

IV. Operational Highlights

4.1 Business Activities

4.1.1 Business Scope

A. Main areas of business operations

1. F219010 Electronic materials retail sales
2. F113070 Wholesale of Telecom Instruments
3. F119010 Electronic materials wholesale trading
4. CC01050 Data storage and processing equipment manufacturing
5. CC01070 Wireless communication machinery and equipment manufacturing
6. CC01080 Electronic parts and components manufacturing
7. F213060 Retail Sale of Telecom Instruments
8. ZZ99999 In addition to licensed businesses, the Company may operate any other businesses that are not prohibited or restricted by law.

B. Revenue distribution

Unit ; NT\$ thousands

Products	2024	Percentage
RF Front-End devices and modules	1,689,803	100%

C. Main products

RF Front-End devices and modules, including

1. Filter
2. Balun
3. Balanced Filter
4. Diplexer
5. Triplexer
6. Coupler
7. Antenna
8. Antenna Module
9. Bluetooth Module
10. Front-end Module
11. Antenna Switch Module
12. RF Chip Ceramic Device, including passive inductors and capacitor etc.

4.1.2 Industry Overview

A. Current Status and Development of the Industry

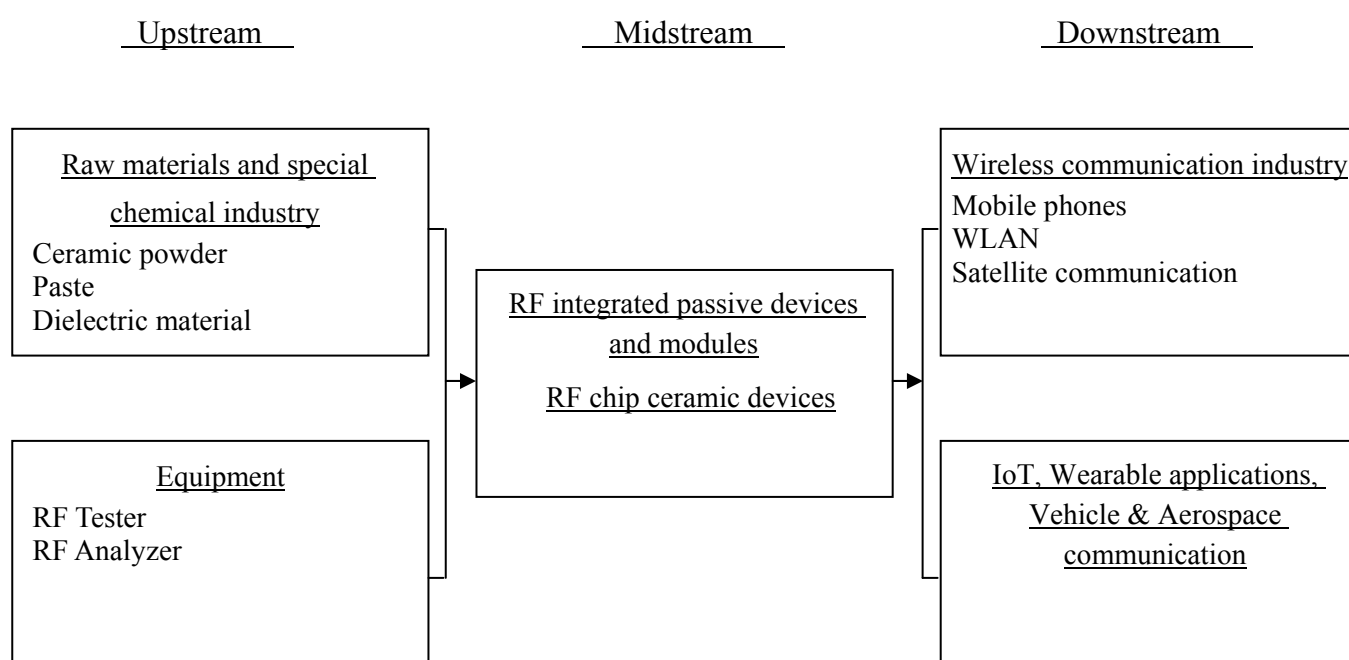
With the rapid development of mobile communication technology, the growth of related terminal products and communication equipment has further driven the demand for wireless communication. Wireless communication terminal applications such as smartphones, wireless local area networks (WLAN), Bluetooth, global positioning systems (GPS), laptop, tablet computer, wireless phones, walkie-talkies, pagers, home wireless (Home RF), digital broadcasting, wireless data machines, wireless fax machines, game console, automotive and emerging Internet of Things (IoT) and wearable applications, and more. Due to the rapid increase in the demand for wireless communication applications in the global market, the frequency band of wireless communication has risen sharply, and due to the trend of miniaturization, multi-function and high transmission speed of wireless portable products, this has triggered the market for high-frequency integrated components and the high demand for the modules.

