Earnings (In Thousands)		Dividends Per Share (In Dollars)	
	US\$	NT\$	US\$	NT\$
Cash Dividends	\$ 2,135	\$ 64,008	\$ 0.035	\$ 1.049

The resolution of the shareholders' meeting on June 24, 2017, that deficit for the year ended December 31, 2016 is offset and the residual of the retained earnings are not to be appropriated.

The appropriation of earnings for 2018 is proposed by Company's board of directors on March 15, 2019.

	2018			
	Appropriation of Earnings (In Thousands)		Dividends Per Share (In Dollars)	
	US\$	NT\$	US\$	NT\$
Cash Dividends	\$ 2,915	\$ 90,058	\$ 0.049	\$ 1.506

The appropriation of earnings for 2018 are subject to the resolution of the shareholders' meeting to be held on June 21, 2019.

c. Special Reserve

Under Rule No. 1010012865 and Rule No. 1010047490 issued by the FSC and the directive titled “Questions and Answers for Special Reserves Appropriated Following Adoption of IFRSs”, the Company should appropriate or reverse to a special reserve.

The increase in retained earnings that resulted from all IFRSs adjustments was NT\$63,380 thousand (US\$3,221 thousand). Special reserve from cumulative translation adjustments at the first-time adoption of IFRSs was NT\$67,693 thousand (around US\$2,799 thousand). As of December 31, 2018, the amounts of the special reserve remained unchanged.

d. Treasury Shares

To protect the company’s credit and shareholders’ rights and benefits, , on September 11, 2018, the Board of Directors resolved to repurchase 2,000 thousand shares from the stock exchange at a price of NT\$ 64.26 to NT\$ 167.94 per share for cancellation from September 12, 2018 to November 10, 2018.

As of December 31, 2018, the Company has repurchased 1,925 thousand shares of treasury stock, at a total amount of NT\$157,884 thousand (US\$5,124 thousand), which have been canceled.

## 21. SHARE BASED PAYMENT AGREEMENTS

### Employee Share Option Plan of the Company and Subsidiaries

According to the Company’s Employee Share Option Plan, each option entitles the holder to subscribe for 1,000 ordinary shares of the Company. The qualified employee includes employees of the Company and its subsidiaries satisfying specific requirements. The option granted are valid for 10 years and exercisable at 50% after second anniversary from the grant date, and one-fourth thereof be received annually for subsequent years. The option were granted at an exercise price equal to the closing price of the Company’s ordinary shares listed on the Taiwan Stock Exchange on the grant date. For any subsequent changes in the Company’s capital surplus, the exercise price is adjusted accordingly.

Information on employee share options as follows:

Employee Share Option	2018		2017	
	Number of Options	Weighted-average Exercise Price (US\$)	Number of Options	Weighted-average Exercise Price (US\$)
Balance at January 1	4,985,473	\$ 1.59	3,886,111	\$ 1.50
Options Granted	1,874,000	3.60	1,630,000	2.03
Options Exercised	( 697,060)	1.97	( 298,223)	2.19
Options Expired	( 199,000)	1.84	( 232,415)	1.99
Balance at December 31	<u>5,963,413</u>	2.18	<u>4,985,473</u>	1.59
Options Exercisable, End of Year	<u>1,386,413</u>	1.35	<u>799,473</u>	2.25
Weighted-Average Fair Value of Options granted(US\$)	<u>\$ 1.84</u>		<u>\$ 1.00</u>	

December 31, 2018		December 31, 2017	
Exercise Price (US\$)	Weighted-average Remaining Contractual Life (Years)	Exercise Price (US\$)	Weighted-average Remaining Contractual Life (Years)
\$ 0.80	7.87	\$0.80	8.87
1.19	7.18	1.19	8.18
1.34	8.19	1.34	9.19
1.81	6.32	1.81	7.32
2.51	0.91	2.51	1.21
2.60	8.93	2.60	9.93
2.82	8.92	2.82	9.92
2.88	9.73		
3.31	9.11		
3.36	9.02		
4.02	9.62		
4.11	9.25		
4.28	9.30		

Options granted in 2018 and 2017 were priced by Black-Scholes pricing model and the inputs to the model on each grant-date were as follows:

	September 20, 2018	August 10, 2018	April 18, 2018	March 30, 2018	February 7, 2018
Grant-date Share Price(NT\$)	88.80	123.50	125.50	119.50	96.90
Exercise Price(NT\$)	88.80	123.50	125.50	119.50	96.90
Expected Volatility	54.28%	53.47%	53.39%	53.41%	52.68%
Expected Life(years)	6-7	6-7	6-7	6-7	6-7
Expected Dividend Yield	-	-	-	-	-
Risk-Free Interest Rate	0.77%~0.80%	0.75%~0.77%	0.79%~0.85%	0.78%~0.84%	0.77%~0.85%

	January 5, 2018	December 5, 2017	November 28, 2017	March 10, 2017
Grant-date Share Price(NT\$)	99.20	78.00	84.50	41.70
Exercise Price(NT\$)	99.20	78.00	84.50	41.70
Expected Volatility	51.92%	51.73%	51.78%	49.65%
Expected Life(years)	6-7	6-7	6-7	6-7
Expected Dividend Yield	-	-	-	-
Risk-Free Interest Rate	0.75%~0.82%	0.75%~0.81%	0.75%~0.82%	1.09%~1.16%

Compensation cost recognized was NT\$47,675 thousand (US\$1,581 thousand) and NT\$19,973 thousand (US\$656 thousand) for the years ended December 31, 2018 and 2017, respectively.

## 22. GOVERNMENT GRANTS

The Company's subsidiary, Alchip Technologies (Hefei), signed a financial support fund agreement entitled "Advanced Soc Chip Design and Service Platform" with Hefei High-tech Industrial Development Area Merchants (the "Merchants") in April 2017. The period of the agreement is from January 2017 to December 2018. According to the agreement, the subsidiary shall receive the grants prior to the assessment. The grants (with additional interest) will be repayable on demand if there is any breach of the agreement. The performance indicators set out in the agreement are as follows:

### a. Investment Projects

- 1) Investments in fixed assets shall amount to RMB 20 million.
- 2) R&D investments shall amount to RMB 60 million during the period.

### b. Innovation Output

The cumulative number of patent applications shall not be less than 6 for the year ended December 31, 2018.

