

## V. Operational Highlights

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### 1. Business Activities

#### 1. Business Scope

##### 1. Main Business Scope:

- (1) CC01080 Electronic Parts and Components Manufacturing
- (2) CC01101 Electronic Parts and Components Manufacturing
- (3) CC01110 Computers and Computing Peripheral Equipment Manufacturing
- (4) CC01120 Data Storage Media Manufacturing and Duplicating
- (5) CC01990 Electrical Machinery, Supplies Manufacturing
- (6) F119010 Wholesale of Electronic Materials
- (7) F219010 Retail Sale of Electronic Materials
- (8) H201010 Investment
- (9) I301010 Software Design Services
- (10) I501010 Product Designing
- (11) JE01010 Rental and Leasing Business

##### 2. Revenue Proportion :

Established in May 1997, the Company's primarily provides Integrated Circuit (IC) packaging and testing services. Revenue proportion as of 2022 was followed :

Unit : NT 1,000s

Items	Net Revenue 2022	Revenue Proportion
Packaging Service	52,509,674	62.57%
Testing Service	12,844,703	15.30%
Module Service	8,455,733	10.08%
Wafer Level Packaging	4,130,441	4.92%
Wafer Level Testing	5,926,229	7.06%
Others	59,955	0.07%
Total	83,926,735	100.00%

##### 3. Current Product/Services :

- (1) High Pin-count Thin Small Outline Package (TSOP) packaging and testing services
- (2) Quad Flat No-leads (QFN) Packaging Services
- (3) Multi-Chip Packaging (MCP, S-MCP) Packaging and Testing Services
- (4) Ball Grid Array (wBGA, FBGA) IC packaging and testing services
- (5) Secured Digital Memory Card (SD, microSD) , USB packaging and testing services
- (6) Solid State Drive(SSD) , Embedded Memory (eMMC, eMCP, UFS) packaging and testing services
- (7) DRAM Chip-Stacking packaging and testing services
- (8) Mobile memory packaging and testing services
- (9) Wafer testing services
- (10) Wafer bumping packaging services
- (11) System-in-Package (SiP) packaging services
- (12) Redistribution Layer (RDL) services
- (13) Wafer Level Chip Scale Package (WLCSP) packaging services

- (14) Package on Package / Package in Package (PoP, PiP) packaging and testing services
- (15) CMOS Image Sensor (CIS) packaging and testing services
- (16) Flip-Chip Packaging Services
- (17) Copper Pillar Bump Flip Chip (Cu Pillar Bump Flip Chip) packaging services
- (18) Electro Magnetic Interference (EMI) shield package packaging services
- (19) Fan-Out Panel Level (FOPLP) packaging and testing services
- (20) Module and System packaging services

#### 4. Product/Service in Development :

- (1) Large-size (>100mm x 100mm) FCBGA.
- (2) Application of new processes and materials such as Cu core solder ball for Package on Package applications.
- (3) Application of advanced node wafers to automotive packaging and assembly.
- (4) FOPLP method based on RDL with ultra-fine line and pitch was successfully developed to supply high-density heterogeneous IC packaged products for high-speed network and server applications.
- (5) Fan-out on Substrate packaging.
- (6) Wafer Level Fan Out packaging.
- (7) Chip Last Fan-out architecture based on combination of Flip-Chip Package and Redistribution Layer (RDL) technology.
- (8) Pillars in Fan-Out (PiFO®) process for smart phone, wearable device and other consumer product applications.
- (9) CIS CSP with high yield and competitive cost incorporating the latest Through Silicon Via (TSV) technology.
- (10) Application of Through Silicon Via (TSV) technology to the packaging of high-frequency, high-capacity memory used in AI and other products.
- (11) 3D stacked packaging based on the integration of logic IC, 4 high bandwidth DRAM memory IC along with TSV and uBump bonding process to meet the requirements for high-performance, high-density, and high-bandwidth in AI, HPC and high-speed networking applications.
- (12) FOPLP stacked packaging that combines 8 NAND memory IC with Controller to meet the requirements for ultra-thin, high-density, and high-speed mobile communication applications.
- (13) High heat dissipation memory IC module technology combining NAND memory with micro-controller chip for ultra-thin, high capacity, high heat dissipation and high-performance cloud storage applications.
- (14) High Bandwidth Memory (HBM) stacked IC incorporating TSV and microBump technologies, as well as Chip Fan-out Stack packaging to provide high bandwidth, high memory density, high-performance computing, and high-speed Internet connection applications.
- (15) 8 NAND Flash memory IC was combined with 8 LPDRAM memory IC, micro-controllers, and 6 stacked IC with silicon dielectric layer to provide high-density, high-performance, and ultra-thin packaging for mobile communication applications.
- (16) Highly integrated FO-PoP structure to provide enhanced electrical attributes through integration of active IC and spherical devices.

- (17) 3D-FOPoP structure to supply package solutions for high-density, high electrical performance, as well as size shrinkage.
- (18) Ultra-small and ultra-large IC (CIS CSP) packaging to satisfy the requirements of different applications.
- (19) Development of high-speed 3D-NAND testing services and hardware development.
- (20) High-speed Storage Class Memory (SCM) testing services and hardware development.
- (21) Development of UFS 4.0 automotive product & application testing services and hardware development.
- (22) Development of Tester IO board hardware.
- (23) Large-size packaging, assembly and testing service.

## 2. Industry Summary

### 1. Current Industry Status & Outlook

2022 was a tumultuous year for the world filled with industry upheavals. A multitude of unfavorable factors such as COVID-19, the breakout of Russo-Ukrainian War, the US Federal Reserve's continued tightening of monetary policy, the US continuing to ramp its technology blockade of China, and global geopolitics all served to slow down global economic developing in 2022. Data published by the International Monetary Fund (IMF) indicated that global economic growth will be just 3.4%.

The economic prospects for 2023 remain just as precarious. IMF Managing Director Kristalina Georgieva warned during her speech in early April that the rising geopolitical tensions and stubbornly high rates of inflation all mean that the economy will not rebound any time soon. Most developed economies can expect growth to remain low. Their weak performance is expected to weigh down on global economic growth and keep it under 3%.

For the semiconductor industry, 2022 global chip sales published by the Semiconductor Industry Association (SIA) showed that while the market went into a slump in the second half of 2022, annual sales hit a historic high of US\$574 billion, representing a 3.3% jump over 2021. According to the 2022 semiconductor end-user application report published by the World Semiconductor Trade Statistics (WSTS), even though the PC and communications device market continued to account for the largest share of semiconductor sales, there is strong growth coming from automotive and industrial applications as well.

The Taiwanese semiconductor industry has outperformed the global average. According to the International Strategy Center of Industrial Technology Research Institute (ITRI), the total output of the Taiwanese semiconductor industry reached NT\$4.84 trillion in 2022 and grew by 18.5% YoY. Among these, the IC design industry reached \$1.23 trillion and grew by 1.4% YoY, the IC manufacturing industry reached \$2.92 trillion and grew by 31.0% YoY (including \$2.68 trillion from foundry services with a growth of 38.3% YoY, while memory and other reached \$235.6 billion and declined by 18.2% YoY), the IC packaging industry reached \$466 billion and grew by 7% YoY, and the IC testing industry reached \$218.7 billion and declined by 2.3% YoY. The Taiwanese semiconductor market was forecast to be worth \$4.56 trillion and shrink by 5.6% YoY in 2023.

The semiconductor industry will continue to grow in the long-term however. Semiconductors have a

wide range of applications including smart phones, computers, cloud servers, AI, AR/VR, 5G, electric and self-driving vehicles, IoT, and e-healthcare. New applications are constantly being developed.