Although the system is becoming more and more complex, the number of internal components actually used in various communication systems is increasingly integrated, which is mainly due to the integration of the lines. As for the integration of passive components, the goal is toward system-level packaging (System in a Package: SiP) or System on a Chip (SoC) development. Since the wireless communication applications built into the terminal products are the mainstream of future development, modularization will also become the future development trend of communication components, and the high-performance component modularization needs to utilize high-density packaging processes to the communication market. From the perspective of the supply chain, manufacturers with SiP high-density system architecture technology can provide upstream and downstream integrated services, and will become an active partner of chip design and terminal product companies in the future.

In recent years, smartphones, GPS, WLAN, and Bluetooth, which have grown dramatically in wireless communication applications, have different functions, features, or markets, but the same is high-density circuits, miniaturization, high-frequency for required components, that are highly integrated and modular. The high-frequency integrated components and modules and high-frequency chip ceramic components operated by the Company are used in the wireless communication market. The Company is the first design and manufacturing company in Taiwan that focuses on RF integrated components and modules. The developed products are in line with market expectations and the integrated terminal applications have high growth momentum. The Company has the highest growth and development in the domestic key component industry of RF communication.

B. The Interconnectivity of Upstream, Midstream, and Downstream Entities in the Industry

High-frequency integrated components and modules and high-frequency wafer ceramic components in the upstream raw material industry, and they mainly include ceramic powder, conductive ink and dielectric materials. The main process equipment includes laser drilling machine, end silver machine, continuous furnace, wire Machines, external inspection machines, RF testers and network analyzers. The downstream industries include the wireless communication industry, vehicle electronic systems and the aerospace communication industry. They are closely related to the supply and demand of the upstream, midstream and downstream industries. The relevant maps of the upstream, middle and downstream industries are listed as follows:



C. Product Trends and Competition

The multi-functionalization and miniaturization of wireless communication products have become a market trend, and the development of wireless communication components will be in the direction of high frequency, miniaturization and modularization.

In recent years, wireless communications in Taiwan have flourished, and mainstream applications such as smartphones, WLAN, GPS or Bluetooth have shown rapid growth. However, compared with international manufacturers, the development of wireless communication components and modular technology in Taiwan is still weak. At present, global integrated component manufacturers are headed by Japan, the United States and Europe, such as Murata, Kyocera, TDK, etc. in Japan; CTS in the US and Bosch, CMAC and other large manufacturers in Europe. In contrast, due to late start, the relative output of domestic manufacturers in the global market share is still very low.

As wireless communication applications will be at the heart of future market growth, the Company is actively developing forward-looking and innovative high-frequency components and modular cutting-edge technologies to capture the opportunities for future wireless communications growth.

4.1.3 Technology and R&D Status

A. R&D Expenses

In 2024, the Company invested NT\$104,122 thousand in R&D.

B. Successful R&D and Technologies Development

(a) Research and development

As the Company's R&D team has deep academic foundations and product development experience in RF communications and materials engineering, it can grasp the market pulse in both technical development and commercial applications. In terms of research and development, the integration of RF components and modular technology are two key directions. The main R&D projects can be roughly divided into technical analysis, new product development, process improvement, material formulation and quality analysis.