The grant amounting to NT\$44,813 thousand (US\$1,459 thousand) was received and recognized as deferred revenue for the year ended December 31, 2018 due to the Merchant having not yet performed the review of application.

## 23. REVENUE

### a. Contract Balance

The change in the contract liability balances was mainly due to the timing difference between the satisfaction of performance obligation and the customer's payment. The

Company recognized NT\$14,075 thousand (US\$471 thousand) as revenue from the beginning of contract liability for the year ended of December 31, 2018.

b. Revenue from Contracts with Customers

	2018		2017	
	NT\$	US\$	US\$	NT\$
<u>Product</u>				
ASIC and Chip				
Production	\$ 3,302,059	\$ 109,525	\$ 4,208,346	\$ 138,287
NRE	30,720	1,019	51,887	1,705
Others	117,899	3,910	5,410	177
	<u>\$ 3,450,678</u>	<u>\$ 114,454</u>	<u>\$ 4,265,643</u>	<u>\$ 140,169</u>
	2018			
	NT\$	US\$		
<u>Geography</u>				
China	\$ 1,577,129	\$ 52,311		
Japan	1,320,636	43,804		
Taiwan	211,552	7,017		
Europe	183,574	6,089		
Others	157,787	5,233		
	<u>\$ 3,450,678</u>	<u>\$ 114,454</u>		
<u>Application Type</u>				
Niche Market	\$ 1,620,178	\$ 53,739		
Communication	1,302,406	43,199		
Consumer	528,094	17,516		
	<u>\$ 3,450,678</u>	<u>\$ 114,454</u>		
<u>Resolution</u>				
7- nanometer	\$ 595,533	\$ 19,753		
12- nanometer	409,876	13,595		
16- nanometer	726,741	24,105		
28- nanometer	1,051,176	34,866		
40- nanometer	310,294	10,292		
Above 55- nanometer	240,740	7,985		
Others	116,318	3,858		
	<u>\$ 3,450,678</u>	<u>\$ 114,454</u>		

## 24. NET PROFIT(LOSS)

Net profit (loss) from continuing operations included the following items

### a. Other Income

	2018	2017
<u>NT\$</u>		
Interest Income	\$ 46,286	\$ 37,201
Government Grants	14,575	-
Rental Income	\$ 279	\$ 1,719
Others	<u>2,447</u>	<u>2,340</u>
	<u>\$ 63,587</u>	<u>\$ 41,260</u>
<u>US\$</u>		
Interest Income	\$ 1,535	\$ 1,222
Government Grants	483	-
Rental Income	9	56
Others	<u>82</u>	<u>78</u>
	<u>\$ 2,109</u>	<u>\$ 1,356</u>

### b. Other Gains and Losses

	2018	2017
<u>NT\$</u>		
Net Foreign Exchange Gains (losses)	(\$ 3,694)	\$ 7,312
Gain (Loss) on Disposal of Financial Assets		
Available-for-sale Financial Assets	-	( 7,515)
Investment In Debt Instrument at FVTOCI	( 2,072)	-
Loss on Disposal of Equipment	( 491)	( 105)
Others	<u>( 287)</u>	<u>( 203)</u>
	<u>(\$ 6,544)</u>	<u>(\$ 511)</u>
<u>US\$</u>		
Net Foreign Exchange Gains (losses)	(\$ 122)	\$ 240
Gain(Loss)on Disposal of Financial Assets		
Available-for-sale Financial Assets	-	( 247)
Invetment In Debt Instrument at FVTOCI	( 69)	-
Loss on Disposal of Equipment	( 16)	( 3)
Others	<u>( 10)</u>	<u>( 7)</u>
	<u>(\$ 217)</u>	<u>(\$ 17)</u>

c. Depreciation and Amortization

	<u>2018</u>	<u>2017</u>
<u>NT\$</u>		
Property, Plants, and Equipment	\$ 647,421	\$ 394,841
Intangible Assets	<u>138,616</u>	<u>106,342</u>
	<u>\$ 786,037</u>	<u>\$ 501,183</u>
An Analysis of Depreciation by Function		
OPERATING COSTS	\$ 618,403	\$ 376,303
Operating Expenses	<u>29,018</u>	<u>18,538</u>
	<u>\$ 647,421</u>	<u>\$ 394,841</u>
An Analysis of Amortization by Function		
OPERATING COSTS	\$ 138,189	\$ 105,889
Operating Expenses	<u>427</u>	<u>453</u>
	<u>\$ 138,616</u>	<u>\$ 106,342</u>
<u>US\$</u>		
Property, Plants, and Equipment	\$ 21,474	\$ 12,974
Intangible Assets	<u>4,598</u>	<u>3,495</u>
	<u>\$ 26,072</u>	<u>\$ 16,469</u>
An Analysis of Depreciation by Function		
OPERATING COSTS	\$ 20,512	\$ 12,365
Operating Expenses	<u>962</u>	<u>609</u>
	<u>\$ 21,474</u>	<u>\$ 12,974</u>
An Analysis of Amortization by Function		
OPERATING COSTS	\$ 4,584	\$ 3,480
Operating Expenses	<u>14</u>	<u>15</u>
	<u>\$ 4,598</u>	<u>\$ 3,495</u>

d. Employee Benefits Expense

	<u>2018</u>	<u>2017</u>
<u>NT\$</u>		
Post-employmentBenefit (Note 19)		
Defined Contribution Plans	\$ 42,170	\$ 33,264
Share-based Payments (Note 21)	47,675	19,973
Other Employee Benefits	<u>600,664</u>	<u>551,731</u>
	<u>\$ 690,509</u>	<u>\$ 604,968</u>



	2018	2017
An Analysis of Employee Benefits Expenses by Function		
OPERATING COSTS	\$ 10,923	\$ 12,517
Operating Expenses	<u>679,586</u>	<u>592,451</u>
	<u>\$ 690,509</u>	<u>\$ 604,968</u>
<u>US\$</u>		
Post-employment Benefit (Note 19)		
Defined Contribution Plans	\$ 1,399	\$ 1,093
Share-based Payments (Note 21)	1,581	656
Other Employee Benefits	<u>19,923</u>	<u>18,130</u>
	<u>\$ 22,903</u>	<u>\$ 19,879</u>
An Analysis of Employee Benefits Expenses by Function		
OPERATING COSTS	\$ 361	\$ 411
Operating Expenses	<u>22,542</u>	<u>19,468</u>
	<u>\$ 22,903</u>	<u>\$ 19,879</u>

e. Employees' Compensation and Remuneration of Directors

The Company accrued employees' compensation and remuneration of directors at the rates of no less than 1% and no higher than 2%, respectively, of net profit before income tax, employees' compensation, and remuneration of directors. The employees' compensation and remuneration of directors for 2018 and 2017 approved by the Company's Board of Directors were as follows:

	2018		
	Accrual Rate	Cash (US\$)	Cash (NT\$)
Employees' Compensation	8%	\$ 986	\$ 29,739
Remuneration of Directors	2%	<u>247</u>	<u>7,435</u>
		<u>\$ 1,233</u>	<u>\$ 37,174</u>
	2017		
		Cash (US\$)	Cash (NT\$)
Employees' Compensation		\$ 1,049	\$ 31,910
Remuneration of Directors		<u>262</u>	<u>7,977</u>
		<u>\$ 1,311</u>	<u>\$ 39,887</u>
Financial Statements Recognized Amount		<u>\$ 1,311</u>	<u>\$ 39,887</u>

If there is a change in the amounts after the annual consolidated financial statements are authorized for issue, the differences are recorded as a change in the accounting estimate.

Information on the employees' compensation and remuneration of directors resolved by the Company's Board of Directors is available at the Market Observation Post System website of the Taiwan Stock Exchange.

## 25. INCOME TAX

a. Major components of tax expenses recognized in profit or loss were as follows:

	2018		2017	
	US\$	NT\$	US\$	NT\$
Current Tax				
In Respect of the Current Year	\$ 2,803	\$ 84,495	\$ 1,422	\$ 43,261
Adjustments for Prior Years	<u>27</u>	<u>828</u>	<u>154</u>	<u>4,671</u>
	<u>2,830</u>	<u>85,323</u>	<u>1,576</u>	<u>47,932</u>
Deferred Tax				
In Respect of the Current Year	( 164)	( 4,951)	75	2,310
Tax Rate Change	( <u>97</u> )	( <u>2,924</u> )	<u>-</u>	<u>-</u>
	( <u>261</u> )	( <u>7,875</u> )	<u>75</u>	<u>2,310</u>
Income Tax Expense Recognized in Profit or Loss	<u>\$ 2,569</u>	<u>\$ 77,448</u>	<u>\$ 1,651</u>	<u>\$ 50,242</u>

A reconciliation of accounting profit and income tax expenses is as follows:

	2018		2017	
	US\$	NT\$	US\$	NT\$
INCOME BEFORE TAX	\$ 11,105	\$ 334,805	\$ 11,796	\$ 358,985
Income Tax Expense At the jurisdiction Rate	2,244	67,640	1,955	59,501
Nondeductible Tax Expenses	26	796	41	1,251
Unrecognized Tax Losses and Temporary Differences	369	11,108	( 499)	( 15,181)
Tax Rate Change	( 97)	( 2,924)	-	-
Adjustments for Prior Years' Taxes	<u>27</u>	<u>828</u>	<u>154</u>	<u>4,671</u>
Income Tax Expense Recognized in Profit or Loss	<u>\$ 2,569</u>	<u>\$ 77,448</u>	<u>\$ 1,651</u>	<u>\$ 50,242</u>

In 2017, the applicable corporate income tax rate used by the entities of the Company in ROC was 17%. However, the Income Tax Act in ROC was amended in 2018, and the corporate income tax rate was adjusted to 20% from 17%, and effective from year 2018. In addition, the rate of the corporate surtax applicable to the 2018 unappropriated earnings will be reduced from 10% to 5%. Alchip Shanghai was approved for preferential tax treatment in May 2015, a treatment that allows Alchip Shanghai to be exempt from corporate income tax for 2014 and 2015 and to be entitled to a preferential tax rate of 12.5% from 2016 to 2018. The applicable tax rate used by the Company's subsidiary located in Japan was approximately 37%.

b. Deferred Tax Assets

The movements of deferred tax assets were as follows:

Year Ended December 31, 2018

NT\$

Deferred Tax Assets	Opening Balance	Recognized in Profit or Loss	Exchange Differences	Closing Balance
Temporary Differences				
Unrealized Loss on Inventory	\$ 9,366	\$ 4,755	\$ 391	\$ 14,512
Unrealized Exchange Gain or Loss	<u>1,082</u>	<u>( 718)</u>	<u>21</u>	<u>385</u>
	10,448	4,037	412	14,897
Tax Losses	<u>5,907</u>	<u>13,640</u>	<u>445</u>	<u>19,992</u>
	<u>\$ 16,355</u>	<u>\$ 17,677</u>	<u>\$ 857</u>	<u>\$ 34,889</u>

Deferred Tax Liabilities	Opening Balance	Recognized in Profit or Loss	Exchange Differences	Closing Balance
Temporary Differences				
Intangible Assets	<u>\$ -</u>	<u>\$ 9,802</u>	<u>\$ 184</u>	<u>\$ 9,986</u>

US\$

Deferred Tax Assets	Opening Balance	Recognized in Profit or Loss	Exchange Differences	Closing Balance
Temporary Differences				
Unrealized Loss on Inventory	\$ 36	(\$ 23)	\$ -	\$ 13
Unrealized Exchange Gain or Loss	<u>316</u>	<u>156</u>	<u>-</u>	<u>472</u>
	352	133	-	485
Tax Losses	<u>198</u>	<u>453</u>	<u>-</u>	<u>651</u>
	<u>\$ 550</u>	<u>\$ 586</u>	<u>\$ -</u>	<u>\$ 1,136</u>

Deferred Tax Liabilities	Opening Balance	Recognized in Profit or Loss	Exchange Differences	Closing Balance
Temporary Differences				
Intangible Assets	\$ -	\$ 325	\$ -	\$ 325

Year Ended December,31,2017

NT\$

Deferred Tax Assets	Opening Balance	Recognized in Profit or Loss	Exchange Differences	Closing Balance
Temporary Differences				
Unrealized Loss on Inventory	\$ 13,465	(\$ 3,127)	(\$ 972)	\$ 9,366
Unrealized Exchange Gain or Loss	<u>306</u>	<u>817</u>	<u>(41)</u>	<u>1,082</u>
	13,771	( 2,310)	( 1,013)	10,448
Tax Losses	<u>6,401</u>	<u>-</u>	<u>(494)</u>	<u>5,907</u>
	<u>\$ 20,172</u>	<u>(\$ 2,310)</u>	<u>(\$ 1,507)</u>	<u>\$ 16,355</u>