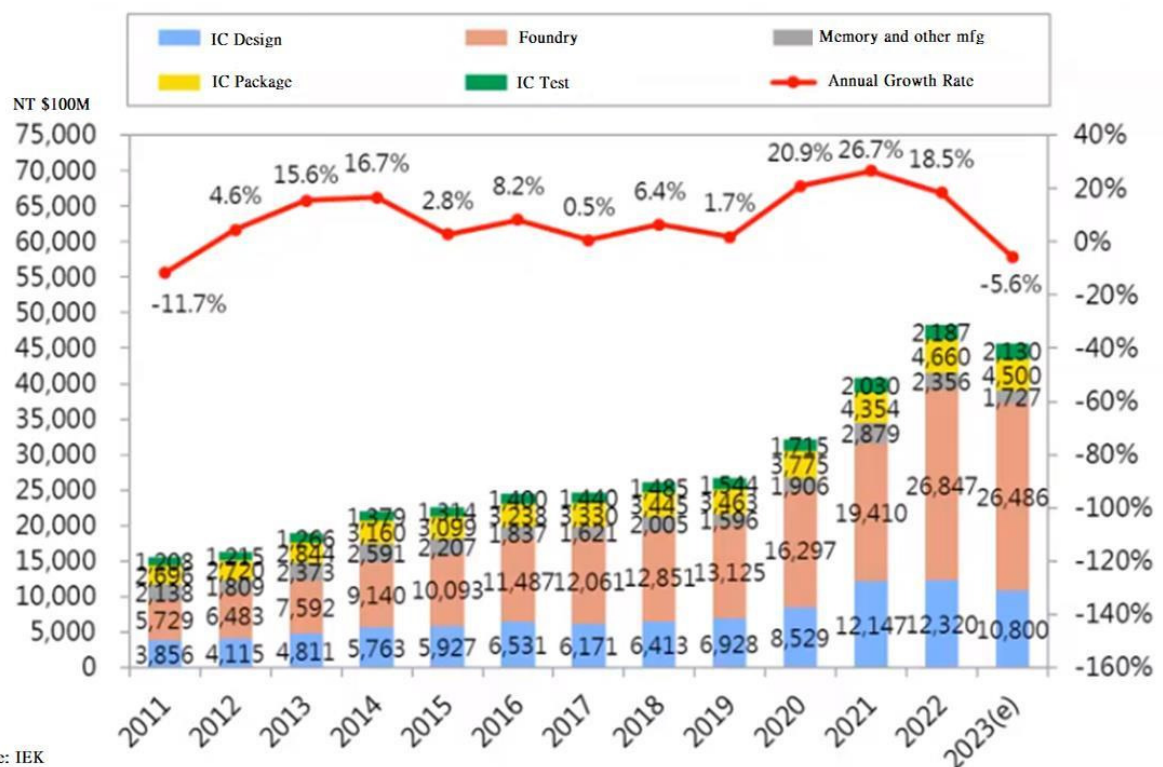
### 2019-2022 Taiwan IC Industry Value

Unit : NT \$billions

In NTD M	2019	YoY	2020	YoY	2021	YoY	2022	YoY
IC Industry value	2,665.6	1.7%	3,222.2	20.9%	4,082.0	26.7%	4,837.0	18.5%
IC Design	692.8	8.0%	852.9	23.1%	1,214.7	42.4%	1,232.0	1.4%
IC Manufacturing	1,472.1	-0.9%	1,820.3	23.7%	2,228.9	22.4%	2,920.3	31.0%
Wafer Foundries	1,312.5	2.1%	1,629.7	2.1%	1,941.0	19.1%	2,684.7	38.3%
Memory & Other	159.6	-20.4%	190.6	19.4%	287.9	51.0%	235.6	-18.2%
IC Packaging	346.3	0.5%	377.5	9.0%	435.4	15.3%	466.0	7.0%
IC Testing	154.4	4.0%	171.5	11.1%	203.0	18.4%	218.7	7.7%
IC Product Value	852.4	1.3%	1,043.5	22.4%	1,502.6	44.0%	1,467.6	-2.3%
Overall Global Semiconductor Value (US\$ B)/YoY	4,123	-12.0%	4,404	6.8%	555.9	26.2%	573.5	3.2%

Source : Industrial Technology Research Institute

### Taiwan Semiconductor Revenue by Sector



Source: IEK

## 2. Industry Supply Chain

Sectors in IC industry can be categorized according to position in production process, including IC Design at the upstream, IC Manufacturing & Foundries at the mid-stream and IC Assembly & Testing sector at the downstream.

### (1) Upstream IC Design:

IC Design Sector includes companies designing IC products. The sector is knowledge-intensive with high entrance barrier and return on investment. Its main business scope includes designing and sales of own products or customized design for customers.

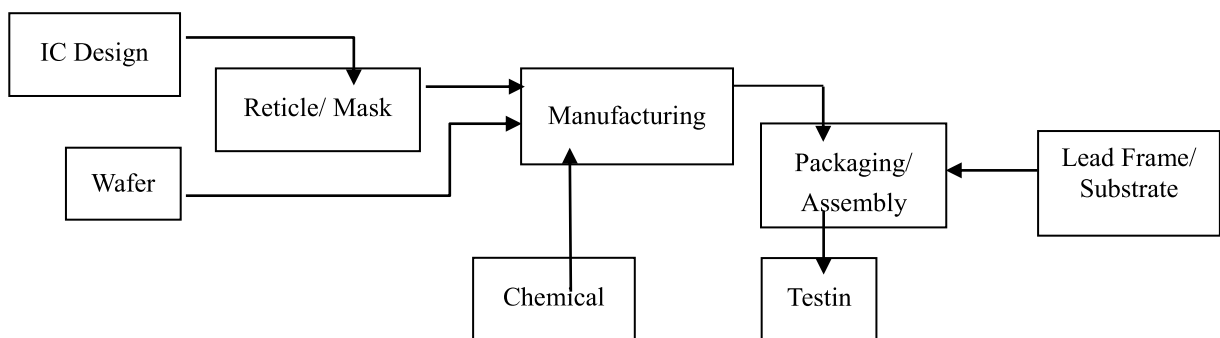
### (2) Mid-stream IC Manufacturing:

Include IC manufacturing sector and related chemical suppliers. Its main business scope involves manufacturing wafer with precision tools according to in IC circuits designed in house or specified by customers. This sector is capital and technology intensive with high entrance barrier

### (3) Downstream Assembly and Testing:

Outsource Assembly and Testing (OSAT) sector provides cutting, packaging, assembly and testing service to manufactured IC wafer for final product application.

IC Industry Supply Chain as illustrated below



In recent years' scope of IC manufacturing as well as assembly and testing continues overlap due to increasing market demand for larger quantity and higher quality IC. In addition to higher performance and smaller profile, IC is also required to satisfy demands for integrated functions. As a result, some wafer foundries begin to develop products and services that extends into scope of IC packaging and assembly. Majority of wafer foundries choose to work closely with cooperating assembly and testing service providers. Integrated Design and Manufacturers (IDM) also collaborate with OSAT service providers in designing and developing product solutions.

## 3. Trend of Product Development and Competition

### (1) Trend of Product Development

Trends in semiconductor development include multi-function, enhanced performance, energy-efficiency, thermal dissipation, and a high level of integration. These are spurring the push towards advanced packaging technologies such as System in Package (SiP) and Heterogeneous Integration. New types of advanced packaging technologies such as Panel Fan-out, TSV, Embedded Package, Thin Wafer, Chip Stacking, Fine Pitch Flipchip, High Density Encapsulation, Antenna in Package (AiP), High Density SMT, as well as the

integration of System Assembly and Testing technologies will be the next critical juncture for the semiconductor industry in the post-Moore's Law age.

Future products will inevitably require the integration of different advanced packaging and testing technologies. PTI has for many years focused on continuous R&D of technologies to meet the needs of new product types. Having a detailed of the latest product trends means PTI can launch technologies essential to the market at the optimum point in time.