(b) Technology or product that has been successfully developed in recent years

Year	Successful Development of Technologies or Products
2024	<ol style="list-style-type: none">1. Low loss triplexer with package size of 2.0mmx1.25mm for GPS/WiFi-7 dual-band communication system2. Bandpass filter with 6-pins package size of 1.6mmx0.8mm for 5G N77 communication system3. High rejection bandpass filter with package size of 5.5mmx3.2mm for WiFi 6E 5.5/6.6GHz communication system4. High rejection diplexer with package size of 1.6mmx0.8mm for WiFi 6E dual-band communication system5. Differential complexed-impedance receiver diplexer with package size of 2.0mmx1.25mm for WiFi dual-band communication system6. Low loss and high rejection bandpass filter with package size of 0.8mmx0.5mm for 5G N77 communication system7. High isolation triplexer with package size of 2.5mmx2.0mm for 5G N77 mobile communication system8. High rejection bandpass filter with package size of 2.0mmx1.25mm for WiFi 6E communication system9. Low-profile patch antenna with package size of 4.0mmx4.0mm for UWB communication system10. Low loss bandpass filter with package size of 1.6mmx0.8mm for 5G N79 communication system11. Power divider with package size of 1.6mmx0.8mm for GPS application12. 1:2 Balanced filter with low temperature drift characteristic in the package size of 2.0mmx1.25mm for 6.7GHz communication system13. High rejection bandpass filter with package size of 1.6mmx0.8mm for UWB communication system14. Low loss bandpass filter with package size of 1.0mmx0.5mm for 5G N77 communication system15. Bandpass filter with package size of 3.2mmx1.6mm for n258 millimeter wave communication system16. Low loss and high rejection bandpass with package size of 1.0mmx0.5mm for 5G N79 communication system17. High rejection bandpass filter with package size of 3.2mmx2.5mm for n258 millimeter wave communication system18. Low loss and high rejection bandpass with package size of 1.0mmx0.5mm for 5G N77/N79 broadband communication system

Year	Successful Development of Technologies or Products
	19. High rejection bandpass filter with package size of 3.2mmx2.5mm for 28.5GHz millimeter wave communication system 20. Low loss bandpass filter with package size of 1.6mmx0.8mm for 5G N77 communication system 21. High rejection bandpass filter with package size of 3.2mmx2.5mm for 30GHz millimeter wave communication system 22. 20db coupler with package size of 1.6mmx0.8mm for 6.7GHz communication system 23. High rejection bandpass filter with package size of 2.0mmx1.25mm for GPS application 24. Low loss bandpass filter with low profile package size of 1.6mmx0.8mm for 5G N77 communication system 25. Patch antenna with package size of 4.0mmx4.0mm for UWB communication system 26. High rejection bandpass filter with package size of 2.0mmx1.25mm for UWB communication system 27. Composite-LTCC material bandpass filter with package size of 1.6mmx0.8mm for WiFi 5G communication system 28. Compact patch antenna with package size of 3.5mmx3.5mm for UWB communication system 29. High rejection diplexer with package size of 1.6mmx0.8mm for WiFi-7 dual-band communication system 30. High isolation diplexer with package size of 2.0mmx1.25mm for 5G/ UWB communication system 31. Low loss and high rejection bandpass filter with package size of 1.6mmx0.8mm for 5G N77 communication system 32. Low loss diplexer with package size of 2.0mmx1.25mm for 2.7GHz/3.3GHz communication system 33. Multi-Order high rejection diplexer with package size of 5.5mmx3.2mm for WiFi-7 communication system 34. High rejection bandpass filter with package size of 1.0mmx0.5mm for 5G N77 communication system 35. High rejection diplexer with package size of 1.6mmx0.8mm for 2.7GHz/5.5GHz communication system 36. Low cost and high rejection bandpass filter with package size of 5.5mmx3.2mm for WiFi 6E 5.5/6.6GHz communication system 37. High rejection bandpass filter with low profile package size of 1.0mmx0.5mm for 5G N77 communication system 38. Integrated complexed-impedance balanced diplexer with package size of 2.0mmx1.25mm for WiFi dual-band communication system 39. High rejection diplexer with package size of 4.5mmx3.2mm for WiFi-7 router communication system 40. Low loss bandpass filter with package size of 1.6mmx0.8mm for UWB communication system 41. Balanced diplexer with package size of 2.0mmx1.25mm for WiFi dual-band communication system