US\$

Deferred Tax Assets	Opening Balance	Recognized in Profit or Loss	Exchange Differences	Closing Balance
Temporary Differences				
Unrealized Loss on Inventory	\$ 417	(\$ 101)	\$ -	\$ 316
Unrealized Exchange Gain or Loss	<u>10</u>	<u>26</u>	<u>-</u>	<u>36</u>
	427	( 75)	-	352
Tax Losses	<u>198</u>	<u>-</u>	<u>-</u>	<u>198</u>
	<u>\$ 625</u>	<u>(\$ 75)</u>	<u>\$ -</u>	<u>\$ 550</u>

c. Income Tax Assessments

Tax returns of Alchip Technologies Inc. and Alchip Taiwan Branch through 2016 have been assessed by the tax authorities, and there is no significant difference between the assessment results and the income tax returns filed.

**26. EARNINGS PER SHARE**

	Unit: US\$/NT\$ Per Share			
	2018		2017	
	US\$	NT\$	US\$	NT\$
Basic Earnings per Share	<u>\$ 0.14</u>	<u>\$ 4.22</u>	<u>\$ 0.17</u>	<u>\$ 5.08</u>
Diluted Earnings per Share	<u>\$ 0.13</u>	<u>\$ 4.03</u>	<u>\$ 0.16</u>	<u>\$ 4.92</u>

The information used for the computation of earnings per share is as follows:

	2018		2017	
	US\$	NT\$	US\$	NT\$
<u>Net Income</u>				
Profit for the Period				
Attributable to Owners of the Company	<u>\$ 8,536</u>	<u>\$ 257,357</u>	<u>\$ 10,145</u>	<u>\$ 308,743</u>
Earnings Used in the Computation of Basic and Diluted Earnings per Share	<u>\$ 8,536</u>	<u>\$ 257,357</u>	<u>\$ 10,145</u>	<u>\$ 308,743</u>

	Unit: Thousand Shares	
	2018	2017
<u>Number of Shares</u>		
Weighted Average Number of Ordinary Shares in Computation of Basic Earnings per Share	61,039	60,772
Effect of potentially dilutive ordinary shares:		
Employee Share Option	2,365	1,558
Employees' Compensation or Bonus Issue to Employees	<u>482</u>	<u>345</u>
Weighted Average Number of Ordinary Shares in Computation of Diluted Earnings per Share	<u>63,886</u>	<u>62,675</u>

Since the Company offered to settle compensation paid to employees in cash or shares, the Company assumed the entire amount of the compensation would be settled in shares and the resulting potential shares were included in the weighted average number of shares outstanding used in the computation of diluted earnings per share, as the effect is dilutive. Such dilutive effect of the potential shares was included in the computation of diluted earnings per share until the number of shares to be distributed to employees is resolved in the following year.

## 27. OPERATING LEASE ARRANGEMENTS

Operating lease relates to the lease of testing machines, offices, and parking lots with lease terms 1 to 5 years. Upon the termination of the term of lease, the Company has no bargain purchase option to acquire the leased items.

The future minimum lease payments of non-cancellable operating lease commitments were as follows:

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
<u>NT\$</u>		
Less Than 1 Year	\$ 42,371	\$ 46,312
1-5 Years	<u>104,527</u>	<u>20,028</u>
	<u>\$146,898</u>	<u>\$ 66,340</u>
<u>US\$</u>		
Less Than 1 Year	\$ 1,380	\$ 1,556
1-5 Years	<u>3,403</u>	<u>673</u>
	<u>\$ 4,783</u>	<u>\$ 2,229</u>

The lease payments recognized in profit or loss were as follows:

	<u>2018</u>		<u>2017</u>	
	<u>US\$</u>	<u>NT\$</u>	<u>US\$</u>	<u>NT\$</u>
Lease Payments	<u>\$ 1,918</u>	<u>\$ 57,827</u>	<u>\$ 1,765</u>	<u>\$ 53,712</u>

## 28. CAPITAL MANAGEMENT

The Company is a fabless application specific circuit provider and expects significant capital expenditure on the purchase of machinery equipment and SIP now and in the near future. Accordingly, the Company's objective is to maintain necessary operating capital, the availability of funds for research and development, the capacity to pay dividends, etc. Compliance with conservative policy, the Company prudently evaluates the policy of capital management on a continuous basis..

## 29. FINANCIAL INSTRUMENTS

### a. Fair Value of Financial Instruments that are not Measured at Fair Value

The Company considers that the book value of financial assets and liabilities that are not measured at fair value are close to fair value. Accordingly, the Company takes the book value of those financial assets and liabilities on the consolidated balance sheet as the basis for evaluating the fair value.

### b. Fair Value of Financial Instruments that are Measured at Fair Value on a Recurring Basis

#### 1) Fair Value Hierarchy

The Company's financial instruments measured at fair value are mainly available-for-sale financial assets. Based on the extent that fair value can be observed, the fair value measurements are grouped in Level 2.

2) Valuation Techniques and Inputs Applied for the Purpose of Measuring Level 2 Fair Value

<u>Financial Instruments</u>	<u>Valuation Techniques and Inputs</u>
Foreign Bonds Investment	Adjusted integration of quoted prices or settlement prices from stock exchange market participants for each corporate bond.

There was no transfer of fair value measurements between Level 1 and Level 2 for the year ended December 31, 2018 and 2017.

c. Categories of Financial Instrument

	<u>December 31, 2018</u>	<u>December 31, 2017</u>
<u>NT\$</u>		
<u>Financial Assets</u>		
Financial Assets at Amortized Cost (Note 3)	\$ 2,436,860	\$ -
Financial Assets at FVTOCI-Debt Instrument	339,698	-
Loans and Receivables (Note 1)	-	1,990,185
Available-for-sale Financial Assets	-	551,083
<u>Financial Liabilities</u>		
Amortized Cost (Note 2)	227,860	133,456
<u>US\$</u>		
<u>Financial Assets</u>		
Financial Assets at Amortized Cost (Note 3)	79,336	-
Financial Assets at FVTOCI-Debt Instrument	11,060	-
Loans and Receivables (Note 1)	-	66,875
Available-for-sale Financial Assets	-	18,517
<u>Financial Liabilities</u>		
Amortized Cost (Note 2)	7,419	4,484

Note 1: The balances included loans and receivables measured at amortized cost, which comprise cash and cash equivalents, accounts, and other receivables.