The semiconductor industry is set for several years of continued growth. PTI will continue to develop innovative packaging and testing technologies to maintain our technological leadership in the global OSAT sector. At the same time, quality and production yields will be emphasized to provide the market and the industry with the different technologies required in each field. We aim to provide customers with the most competitive services in pursuit of joint growth.

## (2)State of Competition :

A comprehensive back-end packaging and testing capability means that PTI is more than capable of providing semiconductor customers with everything from Bumping, Wafer Sort, WLCSP, Wire Bond Package, Flipchip Package, System in Package, Panel Fan-out, 3DIC TSV, System Assembly, to Final Test services.

Once the wafer emerges from the foundry, PTI can provide customers with a one-stop shop for all semiconductor back-end services instead of having to line up different production sites and schedules. The comprehensive semiconductor back-end services offered by PTI encompasses conventional product packaging & testing as well as mass production based on the latest technologies. These are some of the reasons why PTI is so competitive in the semiconductor back-end sector.

In addition, other PTI advantage include technical sophistication, short production cycle, high production yields, and low production costs. PTI is willing to share our strength with the customers. For more than two decades, we have made customers our top priority and shared our strengths with our customers so that we can grow together.

In the future, as the demand for advanced packaging technologies continues to grow, PTI will not only maintain our leadership in memory packaging and testing but also see large, sustained growth in our logic and SiP business. PTI is now a world-leader in total semiconductor packaging and testing services.

## Revenue Annual Growth 2017-2022 of Taiwan OSAT Companies Ranking Among Global Top 10

Unit : NT million

Company/ Revenue	2017	YoY	2018	YoY	2019	YoY	2020	YoY	2021	YoY	2022
ASE Holding	290,441	36.8%	397,261	4.0%	413,182	15.4%	476,979	19.5%	569,997	17.7%	670,872
Powertech	59,632	14.1%	68,039	-2.2%	66,525	14.5%	76,181	9.99%	83,794	0.16%	83,927
KYEC	19,686	5.7%	20,816	22.7%	25,539	13.4%	28,959	16.58%	33,759	-17.26%	27,932
Chipbond	18,428	16.4%	18,725	9.0%	20,419	9.1%	22,275	21.58%	27,082	-11.34%	24,010
ChipMOS	17,941	3.0%	18,480	10.0%	20,338	13.1%	23,011	19.07%	27,400	-14.17%	23,517

Source : Market Observation Post System/ Relevant Financial Statements Organized by PTI

Note: ASE Holding consolidated ASE and SPIL started from Apr 2018.

## (3) Summary of Technological Research & Development

### 1.R&D Cost

Latest Annual R&D expenditure as followed

Unit : NT thousands

Item \ Year	2022
R&D Expenditure	2,462,430

2. Successfully developed technology or product :

(1) Packaging Solution Achievements:

- A. The method for using RDL first (chip last) for substrate and Fan-Out Panel Level Package (FOPLP) was successfully applied to the development of automotive SiP with embedded passive components and has now been fully validated by the customer.
- B. FOPLP method based on RDL with Line/Space 3/3um RDL was successfully developed, validated and applied to high-performance computing IC.
- C. SoC and High Bandwidth Memory HBM were successfully integrated through chip middle process for FOPLP. The technology can be used to meet the data processing and low-latency data transmission requirements of HPC/AI.
- D. LED and control IC were successfully integrated through chip middle process for FOPLP. Applications include AR/VR devices used in entertainment, healthcare, and education.
- E. The Chip Middle FOPoP architecture combines fan-out packaging with Through Silicon Via - Wafer-level CSP (TSV-WLCSP) to meet the requirements of wearable device applications.
- F. FOPLP method based on RDL with ultra-fine line/space was successfully developed, validated and applied to high-performance computing IC.
- G. Wafer reconstruction technology can integrate two or more types of IC with different functionalities into a single wafer with TSV-WLCSP. The advantages of small multi-IC modules match the demand for lightweight, thinness, compact size, high transmission rate and lower power consumption in consumer electronic products.
- H. High-density High Bandwidth Memory (HBM) made using TSV and high-precision die stacking processes.
- I. Successful development of TSV CIS CSP process for the mobile device, healthcare, security surveillance and automotive segments.
- J. Successful development and production of FCCSP products for 5G AP, Modem and RF-related applications.
- K. Successful development and production of HS-FBGA products for TV Chip and RF-related applications.
- L. Successful development and production of Wi-Fi-related Hybrid (DB, WB + FC) products.
- M. Successful development and production of FCBGA products for automotive IC.
- N. Successful development and production of FCCSP products for high-speed data transfer controller IC (PCIE).
- O. Successful development and production of FCBGA products for optical network controller IC (OTN).
- P. Successful development and production of 16 NAND die stacking + 2 Interface Chi for high-capacity SSD products.
- Q. Successful development and production of 8xDRAM + 8xNAND+Controller uMCP Hybrid (WB+FC) product for high-speed, high-capacity mobile communication products.
- R. Successful development and introduction of Antenna in Package (AiP) technology. A Radio Frequency (RF) laboratory was also set up to help customers accelerate the development and validation of their 5G high-frequency packaged products.

(2) Testing Solution Achievements:

- A. Testing services for WiFi 6E and BTC.



- B. PCIe Gen4 system-level testing services and hardware development.
- C. Testing and hardware development for High Density 3D-AND.
- D. Testing and development of related hardware for Teradyne IP750 CIS.
- E. Development of high-speed test board for Advantest T5503HS.
- F. Development of Thin package COK.
- G. Development of BI testing solutions and hardware for system-level IC.
- H. Development of anti-adhesion memory test jigs.

#### (4) Long-term and Short-term Business Strategy

Our Short-term and Long-term strategic business planning in management, production, sales & marketing and research & Development are outlined below

##### 1. Short-term business planning

- (1) Technological leadership is one of PTI's key business strategies. The diversification of semiconductor product applications is reflected in the packaging technologies they need as well. PTI will continue to develop new processes and technologies aimed at meeting the needs of the industry. An example of this is advanced packaging technology for CMOS Image Sensors (CIS). This is one of the products that PTI will be focusing on in the short-term.
- (2) Continue to reduce production lead time in order to provide speedy service for customers. Our main advantage lies in flexible production process offering high level of mobility. We will continue to reduce production lead time in order to provide speedy service for our customers.
- (3) Continue to provide integrated Turn-Key services  
Due to consideration in cost, up-stream wafer foundries continues to outsource IC assembly, packaging and testing to specialized assembly and testing facilities (OSAT). We are among the few companies capable of providing complete assembly, packaging and testing services in the country. In order to increase our competitive advantage in providing customer with more options and better service, we will continue to offer integrated Turn-Key services.
- (4) Explore foreign and domestic market and increase market share  
In addition to maintaining strong relationship with existing foreign and domestic customers, we will use our competitive advantage in flexible production process, high level of mobility and capability in providing Turn-Key services to develop new customer worldwide.

##### 2. Long-Term Business Planning

- (1) Emphasize long-term partnership with customer and supplier  
Through emphasizing long-term collaboration with up-stream and down-stream partners, we aim to become the trusted OSAT service provider providing our customer reliable quality and service. We will also develop strong collaborative partnership with our suppliers
- (2) Emphasis on long-term cooperation with suppliers  
Suppliers are an extension of PTI's production capabilities. Our suppliers for semiconductor equipment and materials have been crucial to the growth of PTI over the years. PTI will therefore continue to strengthen and expand our cooperation with suppliers so that we can all grow and succeed together on a foundation of mutual trust and benefit.
- (3) Promotion of digitization and digital optimization  
Digitization efforts based on AI/Big data will continue. RPA (process robots) will be introduced to process large quantities of repetitive missions in order to save manpower and improve productivity. Operating reports provided by BI (Business Intelligence) can



provide feedback on improvements to routine business processes. EDA (Engineering Data Analysis) not only offers routine project monitoring. The synergies from stacked technology enhance digital automation. Product yields will be increased to boost productivity.