- (c) The current progress of the unfinished R&D plan, the need to re-invest in R&D expenses and the expected time of completion of mass production

2024 Unfinished R&D Plan	Current Status	Expected Finished Time	Additional Imputed R&D Expenses(NT\$ thousands)
Develop miniaturized integration components	75%	2025/Q1-Q2	25,000
Develop miniaturized multi-frequency, multi-mode integrated modules	80%	2025/Q3-Q4	35,000
High precision materials, process development	80%	2025/Q3-Q4	35,000

- (d) Main factors for future R&D success

- ① Proper R&D strategy and effective mastery of product development timelines to achieve product time to market
- ② Good product design capability, early effective Design-in with client product design
- ③ Excellent and stable R&D team, enabling R&D experience to effectively accumulate and boost product development capabilities

- (e) Future R&D plan and expected R&D expenses

Future R&D Plan	For Future Three Years R&D Expenses(NT\$ thousands)
Develop miniaturized integration components	80,000
Develop miniaturized multi-frequency, multi-mode integrated modules	120,000
High precision materials, process development	110,000
Total	310,000

4.1.4 Long-term and Short-term Development

A. Short-term Development

- (a) Develop the main products in module type
- (b) Product miniaturization and multi-functionality
- (c) Strengthen the demand development of China and emerging markets

B. Long-term Development

- (a) Develop new products in module type
- (b) System on Chip module technology development
- (c) Strategic alliance cooperation model

4.2 Market and Sales Overview

4.2.1 Market Analysis

A. Sales Region

Unit: NT\$ thousands

Area \ Year		2023		2024	
		Amount	%	Amount	%
Domestic (Taiwan)		331,361	22.27	349,496	20.68
Oversea	Americas	341,012	22.91	518,695	30.70
	Asia	803,864	54.02	803,381	47.54
	Europe	11,958	0.80	18,231	1.08
	Total	1,156,834	77.73	1,340,307	79.32
Total		1,488,195	100.00	1,689,803	100.00

B. Market Share

In recent years, due to the booming wireless communication market, the low-temperature cofired ceramics (LTCC) component industry has shown a substantial growth. According to Market Research Future Report, the global annual output value of LTCC in 2023 is about 2.92 billion US dollars and will reach 5 billion US dollars by the end of 2032, and Japan is the largest supplier in the supply chain. The market share is as high as 50%, which dominates the global LTCC product market and technology, followed by Europe and the United States. Domestic manufacturers are still relatively low in global market share due to their late start.

The Company's high-frequency integrated components, modules and high-frequency chip ceramic components, including filters, balun, balanced filter, diplexers, triplexers, couplers, chip antenna, antenna modules, Bluetooth modules, RF front-end modules and antenna switch modules are commonly used in smartphones, WLAN, Bluetooth and GPS. Since the Company invested in the early domestic market and focuses on RF integration of components and modules, when the Company's products enter the market, they will obtain domestic and foreign customers with excellent quality and competitive price in a short time, and efficient service. At present, the Company is in a leading position in terms of domestic technology and market share. The Company's global market share is about 2%.

C. Future Market Supply, Demand, and Growth Status

With the globalization of telecommunications and the advancement of communication technologies, wireless communication has become the most dynamic industry in the 3C industry. Looking forward to the future, mobile phone penetration and portability are excellent when the terminal products are moving toward integration. The competitive advantage is to integrate other product features, of which smartphones are typical representatives. Smartphones have more and more powerful computing and multimedia features, with Internet access, download and sharing capabilities. This requires more transport channels, higher transmission bandwidth and better transmission efficiency. Therefore, it also triggers various communication functions that smartphones will combine now and in the future. From regional WLAN, short-range Bluetooth and ZigBee, to long-distance WiMAX, plus GPS and mobile TV capabilities, smartphones can be said to have combined voice, data, video and other versatility to create a comprehensive communications platform. DIGTIMES estimates that global smartphone shipments will reach 1.224 billion in 2025, with an annual growth rate of 3.6%. IDC estimates that global shipments of personal wearable devices will reach 559 million in 2025, with an annual growth rate of 3.9%. As for emerging IoT applications, the rapid development of smart applications, such as smart home, smart manufacturing, smart health and intelligence transportation. It is expected that the economic benefits brought by the Internet of Things in the future will be enormous. The RF components and modules operated by the Company are essential components for