Note 2: The balances included the carrying amount of short-term loans, and accounts and other payables.

Note 3: The balances included financial assets measured at amortized cost, which comprise cash and cash equivalents, accounts, and other receivables.

#### d. Financial Risk Management Objectives and Policies

The Company's financial risk management objective is to manage market risk (including currency risk and interest rate risk), credit risk, and liquidity risk associated with operating activities in accordance with relevant guidelines and internal controls. The Company's finance department reports to the Board of Directors and audit committee, as necessary.

##### 1) Market Risk

The Company's activities exposed it primarily to the financial risks of changes in foreign currency exchange rates (see (1) below) and interest rates (see (2) below).

##### a) Exchange Rate Risk

The Company uses USD as the functional currency, and mainly possesses a small amount of NTD, JPY, and RMB, etc. for the payment of employee salaries and operating expenses of each subsidiary (branch); therefore, there is no material exchange rate fluctuation risk. Since the Company is listed for trading on the Taiwan Stock Exchange, it can be expected that in the future, when dividends are issued to domestic investors in NTD or when funds are raised domestically in NTD such that the amount needs to be exchanged to USD for use, there is an exchange rate risk in the exchange of TWD to USD, and the possible responsive measures adopted by the financial department of the Company are as follows:

- i. Maintaining an adequate level of foreign currency reserve based on predicted exchange rate to provide for subsidiaries' operating activities and to lessen the impact on adverse exchange fluctuations to the net income;
- ii. Continuously monitoring exchange rate fluctuations and maintaining close relationships with principal correspondent banks to provide management with sufficient information as a basis for managing exchange rate fluctuations;
- iii. Reducing the impact of adverse exchange rate fluctuations on the Group's net income by using natural hedging (i.e. a majority of sales and purchase transactions are denominated in USD) and by using foreign currency loans or forward exchange contracts when needed.

Refer to Note 31 for the carrying amounts of monetary assets and liabilities not denominated in functional currency at the end of the reporting period.



## Sensitivity Analysis

The Company was mainly exposed to RMB and USD exchange rate fluctuation.

The following table describes the sensitivity analysis of the Company when USD and JPY (functional currencies) appreciate/depreciate 5% relative to the exchange rate of relevant foreign currencies. 5% refers to the sensitivity ratio used internally by the Company for reporting the exchange rate risk to the key management level, and it also refers to the assessment of the management level on the reasonable and possible fluctuation range of the currency exchange rate. The sensitivity analysis only includes the foreign currency monetary items circulating externally, and its translation at the end of year is adjusted based on the exchange rate change of 5%. The integers shown in the following table refer to the increased amount of the net income before tax when USD and JPY (functional currencies) depreciates 5% relative to other relevant currencies. When USD and JPY appreciate 5% relative to relevant currencies, the impact on the net income before tax is the same amount but in a negative value.

Unit: In Thousands of U.S. Dollars				
	Impact of RMB		Impact of USD	
	2018	2017	2018	2017
Profit/Loss	\$ 37	\$ 138	\$ 100	\$ 29

### b) Interest Rate Risk

The Company was exposed to interest rate risk because entities in the Company borrowed funds at floating rate. The carrying amounts of the Company's financial assets and liabilities with exposure to interest rates at the end of reporting period are as follows:

	December 31, 2018	December 31, 2017
<u>NT\$</u>		
Fair Value Interest Rate Risk		
— Financial Assets	\$ 1,340,862	\$ 610,906
Cash Flow Interest Rate Risk		
— Financial Assets	716,405	1,485,842
— Financial Liabilities	-	42,074
<u>US\$</u>		
Fair Value Interest Rate Risk		
— Financial Assets	43,655	20,527

Cash Flow Interest Rate Risk		
— Financial Assets	23,324	49,927
— Financial Liabilities	-	1,414

The Company was also exposed to cash flow interest rate risk in relation to variable-rate financial institutions borrowings. The Company's cash flow interest rate risk was mainly concentrated in the fluctuation of the Open Fed Fund rate.

#### Sensitivity Analysis

The sensitivity analyses below were determined based on the Company's exposure to interest rates for non-derivative instruments at the end of the reporting period. For floating rate liabilities, the analysis was prepared assuming the amount of the liability outstanding at the end of the reporting period was outstanding for the whole year. A 25 basis point increase or decrease was used when reporting interest rate risk internally to key management personnel and represents management's assessment of the reasonably possible change in interest rates.

If interest rates had been 25 basis points higher/lower and all other variables were held constant, the Company's pre-tax profit for the years ended December 31, 2018 and 2017 would increase/decrease by NT\$1,791 thousand (US\$58 thousand) and increase/decrease NT\$3,609 thousand (US\$121 thousand), respectively.

#### 2) Credit Risk

Credit risk refers to the risk that counterparty will default on its contractual obligations resulting in financial loss to the Company. At the end of the reporting period, the Company's maximum exposure to credit risk which will cause a financial loss to the Company due to failure of counterparties to discharge an obligation and financial guarantees provided by the Company could arise from the carrying amount of the respective recognized financial assets as stated in the balance sheets.

The Company adopted a policy of only dealing with credit worthy counterparties as a means of mitigating the risk of financial loss from defaults. Credit exposure is controlled by counterparty limits that are reviewed and approved by the finance department periodically.

To minimize credit risk, the Company's management is responsible for the deformation of loan amount, loan approval, and other monitoring procedures in

order to ensure that appropriate actions have been taken to recover the outstanding account receivables. In addition, at the end of the reporting period, the Company further performs a second review on the recoverable amount of the accounts receivable in order to ensure that the accounts receivable that cannot be recovered have been recognized as appropriate impairment loss. In view of the above, the management level of the Company believes that the credit risk of the Company is effectively reduced.

The credit risk on liquid funds was limited because the counterparties are banks with high credit ratings assigned by international credit-rating agencies.

The Company's concentration of credit risk of 37% and 29% in total accounts receivable as of December 31, 2018 and 2017, respectively, was related to the Company's largest customer.

### 3) Liquidity Risk

The Company manages liquidity risk by monitoring and maintaining a level of cash and cash equivalents deemed adequate to finance the Company's operations and mitigate the effects of fluctuations in cash flows.