(4) Continue to development next-generation packaging and testing technologies

PTI has always been on the cutting-edge of the industry in developing advanced packaging technologies that our customers need. The establishment of the packaging and testing R&D center in 2006 saw PTI become the industry leader in innovative R&D of new technology patents. The new technologies are then introduced into mass product at a suitable time and place. In the future, technology will continue to service as the foundation for sustained innovation. PTI will therefore continue to focus on the development of innovative technologies as well.

(5) Increase revenue contribution from Logic, Module(SSD) and Micro-electro-mechanical Systems(MEMS)

Through increasing customer and revenue in areas of Logic, Module (SSD) and (MEMS) we continue to diversify product risk and increase company scale.

## 2. Market and Product Sales Outlook

### (1) Market Analysis

#### 1. Primary area of product/service sales/provision

PTI primary business scope includes providing IC outsourced assembly and testing (OSAT) services in overseas as well as domestic market. As of 2022 revenue from domestic sales account for 29.93% of overall revenue while that of overseas markets account for 70.07%. PTI principle markets are located in Japan, Singapore, and North America.

Unit : NT Thousands

<b>Year</b> <b>Market</b>	<b>2021</b>	<b>%</b>	<b>2022</b>	<b>%</b>
Domestic	19,356,303	23.10	25,119,738	23.10
Export	64,437,269	76.90	58,806,997	70.07
Japan	25,796,097		27,189,539	
Singapore	19,099,286		11,349,663	
North America	12,546,898		13,728,399	
Europe	2,314,953		1,930,719	
China and Hong Kong	2,002,639		2,250,357	
Others	2,677,396		2,358,320	
Total	83,793,572	100	83,926,735	100

#### 2. Market Share :

Despite strong growth in 2021, the semiconductor packaging & testing industry saw a reversal in demand in 2022 and the number of orders began to shrink. Despite the slump in the market, we continued to refine our product technology and production capability. By adopting this strategy of robust development, we hope this will accelerate our growth and boost our market share once the economy recovers. PTI expects little change to the market shares of global professional packaging and testing companies in 2022. The Company will follow a strategy of robust development and continuous growth at all levels with the aim of gradually increasing our market share and maintaining steady growth.

#### 3. Market Supply and Demand Outlook and Growth Potential

In terms of the outlook for 2023, WSTS forecast indicated that the global semiconductor may

shrink by 4.1% to US\$556.6 billion in 2023. The semiconductor industry will continue to grow in the long-term however.

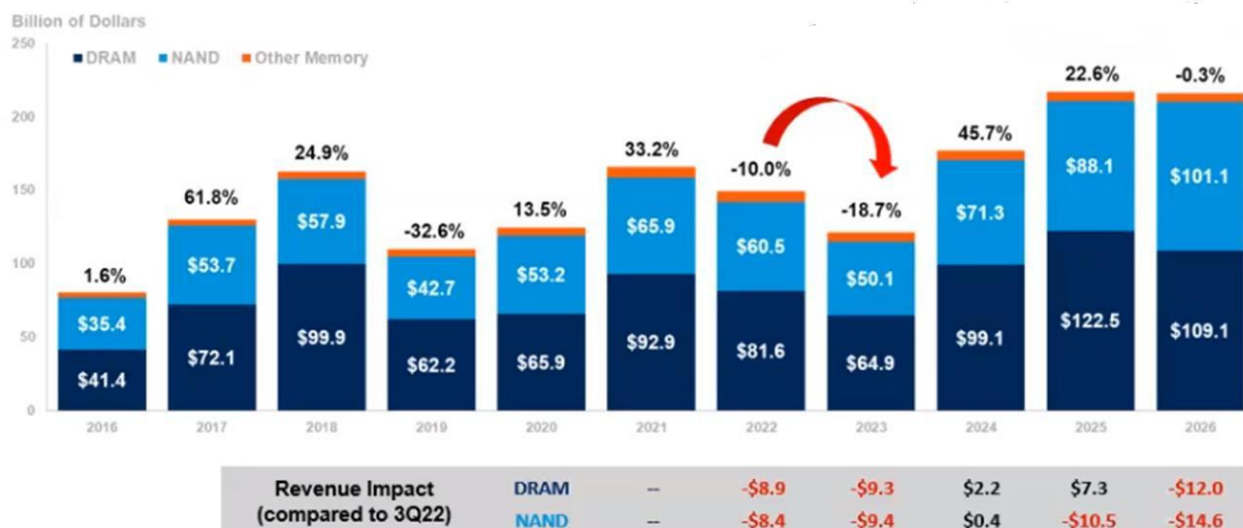
### WSTS Global Semiconductor Market Forecast

Fall 2022	Amounts in US\$M			Year on Year Growth in %		
	2021	2022	2023	2021	2022	2023
Americas	121,481	142,138	143,278	27.4	17.0	0.8
Europe	47,757	53,774	54,006	27.3	12.6	0.4
Japan	43,687	48,064	48,280	19.8	10.0	0.4
Asia Pacific	342,967	336,151	311,005	26.5	-2.0	-7.5
<b>Total World - \$M</b>	<b>555,893</b>	<b>580,126</b>	<b>556,568</b>	<b>26.2</b>	<b>4.4</b>	<b>-4.1</b>
Discrete Semiconductors	30,337	34,098	35,060	27.4	12.4	2.8
Optoelectronics	43,404	43,777	45,381	7.4	0.9	3.7
Sensors	19,149	22,262	23,086	28.0	16.3	3.7
Integrated Circuits	463,002	479,988	453,041	28.2	3.7	-5.6
Analog	74,105	89,554	90,952	33.1	20.8	1.6
Micro	80,221	78,790	75,273	15.1	-1.8	-4.5
Logic	154,837	177,238	175,191	30.8	14.5	-1.2
Memory	153,838	134,407	111,624	30.9	-12.6	-17.0
<b>Total Products - \$M</b>	<b>555,893</b>	<b>580,126</b>	<b>556,568</b>	<b>26.2</b>	<b>4.4</b>	<b>-4.1</b>

Note: Numbers in the table are rounded to whole millions of dollars, which may cause totals by region and totals by product group to differ slightly.

Source : 世界半導體貿易統計局 ( WSTS )

### 2016-2022 Global Memory Growth Estimation



Source: Gartner (Feb 2023) ; IEK

## 4. Competitive Advantages

PTI have grown to become one of the major OSAT service providers, delivering high quality, dedicated service and advanced technology for our customers. We continue to collaborate closely and maintain solid relations with our customers. Our competitive advantages are as followed.

(1) Solid Strategic Allies and Globalization

The IC OSAT sector is characterized by high level of collaboration with upstream wafer foundries. Consequently, profitability of assembly, packaging and testing service providers relies on solid relationship with customers. In the meantime, IC manufactures also chose long-term partnership with assembly, packaging and testing service providers due to confidentiality in product technology, product quality and production process. Such strategic alliance with concrete relationship of collaboration is beneficial for long-term development of the company.

(2) Turn-key Service

In response to rapid decline in IC sales prices, we offer Turn-key Service to our customers, including both assembly and packaging, as well as testing in order to reducing cost and risk in shipping process.

(3) Outstanding capability in development and production

PTI have been committed in developing new technologies while investing heavily in technological research and production process improvement. We have been proudly awarded many domestic and international patents, as well as technology license from multiple major international manufacturers, establishing our solid competitive edge within the industry.

(4) Investment in high precision automated equipment

In response to development of IC product towards increasingly higher performance, pin-count and density we continue to invest in high precision automated equipment from well-known Japanese and US vendors in order to satisfy customer needs and continuously improve our quality of service.

(5) Online automated customer service system

Our online automated customer service systems enable customer to track closely product status, production progress, and any potential problems. This facilitates swift problem resolution and product improvement while increasing added value for customer.