wireless communication products. Communication products such as smartphones, computers, wireless networks, global satellite positioning systems, Internet of Things and wearable devices directly affect the future development of LTCC. As the current mainstream wireless communication applications are still growing at a high speed in the next few years, emerging communication products are also moving toward multi-functional integration, and the demand for integrated components and module products produced by the Company will be higher.

D. Competitive Advantage

(a) Combine four core technologies

The Company has four core technologies: advanced RF circuit design, material development, process design and product testing, which are rare in the industry. With independent control of key technologies in both RF and materials, the Company has the ability to deliver highly efficient custom products and services.

(b) Positioning products in line with market development

Wireless communication is the most dynamic industry in recent years. As the end product grows dramatically, it will directly drive the demand for our products. In addition, due to the diversified functions and miniaturization of mobile communications, the Company's SiP and LTCC process development of high-frequency integrated components and modules is in line with market expectations, which will further enhance market demand, so that the Company's growth prospects are full of potential.

(c) Quality product service

Combining the advantages of R&D and process, the Company can provide a full range of services that are more time-sensitive, highly customized, flexible and cost-competitive compared to international peers to win customers' high trust and recognition.

E. Favorable and Unfavorable Factors in the Long Term

(a) Favorable factors

- ① High growth in industry
- ② Leading LTCC technology in domestic market
- ③ Domestic market first and march straight into international
- ④ Highly competitive full service
- ⑤ Growing brand and OEM model

(b) Unfavorable factors

- ① Wireless communication products continue to introduce new products, with short product cycles and rapid price declines, so profit margins are squeezed

Related Countermeasures :

- Shorten the development schedule of new products, commit to high-end products, and avoid mature products that are in price wars.
- Participate in product development during the customer product design phase.
- Diversify products to spread the risk of price competition for a single product.
- Enhance material development and process improvement, increase product yield and equipment utilization, and reduce electricity and water consumption.

- ② Lack of R&D talent

Related Countermeasures :

- Actively participate in the leading new product plans of the Domestic Industrial Development Bureau, strive for foreign technology transfer or joint development opportunities, and promote R&D and technology upgrades.

- Establish a research and development knowledge management database to enable the effective development of research and development experience and results, and maximize the human resources efficiency of research and development.

4.2.2 Important Purpose and Production Process of the Main Products

A. Important Purpose of the Main Products

Products	Important Purpose
RF Front-End devices and modules	MSS, Cellular Phone, Cordless Phone, WLAN, GPS, Bluetooth, Ultra-wideband, WiMAX, ZigBee, MIMO, Wi-Fi, Power Amplifier, Low Noise Block (LNB), Home RF, IoT, Game Console and Wearable Applications

B. Manufacturing Process

Raw material → Slurry → Tape Casting → Via Punching → Via filling → Screen Printing → Laminating → Cutting → Co-firing → Upper electrode → Burning → Electroplating → Electrical Test → Packing → Shipping

4.2.3 Supply Status of Main Materials

Major Raw Materials	Source of Supply	Supply Situation
Powder	Celanese(Note 1), HERAEUS	Normal
Paste	Celanese(Note 1), SOJITZ, DAEJOO	Normal

Note 1 : "DuPont" company name changed to "Celanese"

4.2.4 Major Suppliers and Clients

A. Major Suppliers in the Last Two Calendar Years

Unit: NT\$ thousands

Item	2023				2024			
	Company Name	Amount	Percent	Relation with Issuer	Company Name	Amount	Percent	Relation with Issuer
1	A	46,114	18.51	None	B	60,301	21.48	None
2	B	45,409	18.23	None	A	42,451	15.12	None
3	C	33,576	13.48	None	C	36,352	12.95	None
4	Others	123,996	49.78		Others	141,621	50.45	
	Net Total Supplies	249,095	100.00		Net Total Supplies	280,725	100.00	