#### a) Liquidity and Interest Risk Rate Tables

The following table details the Company's remaining contractual maturity for its non-derivative financial liabilities with agreed repayment periods. The tables were drawn up based on the undiscounted cash flows of financial liabilities from the earliest date on which the Company can be required to pay. The interest recognition is not material.

	December 31, 2018							
	NTS				US\$			
	Less Than 1 Month	1 to 3 Months	3 Months to 1 Year	1-5 Years	Less Than 1 Month	1 to 3 Months	3 Months to 1 Year	1-5 Years
<b>Non-interest-bearing Liabilities</b>								
Accounts Payable	\$ 57,793	\$ 77,941	\$ -	\$ -	\$ 1,881	\$ 2,538	\$ -	\$ -
Other Payables	60,915	30,904	307	-	1,984	1,006	10	-
	<u>\$ 118,708</u>	<u>\$ 108,845</u>	<u>\$ 307</u>	<u>\$ -</u>	<u>\$ 3,865</u>	<u>\$ 3,544</u>	<u>\$ 10</u>	<u>\$ -</u>

	December 31, 2017							
	NTS				US\$			
	Less Than 1 Month	1 to 3 Months	3 Months to 1 Year	1-5 Years	Less Than 1 Month	1 to 3 Months	3 Months to 1 Year	1-5 Years
<b>Non-interest-bearing Liabilities</b>								
Accounts Payable	\$ 36,609	\$ 10,077	\$ -	\$ -	\$ 1,230	\$ 339	\$ -	\$ -
Other Payables	33,926	10,770	-	-	1,139	362	-	-
Variable Interest Rate Assets	-	42,074	-	-	-	1,414	-	-
	<u>\$ 70,535</u>	<u>\$ 62,921</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 2,369</u>	<u>\$ 2,115</u>	<u>\$ -</u>	<u>\$ -</u>

b) Financing Facilities	<u>December 31, 2018</u>	<u>December 31, 2017</u>
<u>NT\$</u>		
Secured Bank Loan Facilities:		
— Amount Used	\$ -	\$ 42,074
— Amount Unused	<u>767,875</u>	<u>850,726</u>
	<u>\$767,875</u>	<u>\$892,800</u>
 <u>US\$</u>		
Secured Bank Loan Facilities:		
— Amount Used	\$ -	\$ 1,414
— Amount Unused	<u>25,000</u>	<u>28,586</u>
	<u>\$ 25,000</u>	<u>\$ 30,000</u>

For the restriction conditions of the borrowings described above, refer to Note 17.

### 30. TRANSACTIONS WITH RELATED PARTIES

Balances and transactions between the Company and its subsidiaries, which are related parties of the Company, have been eliminated on consolidation and are not disclosed in this note.

The total amount of compensation of directors and key management personnel is as follows.

	<u>2018</u>	<u>2017</u>
<u>NT\$</u>		
Other Employee Benefits	\$ 68,665	\$ 62,322
Share-based Payments	16,751	8,462
Post-employment Benefits	<u>985</u>	<u>802</u>
	<u>\$ 86,401</u>	<u>\$ 71,586</u>
 <u>US\$</u>		
Other Employee Benefits	\$ 2,277	\$ 2,048
Share-based Payments	556	278
Post-employment Benefits	<u>33</u>	<u>26</u>
	<u>\$ 2,866</u>	<u>\$ 2,352</u>

The remuneration of directors and key executives was determined by the remuneration committee with regard to the performance of individuals and market trends.

### 31. EXCHANGE RATE INFORMATION OF FINANCIAL ASSETS AND LIABILITIES DENOMINATED IN FOREIGN CURRENCIES

The following information is a summary of the foreign currencies other than the functional currencies of each entity of the Company. The exchange rate disclosed refers

to the exchange rate for exchanging such foreign currencies into the functional currencies. The significant financial assets and liabilities denominated in foreign currencies were as follows:

Year Ended December 31, 2018

	Foreign Currencies	Exchange Rate	Carrying Amount (In Thousand US\$)
<u>Financial Assets</u>			
<u>Monetary Items</u>			
RMB	\$ 17,311	0.145705 (RMB: USD)	\$ 2,522
USD	5,343	110.411836 (USD: JPY)	<u>5,343</u>
			<u>\$ 7,865</u>
<u>Financial Liabilities</u>			
<u>Monetary Items</u>			
RMB	12,204	0.145705 (RMB: USD)	\$ 1,778
USD	3,334	110.411836 (USD: JPY)	<u>3,334</u>
			<u>\$ 5,112</u>

Year Ended December 31, 2017

	Foreign Currencies	Exchange Rate	Carrying Amount (In Thousand US\$)
<u>Financial Assets</u>			
<u>Monetary Items</u>			
RMB	\$ 20,819	0.153041 (RMB: USD)	\$ 3,186
USD	9,627	112.637982 (USD: JPY)	<u>9,627</u>
			<u>\$ 12,813</u>
<u>Financial Liabilities</u>			
<u>Monetary Items</u>			
RMB	2,813	0.153041 (RMB: USD)	\$ 431
USD	9,045	112.637982 (USD: JPY)	<u>9,045</u>
			<u>\$ 9,476</u>

The significant realized and unrealized foreign exchange gains (losses) were as follows:  
(In Thousands of U.S. Dollars)

Foreign Currencies	2018		2017	
	Exchange Rate	Net Foreign Exchange Gain (Loss) (US\$ in Thousands)	Exchange Rate	Net Foreign Exchange Gain (Loss) (US\$ in Thousands)
RMB	0.1512(RMB: USD)	(\$ 149)	0.1480(RMB: USD)	\$ 179
USD	110.4362(USD: JPY)	<u>45</u>	112.1705(USD: JPY)	<u>42</u>
		<u>(\$ 104)</u>		<u>\$ 221</u>

## 32. SEPARATELY DISCLOSED ITEMS

### a. Information About Significant Transactions and (II) Investees

- 1) Financing provided to others: None
- 2) Endorsements/guarantees provided: None
- 3) Marketable securities held: (Table 1)
- 4) Marketable securities acquired and disposed of at costs or prices of at least NT\$300 million or 20% of the paid-in capital: None
- 5) Acquisitions of individual real estate at costs of at least NT\$300 million or 20% of the paid-in capital: None
- 6) Disposals of individual real estate at prices of at least NT\$300 million or 20% of the paid-in capital: None
- 7) Total purchases from or sales to related parties amounting to at least NT\$100 million or 20% of the paid-in capital: (Table 2)
- 8) Receivables from related parties amounting to at least NT\$100 million or 20% of the paid-in capital: (Table 3)
- 9) Trading in derivative instruments: None
- 10) Intercompany relationships and significant intercompany transactions: (Tables 4)
- 11) Information on investees: (Table 5)