5. Supporting and Hindering Factors and Responding Strategy

(1) Supporting Factors :

**【Industry Background】**

① Competitive Advantage of Taiwanese Semiconductor Industry

Taiwan semiconductor industry encompasses a complete semiconductor industry structure from upstream IC Design and wafer foundries to downstream OSAT service providers. This vertically integrated chain of supply, consistent with industry development, contributes to establish the strong competitive position of Taiwanese semiconductor sector in the global market. Booming IC industry facilitated by rapid global development in electronics, information technology, communication technology, consumer electronics, optoelectronic industry, Artificial Intelligence (AI) and Internet of Things (IoT) will continue to support stable growth in OSAT sector.

② OSAT Sector Benefitting from Major Integrated Device Manufacturer (IDM) Outsourcing Trend.

Due to high capital investment of advanced production process, global IDM manufacturers continue to increase its outsourcing of wafer manufacturing, assembly, packaging and testing to Asia region with lower production cost. Taiwan, with its complete industry structure and dynamic vertical supply chain, is the most preferential outsourcing choice for international IDM manufacturers and IC Design Companies. Taiwanese OSAT sector also benefits from OEM orders.

**【Competitive Niche】**

① Strong Managing Team and Solid Strategic Alliance

Our major share-holders include well-known companies such as Kingston Group and Taiwan Toshiba Semiconductor, facilitating solid reputation and stable customer base. As our revenue continues to grow, support from our shareholders also ensures sufficient capital supply for our future operation and development. Furthermore, our management team is equipped with comprehensive working experience within the semiconductor sector and capability of making appropriate decisions according to market trend.

② Continued Development and Innovation

In response to rapid changes in semiconductor market, PTI is dedicated to technological development. In addition to developing new products, we continue to introduce new technologies through collaboration with our strategic partners. Our research and development team is equipped with capability in independent designing and developing testing software and hardware programs. In addition to continually developing testing program and improving testing equipment in areas of IC testing, we also continue to develop cutting edge technologies and services in respond to future mainstream IC market demand. Our business scope has extended into logic market from assembly, packaging and testing of memory products. Building on our leading advantage in assembly, packaging and testing for both memory and logic IC, PTI continues to expand its scope into 3D IC. In assembly and Packaging we have completed development in IC Chip-Stacking technology, Field Programmable Gate Array (FPGA) and Fan-Out Packaging technology, and have been rewarded many patents. We will also continue our effort in refining in material and production process.

③ Turn-key Service and Flexible Capacity

We able to provide our customer integrated turn-key service of IC assembly, packaging, testing and packing service in a single order, effectively reducing shipping time and cost. In addition, we are able to respond quickly to market and customer demand and swiftly expand and adjust our capacity accordingly through timely investment in advance equipment, providing our customer with most competitive solutions.

(2) Hindering Factor and Responding strategy

① Fluctuation in IC Industry in Connection with Economic Climate

Strategic Response :

A. Product Diversification

In addition to continually strengthening our memory assembly, packaging and testing quality and technology, acquisition of Greatek Electronic Inc. also contributed immensely to expansion into Logic market. Furthermore, our new production technologies such as copper pillar bump, Re-distribution Layer (RDL), Wafer Level CSP, MEMS and SSD continues to achieve customer qualification. Through product diversification we are able to mitigate risk of economic cycle as well as provide our customer greater range of assembly, packaging and testing services

B. Strengthening Collaboration with Customers

Establish long-term partnership with existing customers, establishing Powertech Semiconductor (Xian) Co. Ltd. and actively developing new customers to achieve stable and sufficient level of capacity utilization.

C. Increase Market Scope

With Akita facility as production basis in Japan, supported by Tera Probe, Inc., PTI will establish comprehensive chain of supply in Japan.

② Erosion of Gross Profit by Increasing Material Cost

Strategic Response :

#### A. Inventory reduction

In response to persistently weak end-user demand and high inventory levels, we will continue to communicate with customers, accelerate the disposal of expired materials, and actively negotiate with suppliers on outstanding orders for raw materials to realize the effective control of inventory and accelerate inventory reduction.

#### B. Lowering of production costs

We will continue to inquire, negotiate and compare prices for raw materials, change our product structure, improve yields, propose alternative materials, and continue refining our production processes to mitigate the impact of higher costs.

#### C. Emphasis on added value

We will continue to put ourselves in the customer's position by providing a service with good quality, short delivery times, and responsive to customer requirements. Efforts will be focused on the development of new packaging, assembly and testing techniques to help customers bring competitive products to the market at the right time.

#### D. Building long term partnership with suppliers

We will continue to build long term partnership with equipment and material suppliers to secure stable supply. Create a win-win for both sides.

### ③ Manpower shortage

#### Strategic Response :

A. Increase staff welfare and bonus incentives to attract talent and encourage cohesion among staff members. We also design staff training program according to long-term development strategy to support progress for both company and staff member.

B. We will continue to improve productivity and dependence on manpower through actively introducing advanced automated equipment in conjunction with upcoming Industrialization 4.0.

C. Actively engage with universities to expand industry-academia cooperation and promote the industry-academia integration for the cultivation of new talent.

D. To support the middle-level technical talent plan for migrant workers proposed by the Ministry of Labor, we will provide blue-collar migrant workers with technical training that promotes them to middle-level technical talent. The initiative will stabilize our production workforce to mitigate the effects of an aging population and shortage of semiconductor expertise.

### ④ Intensifying competition in the semiconductor back-end.

Semiconductor technology plays a critical role in the ever-changing field of advanced technology. In the past, most attention in the semiconductor supply chain was concentrated in the wafer foundry sector. In the post-Moore's Law age, semiconductor wafers produced by advanced processes must be complemented by advanced back-end packaging technology to realize their true performance. Foundries and PCB makers are now making a rush to enter the packaging sector. In response, PTI will continue to strengthen our R&D efforts, carefully assess our investments in new technologies and production capacity, and build solid partnerships with customer and suppliers. We will also strengthen the integration of our services from wafer testing through to the shipping of the final product to maintain our commanding advantage in the

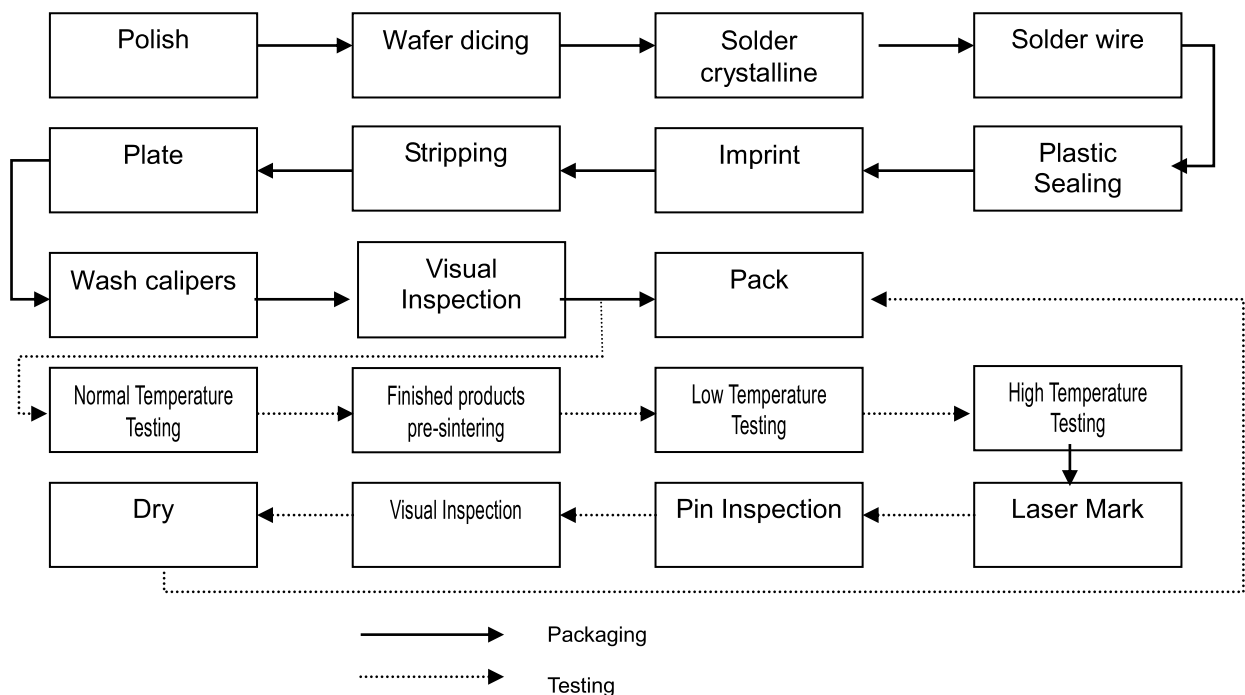
semiconductor back-end sector.