B. Major Clients in the Last Two Calendar Years

Unit: NT\$ thousands

Item	2023				2024			
	Company Name	Amount	Percent	Relation with Issuer	Company Name	Amount	Percent	Relation with Issuer
1	JOHANSON	253,732	17.05	The Company's director	JOHANSON	340,150	20.13	The Company's director
2	a	190,436	12.80	None	c	257,611	15.25	None
3	b (Note 1)	185,453	12.46	None	a	195,025	11.54	None
4	c (Note 1)	128,948	8.66	None	MINI-CKT	176,012	10.42	The Company's director
5	MINI-CKT (Note 2)	79,900	5.37	The Company's director	b	100,277	5.93	None
6	Others	649,726	43.66		Others	620,728	36.73	
	Net Sales	1,488,195	100.00		Net Sales	1,689,803	100.00	

Note 1: Due to the switch of end customer agents.

Note 2: Customer inventory liquidation is completed and demand increases.

4.3 Human Resources

Year		2023	2024	March 31, 2025
Number of Employees	Direct	162	167	163
	Indirect	43	43	42
	Management & Sales	37	37	37
	R & D	40	38	37
	Total	282	285	279
Average Age		39.0	39.7	39.8
Average Years of Service		9.0	9.5	9.6
Education	Ph.D.	3.2%	3.2%	3.2%
	Masters	14.9%	14.0%	14.0%
	Bachelor's Degree	48.2%	50.5%	50.5%
	Senior High School	24.8%	23.9%	23.7%
	Below Senior High School	8.9%	8.4%	8.6%

4.4 Environmental Protection Expenditure

4.4.1 Total Losses and Penalties

The loss or penalty caused by environmental pollution during the latest year and up to the printing date of this annual report: None.

4.4.2 Countermeasures and possible disbursements to be made in the future: N/A.

4.5 Labor Relations

4.5.1 Employees' Welfare, Education, Training and Pension, Employee Relations and Protection of Employees' Rights:

A. Employee Welfare

- (a) Profit sharing: Article 25 of the Articles of Incorporation: The Company should distribute remuneration to employees not less than 5% of annual profits.

- (b) Bonus system: Year-end bonus, performance bonus, operation bonus, etc.
- (c) Annual salary review system.
- (d) Periodic health checkup.
- (e) Group insurances.
- (f) Facilities: Parking lots, staff lounge, nursing room, cafeterias, etc.
- (g) Activities: Welfare committee would organize activities such as trips, year-end party, prize drawing and various fun contests, and cash gifts for important festivals, birthday, wedding and new babies, subsidies for hospitalization and education of employees' children.

B. Staff training and training situation

In accordance with the "Employee Education Training Management Procedures", the Company plans relevant training courses according to the professional functions and learning needs of employees.

(a) Training system

- ① Work-oriented training : The head of the unit is responsible for the work guidance of the subordinates or the training of the work.
- ② Centralized training : Consider developing human resources, organizing goals and employee education and propose annual education and training programs.
 - New recruit training : New recruits should receive pre-employment training
 - Functional training : Strengthen professional skills
 - General education course : Courses on ESG, information security, occupational safety and health, and self-Inspiration
- ③ Management training: Training courses for grassroots supervisors, middle managers and senior management.

(b) Summary of the implementation of education and development training this year

In 2024, ACX's internal and external training sessions total 2,726 hours.

On average, each employee attended about 9.6 hours of training, and ACX spends NT\$28 thousand on the education and development of employees.

C. Employee retirement system

- (a) The Company allocates pension funds in accordance with the legislation from the Ministry of Labor and managed by the Bureau of Labor Funds. The annual budget for the allocation of the minimum income cannot be lower than the income calculated based on the interest rate of the banks' two-year time deposits in accordance with the legislation "Management and Utilization of the Labor Pension Funds".

The Company's accumulated labor pension reserve fund is sufficient to cover labor pension pensions. With the approval of the relevant regulatory authorities, the company is allowed to suspend contributions to the labor pension reserve fund until January 2026.