### b. Information on Investments in Mainland China:

- 1) Information on any investee company in mainland China, showing the name, principal business activities, paid-in capital, method of investment, inward and outward remittance of funds, ownership percentage, net income of investees, investment income or loss, carrying amount of the investment at the end of the period, repatriations of investment income, and limit on the amount of investment in the mainland China area: (Table 6)
- 2) Any of the following significant transactions with investee companies in mainland China, either directly or indirectly through a third party, and their prices, payment terms, and unrealized gains or losses: None
  - a) The amount and percentage of purchases and the balance and percentage of the related payables at the end of the period.
  - b) The amount and percentage of sales and the balance and percentage of the related receivables at the end of the period.
  - c) The amount of property transactions and the amount of the resultant gains or losses.
  - d) The balance of negotiable instrument endorsements or guarantees or pledges of collateral at the end of the period and the purposes.
  - e) The highest balance, the end of period balance, the interest rate range, and total current period interest with respect to financing of funds.

- f) Other transactions that have a material effect on the profit or loss for the period or on the financial position, such as the rendering or receiving of services.

### 33. SEGMENT INFORMATION

#### a. Operating Segment

The Company is engaged in research and development, design, and manufacturing of ASIC and SOC and provides related services. These activities are deemed single industry; accordingly, management considers the Company as having only one reportable segment.

#### b. Geographical Information

The Company operates in three principal geographical areas - Japan, Taiwan, and China.

The Company's revenue from continuing operations from external customers by location of operations and information about its non-current assets (excluding deferred income tax assets) by location of assets are detailed below.

(In Thousands of NT\$)

	Revenue from External Customers		Non-current Assets	
	December 31		December 31	
	2018	2017	2018	2017
China	\$ 1,577,129	\$ 1,746,913	\$ 91,076	\$ 73,806
Japan	1,320,636	1,709,171	7,750	7,210
Taiwan	211,552	462,338	250,889	205,689
Europe	183,574	22,330	-	-
Others	157,787	324,891	449,015	480,853
	<u>\$ 3,450,678</u>	<u>\$ 4,265,643</u>	<u>\$ 798,730</u>	<u>\$ 767,558</u>

(In Thousands of US\$)

	Revenue from External Customers		Non-current Assets	
	December 31		December 31	
	2018	2017	2018	2017
China	\$ 52,311	\$ 57,404	\$ 2,965	\$ 2,480
Japan	43,804	56,164	252	242
Taiwan	7,017	15,193	8,168	6,912
Europe	6,089	734	-	-
Others	5,233	10,674	14,620	16,157
	<u>\$ 114,454</u>	<u>\$ 140,169</u>	<u>\$ 26,005</u>	<u>\$ 25,791</u>

c. Major customers representing at least 10% of net revenue

Customer	2018			2017		
	US\$	NT\$	%	US\$	NT\$	%
Customer A	\$ 16,553	\$499,045	14	(Note)	(Note)	(Note)
Customer B	15,385	463,834	13	\$ 20,983	\$638,565	15
Customer C	15,272	460,434	13	42,519	1,293,947	30
Customer D	10,979	331,015	10	(Note)	(Note)	(Note)

Note: Revenue from the customer for the indicated period was less than 10% of the Company's revenue.





ALCHIP TECHNOLOGIES, LIMITED AND SUBSIDIARIES  
TOTAL PURCHASES FROM OR SALES TO RELATED PARTIES AMOUNTING TO AT LEAST NT\$100 MILLION OR 20% OF THE PAID-IN CAPITAL  
FOR THE YEAR ENDED DECEMBER 31, 2018

(In Thousands of New Taiwan Dollars)

TABLE 2

Buyer	Related Party	Relationship	Transaction Details			Abnormal Transaction		Notes/Accounts Receivable (Payable)		Note	
			Purchase/Sale	Amount	% to Total	Payment Terms	Unit Price	Ending Balance	% to Total		
The Company	Alchip Shanghai	Subsidiary	Purchase	\$ 293,632	13.25	Within 1 Year	The Same as Regular Terms	The Same as Regular Terms	(\$ 299,145)	( 57.99)	—
	Alchip KK	Subsidiary	Sale	( 114,611)	( 3.91)	Within 1 Year	The Same as Regular Terms	The Same as Regular Transaction Terms	116,579	15.30	—
	Alchip KK	Subsidiary	Purchase	104,116	4.70	Within 1 Year	The Same as Regular Terms	The Same as Regular Transaction Terms	( 43,115)	( 8.36)	—
Alchip Shanghai	The Company	Subsidiary	Sale	( 293,632)	( 100.00)	Within 1 Year	The Same as Regular Terms	The Same as Regular Transaction Terms	299,145	100.00	—
Alchip KK	The Company	Subsidiary	Purchase	114,611	21.63	Within 1 Year	The Same as Regular Terms	The Same as Regular Transaction Terms	( 116,579)	( 79.86)	—
	The Company	Subsidiary	Sale	( 104,116)	( 16.27)	Within 1 Year	The Same as Regular Terms	The Same as Regular Transaction Terms	43,115	36.84	—

Alchip Technologies, Limited and Subsidiaries  
 RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NT\$100 MILLION OR 20% OF THE PAID-IN CAPITAL  
 December 31, 2018

(In Thousands of New Taiwan Dollars)

TABLE 3

Company Name	Related Party	Relationship	Ending Balance	Turnover Rate	Overdue		Amounts Received in Subsequent Period	Allowance for Impairment Loss
					Amount	Actions Taken		
The Company Alchip Shanghai	Alchip KK The Company	Subsidiary Subsidiary	\$ 116,579 299,145	0.71 1.10	\$ - -	-- --	\$ - -	- -

Alchip Technologies, Limited and Subsidiaries  
**INTERCOMPANY RELATIONSHIPS AND SIGNIFICANT INTERCOMPANY TRANSACTIONS**  
**FOR THE YEAR ENDED DECEMBER 31, 2018**