## (2) Important Applications and Production Process of Main Products

### 1. Product Applications

Main Products or Services	Important Applications or Functions
IC Assembly	To turn Wafer into complete single product through sawing, mounting, wire bonding, molding, trimming/forming, and other processes of the Integrated Circuit (IC).
Final Test	Placing the IC into different environment such as normal, high, or low temperature to test and classify according to test conditions specified by customers. These steps ensure the product conforms to the quality and stability demanded by customers.
Burn-In	Using Burn-In process forced the IC operate in extreme environments to accelerate aging of the products and screen out the unqualified, to ensure reliability of products.
Laser Mark	Printing the name of company and product details on the IC.

### 2. Production Process



### (3) Suppliers of Major Raw Materials

Our company mainly provides IC processing for our customers. The suppliers of the key raw materials used in packaging operations are listed below:

Main Raw Materials	Main Suppliers
Lead-Frame	Shinko Electric Ind. Co., Ltd. Nichiden Seimitu Kogyo Co., Ltd.
Substrate	Kinsus Interconnect Technology Corp. Shinko Electric Ind. Co., Ltd. Simmtech Co., Ltd. Samsung Electro-Mechanics Co. Zhen Ding Tech. Inc. Phoenix Pioneer Technology Inc. Shennan Circuits Co. Ltd. Nan Ya Printed Circuit Board Corp.
Die Attach Film (DAF)	Showa Denko Materials Co., Ltd. Nitto Denko Corp. LINTEC Corp. Henkel AG & Co.
Gold Wire	Nippon Micrometal Corp. TANAKA Kikinzoku Kogyo K.K.
Compound	Chao Young Corp. Taiwan Hitachi Asia Pacific Co., Ltd. KYOCERA Asia-Pacific Pte. Ltd. Chang Wah Technology Corp. KYOCERA Corp.



(4) Information of suppliers' who commanding 10% and plus of annual purchasing volume in any year over the last 2 years.

1. List of major supplier accounted for over 10% of total purchase over the last 2 years.

Unit: NT\$ Thousands

Year	2021				2022				As of 2023 Q1			
Rank	Name	Amount	Percent of total amount sold (%)	Relation with Issuer	Name	Amount	Percent of total amount sold (%)	Relation with Issuer	Name	Amount	Percent of total amount sold (%)	Relation with Issuer
1	A	3,235,128	10.68	None	A	3,685,031	11.04	None	A	684,278	15.14	None
2	B	2,549,265	8.42	None	B	2,845,635	8.53	None	B	86,914	1.92	None
2	Others	24,507,386	80.90		Others	26,846,059	80.43		Others	3,747,024	82.94	
	Net Amount Sold	30,291,779	100		Net Amount Sold	33,376,725	100		Net Amount Sold	4,518,216	100	

Reason for changes: PTI revenue increase contributed by capacity expansion, and customer demand increase.

2. List of Major Customers:

	2021				2022				As of 2023 Q1			
Rank	Name	Amount	Percent of total revenue %	Relation with Issuer	Name	Amount	Percent of total revenue %	Relation with Issuer	Name	Amount	Percent of total revenue %	Relation with Issuer
1	A	21,803,359	26.02	Related Party	A	20,882,528	24.88	Related Party	A	3,756,362	23.86	Related Party
2	B	16,881,041	20.15	None	B	18,688,423	22.27	None	B	3,585,031	22.78	None
3	C	234,296	0.28	None	C	9,651,686	11.50	None	C	864,866	5.49	None
4	D	9,345,484	11.15	None	C	660,035	0.79	None	C	73,673	0.47	None
	Others	35,529,392	42.40		Others	34,044,063	40.56		Others	7,460,592	47.40	
	Net Revenue	83,793,572	100		Net Revenue	83,926,735	100		Net Revenue	15,740,524	100	

Reason for changes: (1)1Q2022 Customer C sold core business to customer D as the major reason for revenue decline in 1Q22.

(5) Production Quantity & Value Table 2021-2022

Quantity Unit: 1,000 wafers Amount Unit: NT\$ Thousands

Year Production Units	2021			2022		
	Capacity	Quantity	Amount	Capacity	Quantity	Amount
IC Packaging	17,710,837	16,394,153	39,007,211	17,829,582	13,070,734	38,333,692
IC Testing	11,086,219	9,763,136	8,030,200	11,593,541	7,490,729	8,322,870
Module	205,469	154,842	6,838,249	226,089	140,444	6,857,107
Wafer Level Packaging	1,325	1,049	2,920,116	1,249	1,008	2,928,336
Wafer Level Testing	2,731	2,036	4,401,182	2,174	1,335	4,626,065
Total	29,006,581	26,315,216	61,196,958	29,652,635	20,704,250	61,068,070

(6) Sales Quantity & Value Table 2021-2022

Quantity Unit: 1,000 wafers Amount Unit: NT\$ Thousands

Year Sales Quantity & Value	2021				2022			
	Domestic Sales		Exports		Domestic Sales		Exports	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
IC Packaging	9,516,610	13,147,707	6,822,403	40,186,756	6,628,689	19,808,940	6,286,078	32,700,734
IC Testing	6,374,306	2,453,143	3,415,341	10,255,393	4,235,611	1,948,894	3,157,530	10,895,809
Module	87,854	304,927	45,193	7,370,216	79,764	443,622	35,036	8,012,111
Wafer Level Packaging	348	1,522,641	689	2,738,342	400	1,670,245	590	2,460,196
Wafer Level Testing	1,040	1,895,720	1,126	3,846,364	661	1,242,326	1,203	4,683,903
Others	—	32,165	—	40,198	—	5,711	—	54,244
Total	15,980,158	19,356,303	10,284,752	64,437,269	10,945,125	25,119,738	9,480,437	58,806,997

### 3. Employee Status

Table for Employees Number, Average Age, Average Years of Service, and Distribution of Education for Last Two Years

Year		2021	2022	As of Mar 31, 2023
Employees number	Administration and Management Staff	1,403	1,450	1,407
	R&D Engineering Staff	2,484	2,632	2,624
	Operators	7,648	7,823	7,494
	Total	11,535	11,905	11,525
Average Age		35.81	36.18	36.49
Average Years of Service		6.62	6.88	7.19
Education Distribution in %	Doctorates	0.05	0.04	0.04
	Masters	7.74	7.74	7.92
	College and Universities	71.40	71.07	71.11
	High School	20.23	20.28	20.20
	Below High School	0.58	0.77	0.73

### 4. Environmental Protection Expenditures

The total amount of losses (including reparations) and penalties due to environmental pollution caused in most recent year and as of the publication date of this annual report, and an explanation of future responses (including improvement measures) and possible expenditures.

(1)The total amount of losses (including reparations) and penalties due to environmental pollution caused as of most recent year and publication of annual report.