- (b) The Company contributes at the rate of 6% of each employee's monthly wages to the Labor Pension personal account of the Bureau of the Labor Insurance in accordance with the provisions of the Labor Pension Act from July 1, 2005. Under this defined contribution plan, the Company's contribution to the Bureau of Labor Insurance requires no additional legal or constructive obligations thereafter.

D. Agreement between labor and management

The Company has an open management environment. Various forms of discussion and communication can be conducted at any time between management and employees. Any problem can be reached in a timely and interactive manner. The Company cares about the interaction and communication between colleagues, so that employees and employers can achieve common growth and development goals through communication and understanding. The Company has built a challenging and learning environment where the relationship between workers and employers is harmonious, so there are no labor disputes.

E. Various employee rights maintenance measures : Follow the Labor Standards Act to handle everything.

4.5.2 Any losses suffered by the Company in the most recent fiscal year and up to the annual report publication date due to labor disputes (including labor inspection results found in violation of the Labor Standards Act, specifying the disposition dates, disposition reference numbers, the articles of law violated, and the content of the dispositions):
None.

4.6 Cyber security management:

4.6.1 Describe the cyber security risk management framework, cyber security policies, concrete management programs, and investments in resources for cyber security management.

A. Security risk management framework

The Corporate Social Responsibility group was established to develop and implement policies or practices pertaining to the implementation of corporate governance, a sustainable environment, and safeguarding public interest. The group chairperson is headed by the president and comprises the following promotion teams: Corporate Governance, Employee Development, Green Products, Service of Customer, Supplier Management, Environment Protection and Social Participation. They are responsible for formulating corporate social responsibility policies, and objectives and activities for implementing corporate social responsibility-related events. The leader of each promotion team is usually the head of division, and team's members are composed of relevant business departments. The group performs its duties based on the P-D-C-A cycle. At the end of each year, the group is reviewed for its effectiveness and a written inspection report is compiled of the Board of Directors.

B. Cyber security policies

Esteem the business secrets, personal privacy and information security

C. Concrete management programs

Personnel management and information security education and training	<ul style="list-style-type: none"> ◆ Cyber security personnel carefully evaluate their suitability. ◆ Cyber security personnel should separation of powers for checks and balances ◆ Regularly conduct cyber security education training and publicity.
Computer system security management	<ul style="list-style-type: none"> ◆ Personal computer or tablet use is prohibited. ◆ Antivirus software installed and regularly updated. ◆ Installation of non-operating use and unauthorized software is prohibited. ◆ The use authority of personal computer is strictly controlled to prevent improper access to data.
System access control	<ul style="list-style-type: none"> ◆ Establish use rights and responsibilities for database and file access. ◆ Resigned personnel immediately cancel all permissions; personnel transfer immediately adjust permissions. ◆ There are specifications for password length, complexity and regular replacement frequency. ◆ Personal USB is prohibited.
System development and maintenance	<ul style="list-style-type: none"> ◆ In the initial stage of the system life cycle, the security needs of cyber communication are taken into account. ◆ Sign cyber security and confidentiality clauses with outsourced manufacturers. ◆ ACX personnel will accompany outsourced manufacturers to build and maintain facilities.
Sustainable operation planning and management	<ul style="list-style-type: none"> ◆ Establish daily data backup and remote backup system. ◆ Conduct system recovery plan testing and drills every six months, and review relevant testing deficiencies. ◆ Internal auditors conduct cyber security operation audits every year and report the results to the board of directors.

D. Investments in resources for cyber security management

(a) All new employees have completed the cyber security training.

(b) Participants of ransomware prevention propaganda total 141 personnel.

- (c) Entrust external experts to perform 1 network and cyber security assessments.
- (d) Purchase cyber security software (one year).
- (e) Become a member of the TWCERT/CC.

4.6.2 Any losses suffered by the Company in the most recent fiscal year and up to the annual report publication date due to significant cyber security incidents, the possible impacts therefrom, and measures being or to be taken: None.

4.7 Important Contracts: None.