(In Thousands of New Taiwan Dollars)

TABLE 4

No. (Note 1)	Investee Company	Counterparty	Relationship y (Note 2)	Transaction Details			
				Financial Statement Account	Amount (Note 4)	Payment Terms	% to Total Revenue or Asset (Note 3)
0	The Company	Alchip KK	1	Accounts Receivable	\$ 116,579	Based on Regular Items	3
		Alchip KK	1	Operating Revenue	114,611	Based on Regular Items	3
		Alchip Hefei	1	Other Receivables	25,365	Based on Regular Items	1
1	Alchip Shanghai	The Company	2	Accounts Receivable	299,145	Based on Regular Items	9
		The Company	2	Operating Revenue	293,632	Based on Regular Items	9
2	Alchip Wuxi	The Company	2	Accounts Receivable	66,344	Based on Regular Items	2
		The Company	2	Operating Revenue	95,271	Based on Regular Items	3
3	Alchip Hefei	The Company	2	Operating Revenue	41,432	Based on Regular Items	1
4	Alchip KK	The Company	2	Accounts Receivable	43,115	Based on Regular Items	1
		The Company	2	Operating Revenue	104,116	Based on Regular Items	3

Note 1:

- (1) Fill in "0" for the parent company.
- (2) Subsidiaries are listed in order.

Note 2: Relationship types are as follows:

- (1) Parent to subsidiary.
- (2) Subsidiary to parent.
- (3) Between subsidiaries.

Note 3: For calculation of transaction amount to total sales or assets, the numerator and denominator are determined by the characteristics of the transaction. If the feature of the transaction belongs to balance sheet items, take the ending balance of the year divided by total assets; if the feature of the transaction belongs to income and expense items, take the accumulated balance of the year divided by total sales.

Note 4: All intra-group transactions, balances, income, and expenses are eliminated in full upon consolidation.

Alchip Technologies, Limited and Subsidiaries  
 INFORMATION ON INVESTEES  
 FOR THE YEAR ENDED DECEMBER 31, 2018

In Thousands of New Taiwan Dollars, Unless Stated Otherwise)

TABLE 5

Investor	Investee Company	Location	Main Businesses and Products	Original Investment Amount		As of December 31, 2018			Net Income(Loss) of Investee	Share of Profit (Loss)	Note
				December 31, 2018	December 31, 2017	Number of Shares (in thousands)	%	Carrying Amount			
The Company	Alchip HK	Hong Kong	Investment	\$520,687 (Note 2)	\$496,399	12,230,170	100	\$475,856 (Note 2)	(\$ 14,787)	—	
	Alchip USA	U.S.A.	Sales of ASIC and SOC.	114,922	114,922	391,000	100	22,546	( 681)	—	
	Alchip KK	Japan	Sales of ASIC and SOC.	62,587	62,587	2	100	59,001	4,532	—	
	Alchip TW	Taiwan	Provide ASIC and SOC services.	100	100	10	100	595,153	( 21,649)	—	
	Alchip BVI	Tortola British Virgin Islands	Investment	473,317 (Note 1)	473,317	50	100	492,531 (Note 1)	( 23,927)	—	

Note 1: The investment amount of NT\$ 471,735 thousand (US\$ 15,050 thousand) has been injected. However, the procedures of capital-increase have not been completed.

Note 2: Among which, an amount of NT\$24,288 thousand (US\$820 thousand) has been injected. However, the procedures of capital-increase have not been completed.

Alchip Technologies, Limited and Subsidiaries  
Information on Investments in Mainland China  
FOR THE YEAR ENDED DECEMBER 31, 2018

TABLE 6

In Thousands of New Taiwan Dollars, Unless Stated Otherwise)

Investee Company in China	Main Businesses and Products	Paid-in Capital	Method of Investment (Note 1)	Accumulated Outward Remittance for Investment from Taiwan as of January 1, 2018	Remittance of Funds		Accumulated Outward Remittance for Investment from Taiwan as of December 31, 2018	Net Income (Loss) of the Investee	% Ownership of Direct or Indirect Investment	Investment Gain (Loss) (Note 2)	Carrying Amount as of December 31, 2018	Accumulated Repatriation of Investment Income as of December 31, 2018
					Outward	Inward						
Alchip Shanghai	Research and development, design, and sales of ASIC and SOC and rendering of related services.	\$ 393,152 (RMB 102,392)	Note 1 (2)	\$ 393,152 (US 12,800)	-	-	\$ 393,152 (US 12,800)	(\$ 15,309) (2)2.	100%	(\$ 15,309) (2)2.	\$ 372,152	\$ -
Alchip (Wuxi)	Research and development and design of ASIC and SOC and rendering of related services.	61,430 (RMB 12,482)	Note 1 (2)	61,430 (US 2,000)	-	-	61,430 (US 2,000)	10,361 (2)2.	100%	10,361 (2)2.	86,134	-
Alchip Hefei	Research and development and design of ASIC and SOC and rendering of related services.	15,358 (RMB 3,469)	Note 1 (2)	15,358 (US 500)	-	-	15,538 (US 500)	( 207) (2)2.	100%	( 207) (2)2.	( 911)	-
Alchip Jinan	Research and development and design of ASIC and SOC and rendering of related services.	24,081 (RMB 5,031)	Note 1 (2)	-	24,081 (US 784)	-	24,081 (US 784)	( 9,402) (2)2.	100%	( 9,402) (2)2.	14,700	-
Accumulated Outward Remittance for Investment in Mainland China as of December 31, 2018				\$ -	\$ -	\$ -	\$ -				\$ -	\$ -

Investment Amounts Authorized by Investment Commission, MOEA	Upper Limit on the Amount of Investment Stipulated by Investment Commission, MOEA
\$ -	\$ -

Note 1: The investment types are as follows:

- (1) Direct investment in mainland China.
- (2) Indirect investment in mainland China through a subsidiary in a third place. (Investor: Alchip H.K.)
- (3) Others.

Note 2: In the column of investment gain or loss:

- (1) It should be noted if the investment was still in preparation without investment gain or loss.
- (2) The recognition basis of investment gain or loss should be noted as follows:

1. The financial statement is audited by an international accounting firm cooperating with accounting firms in Taiwan.
2. The financial statement is audited by a certified public accountant cooperating with the parent company in Taiwan.
3. Others

Alchip Technologies, Limited

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