1. The Environmental Protection Bureau of Hsinchu City Government issued a notice (Fu-So-Huan-Kong Letter No. 1100189390) on December 17, 2021 stating that a system review conducted on November 12, 2021, found that the designated air pollution specialist for PTI Plant P8 was also designated as firefighting management personnel at Plant P8 between October 24, 2018, and October 23, 2020. This violated Article 34, Paragraph 4, of the Air Pollution Control Act, and Article 5 of the Regulations Governing the Exclusive Unit or Personnel of Air Pollution Prevention. A fine of NT\$200,000 was subsequently issued on February 18, 2022.

Corrective actions: Another employee was designated as the firefighting management personnel for Plant P8 on October 24, 2020. The assignments of all related dedicated personnel at each plant were also reviewed, with all plants notified of the need to ensure the proper employment of specialist personnel.

Preventive measures: Established guidelines to ensure that dedicated personnel are assigned to dedicated roles at each plant. Register was set up to prevent duplicate assignments and employee education

strengthened.

2. A notice was issued by the Environmental Protection Bureau of Hsinchu County on November 23, 2021 (Huan-Ye Letter No. 1103403097) stating that an investigation into illegally dumped waste at land lot No. 1176-2 of Siayuan section, Jhudong Township, on May 3, 2021, determined that PTI's Hukou plant (Plant P2) had failed to contract with a licensed disposal company for the removal of the scrapped wastewater tank and sludge from its wastewater treatment facility. This violated Article 28, Paragraph 1 of the Waste Disposal Act, and a fine of NT\$120,000 was issued on February 15, 2022.

Corrective actions: The site was immediately cleaned up and rehabilitated to the EPB's satisfaction.

Preventive measures: Compliance training and education organized for contractors and PTI employees.

- 3.3. A letter (Fu-Shou-Huan-Kong No. 1110124624) from the Bureau of Environmental Protection Hsinchu City Government was received on August 23, 2022, regarding its audit of Hsinchu plant (P8) on August 5, 2022. On-site measurements of the scrubbing liquid in the scrubber tower (A001) found a pH value of 3.75. This was not in compliance with the operating range of pH 7 ~ 11 specified in the fixed pollution source operating permit of scrubber tower A001 and violated Article 24, Paragraph 2, of the Air Pollution Control Act. A fine of NT\$130,000 was subsequently issued in writing on October 5, 2022.

Corrective actions: The cause of the problem was a malfunctioning pH meter resulting in abnormal readings. Readings are now in the permitted range after the meter was replaced and calibrated.

Preventive measures: A dedicated portable pH meter for testing the scrubbing liquid in the scrubber tower was purchased by facilities management, the scrubbing liquid is now tested at least once a week. Random testing will be carried out by environmental safety personnel using test strips or the portable pH meter. The unit responsible for the pollution prevention equipment will also undergo environmental protection education.

- (2) Expected Environmental Protection Capital Expenditures for Coming Years  
Intended purchase of pollution prevention equipment or capital expenditure is listed below:

Unit: NT\$ Thousands

Item/Year	2023	2024	2025
Greenhouse gas examination and consultant fees	1,160	1,160	1,160
Wastewater treatment and emission fees	41,820	42,820	43,840
Wastewater treatment fees	45,870	47,840	48,850
Environmental protection monitor & exam fees	2,070	2,100	2,200
Waste material disposal fees	94,265	94,265	94,265
Expansion of wastewater treatment equipment	47,600	22,000	22,000
Air pollution examination fees	2,685	2,685	2,685
Establish air pollution treatment equipment	11,580	11,580	11,580
Air pollution prevention fees	1,575	1,575	1,575
Total Expenditure Amount	248,625	226,025	228,155

## 2. Maintenance Measures

### (1) Management Program:

The Company conducts the following programs to implement its responsibilities on environmental protection:

- A. Air Pollution Control: Set up air pollution control equipment VOCs. Regularly exam the air quality to meet Environmental Protection Bureau standards. Hsin Chu Science Park Plant I and II both adopted Best Available Control Technology (BACT) to eliminate the impact on the environment.
- B. Recycle Waste Water: Utilize waste water recycle system to reduce waste on resources and re-use the recycle water to save and protect the water resources.
- C. Water Pollution Control: all facilities waste water must be treated and meet official standard before release back to the water system. Internal monitoring system and regular measure & calibration were in place.
- D. Waste Disposal: The entire disposal must meet environmental protection regulations. Enhance the recycle and re-use rate by well-classify materials.
- E. Work with suppliers: Regularly inspects suppliers to meet environmental protection regulations.
- F. Climate Change and Energy Control: the company has established Greenhouse Gas Control Procedures followed the guidance of ISO14064-1 and Task Force on Climate-related Financial Disclosures (TCFD) to reduce impacts and financial risks of extreme weather.
- G. Voluntary Environmental Monitor Program: Program including waste water,

noise, air quality, waste material impact on environment to effectively control the company operations impact on the environment.

H. Allowance Permit: Consistently monitor the company operations meet the latest environmental standards.

(2) Environmental management performance

A. Air pollution control:

- a. The Company emitted 93.6 tons of Volatile Organic Compounds (VOCs) in total during 2022. The reporting and payment of pollution control fees for use of VOCs were completed through the EPA Air Pollution Control Fee for Stationary Sources System every quarter as required by law.
- b. Regular monitoring data provided by qualified external contractors indicated that concentrations of polluting emissions from all factories were lower than the regulatory threshold.
- c. The Best Available Control Technology (BACT) was adopted by the Hsinchu Science Park (HSP) Factory and HSP Factory 2 for treating VOCs. Environmental impact is reduced through the Zeolite concentrator rotor/regenerative incinerator.

B. Waste water treatment and process recovery:

- a. Regular monitoring of discharge water quality indicated that concentrations of all pollutants was lower than the regulatory threshold.
- b. Total waste water discharge from all PTI sites in amounted to 2,115,966 tons in 2022, an increase of 124,906 tons compared to 2021. The increase in total waste water (sewage) discharge compared to 2021.
- c. PTI Taiwan achieved a 87.61% recovery rate for water used in the packaging process in2022.

C. Waste disposal:

- a. Waste was recycled for reuse if possible during waste disposal to turn rubbish into usable resources; The recovery and reuse of waste liquid produced by raw materials at the PTI HSP Factory reused of 350.72 tons recycle material in 2022.
- b. PTI Taiwan recycled 1,066.00 tons of waste in 2022, On average, 88.83 tons were recycled each month.
- c. Waste disposal/treatment/recycling contractors undergo field/written audits or random tracking of their vehicles every year. A total of 46 regular audits were conducted for waste contractors during 2022.

D. Energy conservation and greenhouse gases

- a. Preference was given to high-efficiency models as well as green refrigerants with lower global warming potential (GWP) during the selection of factory equipment to reduce GHG emissions.
- b. ISO 50001 Energy Management System certification was obtained by PTI in 2022.
- c. Total power savings in 2022 amounted to 11,435,224 kWh, or the equivalent of 41,166.8 GJ, and met the target of reducing energy consumption by 1%.
- d. Green building design is now introduced during the planning of new factories to reduce the consumption of energy and resources.

## 5. Labor Relations

### (1) The Implementation Status for Employee Welfare Policy, Training and Continue Education

PTI values the salary and benefits for its employees and offers lawful benefits. According to the bonus payment specifications, annual earnings minus taxes, surplus and dividends are then appropriate for employee bonuses. Employees can also enjoy benefits provided by the Employee Welfare Committee. With PTI family day, movie screenings and year end banquets to relieve stress from work and bond with coworkers.

1. Insurance: All PTI employees are insured with free general group insurance (including life, accident, medical, cancer, and other insurances). In the spirit of caring for employees as well as their families, the spouse and children of employees also include in the free group insurance.

#### 2. Health and Safety:

(1) Through professional medical staff and health management, PTI conducts health promotion and health management for employees. All plants are staffed with professional medical personnel to monitor the health of employees. We collaborate with professional medical organizations to conduct health examinations for employees.

(2) We conduct risk management and assessment for resumption of work for individuals with high health risks. We also offer health information and courses.

(3) PTI prevent the disease triggered by abnormal workload by self-reporting the workload, work in day/ night shift, prolonged abnormal workload, irregular schedule, frequent business trips, or tense working conditions. These employees undergo health risk evaluation, overwork risk evaluation, and Framingham risk evaluation. On-site doctors evaluate the results, talk with the employees, and if necessary, change job positions, decrease working hours, or take other administrative management to maintain employee health.

(4) In 2004, PTI obtained the OHSAS 18001 occupational health and safety management certificate. To prevent occupational injuries and accidents and ensure the safety and health of our workplace, we also devised our "Environmental Safety and Health Policy".

### **Environment, Safety and Health Policy**

- Communicate ESH policy to employees, customers, and related groups.
- Comply with environmental protection, safety and health legislation/regulations and customer requirements.
- Consult and engage with workers and their representatives on the prevention of injuries, diseases, and accidents as well as damage control.
- Actively promote energy efficiency and waste reduction initiatives in response to international trends in environmental protection and the organization's current circumstances.
- Engage in continuous review and improvement to set higher targets for safety, health and environmental management, and improve their overall performance.

3. PTI uses the "Psychological Counseling System" to let employees unload burdens and listened to themselves in this ever changing world of responsibilities. Care-free conversations during the Psychological Counseling System to heal inner wounds, rejuvenate, see a different world, and create a healthy work environment.

4. Company Trips: Employee Welfare Committee has unscheduled company trips to for coworkers to bond with each other. In 2022, we offered vouchers of a value of NTD\$3,000 to each employee. PTI Taiwan also signed contract with renowned travel agencies to offer package tour or coupon to employees, allowing them to achieve the



balance between commitments to work and relaxing lifestyles.

5. Family Day/ Large-scale events: Family Days and other large-scale leisure events were organized by the Employee Welfare Committee on a regular basis. PTI employees and their dependents are all part of the PTI family and the hosting of Family Day events create opportunities for employees and families to have fun together, and for employees to bond with each other. The balancing of employee and social welfare warm employees' hearts and bring them more happiness outside of work. The evolving COVID-19 pandemic meant PTI had to make rolling adjustments to event formats during the course of 2022. Large physical gatherings were held as "online events" instead to ensure that there is no interruption in our support and invigoration of employees. During 2022, we continued to target the three elements of "Care, Health, Technology" by creating a friendly workplace that feels "Promising, Thriving, Inspiring" to employees. By stimulating the boundless creativity of our employees, we can motivate them at and away from work so they can craft their own exciting PTI life.
  6. Employee Club Activities: We value the balanced development of work and life of our employees. PTI's Employee Welfare Committee plans a variety of events throughout the year and encourages employee participation to relieve stress from work, bond with coworkers, develop physical and mental health, cultivate cultural knowledge, promote social welfare, and thus become an employee in the technology industry with LOHAS. We have 11 employee clubs with 457 members.
  7. Ask for Leave: In accordance with Labor Standard Act, PTI offers holiday and annual leave to employee. Regular reports are provided to supervisors to assist employee has a balanced work and life.
  8. Birthday/ Funeral and Other Benefits:
    - (1) Birthday star is given a coupon equivalent of NTD\$500 to celebrate his/her birthday. Employees with matters of material contingencies are offered a grant from NTD\$1,000 to NTD\$10,000.
    - (2) PTI offers NTD\$1,000 value of cash or equivalent coupon, gift on annual Labor's Day.
    - (3) PTI offers coupon/ gift equivalent of NTD\$1,000 during Dragon Boat Festival, Mid-autumn Festival etc.
    - (4) Gifts are offered to employees with 3, 5, 10, 20 years of seniority.
  9. Maternity Subsidies and Other Services: A NTD\$2,000 of subsidies per child birth are provided to employee or its spouse. Also, PTI provides related application services for labor insurance. PTI cares about the employees and their interaction with their families. By having the employee welfare committee signing designated kindergartens and child-care facilities in the areas where employees reside, we offer options of pre-school care for the children of our employees, so that the employees can excel in both their work and their family life without any worries.
  10. Food and Housing: (1) PTI has outsourced catering services with subsidies for employees. Employee only has to pay a small amount to enjoy lavish meals. Catering Committee has been established since 2008 to enhance the quality and welfare of employees. (2) PTI offers dormitory option for long distance commute employees.
  11. On-Job-Training: To ensure a diverse talent, we "listen to needs" to consider internal and external issues. PTI has committed to meet the demand of employee learning, organizational development, and company policies, which has led to PTI's unique "need and resolution oriented" operational model and training system, where PTI enhances the managerial abilities of executives, improve employee competence, and ensure the sustainable growth of the company. PTI has been promoting virtual training courses and e-books for continue education especially during the COVID-19 periods.
- (2) The Implementation Status for employee retirement and pension system

## 1. Retirement Condition

Condition	Details
A. Voluntary	A、Individual who served in the company over 15 years and over 55 years old. B、Individual who served in the company over 25 years. C、Individual who served in the company over 10 years and over 60 years old.
B. Mandatory	A、Individual who was over 65 years old. B、Individual who certified by public medical institutes with unfit physical or mental condition to work.

2. PTI Taiwan follows the Labor Standards Law and the Labor Pension Act in implementing employee retirement regulations and established a labor pension supervision committee to appropriate the full amount of pension contribution for employee to apply for pension after retirement. The insurer of Annuity Insurance is an insurance company approved by the central competent authority and the insured of the Annuity Insurance contract is the employer who will insure from the same insurer. The workers are the insured persons and beneficiaries. The Annuity Insurance premium to be paid by the employer each month may not be less than 6% of the monthly wages of the worker. In 2022, the listed total amount contributed to pension was NT\$426,933,714.

## (3) Negotiation between Management and Labor and the Implementation of Employee Rights

### 1. Employee Care:

PTI values the opinion of its employees. We offer various channels to encourage communication between employees and the management, so that we thoroughly understand employees' satisfaction with management and welfare systems and maintain good labor-management relationship. Since our foundation, PTI has enjoyed harmonious labor-management relationship. There has been no occurrence of labor-management disputes that resulted in losses. The possibility of future labor management disputes leading to losses is extremely low. In addition, with quarterly labor management meetings and welfare committee meetings, employees can voice their opinions on specific issues and reach agreement with the company through discussions in the meetings, thus perpetuating effective communication channels. PTI also respect and protect employees' rights of freedom of speech and freedom of assembly and association. The quarterly labor management meetings are negotiated by labor representation voted by employees.

### 2. Comprehensive Communication Channels

We have established comprehensive channels for diverse, two-way, and open communication. By helping employees communicate their opinions to the management, their concerns can be effectively taken care of. Our fair, confidential, and efficient handling procedure resolves employees' concerns while maintaining good labor management relationship. We have also established sexual-harassment prevention measures, employee psychological counseling services, and rewards and discipline regulations. We are always listening to employees' opinions. Anonymous or otherwise, we always exercise confidentiality and fairness in handling such information. All forms of retribution are protected against, so that employees can express their concerns without fear.



#### (4) Status of Violation of Labor Standards Act :

Penalty date	Penalty No.	Violated regulation:	Content of violated regulation	Penalty description
Date of inspection: 2022/4/19 Date received: 2022/5/18	Fu-Lao-Zi No. 1113903519A	Paragraph 2, Article 38 of the <i>Labor Standards Act</i>	Annual paid leaves from the preceding paragraph are to be arranged by workers. The employer, however, in the light of urgent needs of the business operation or personal factors of workers, may consult and make adjustments with workers.	Fine of NT\$20,000
Date of inspection: 2022/12/22 Date received: 2023/3/1	Fu-Lao-Zi No. 1123930898	Paragraph 1, Article 36 of the <i>Labor Standards Act</i>	A worker shall have two regular days off every seven days. One day is a regular leave and the other one is a rest day.	Fine of NT\$50,000 (Note)

Note: The violation took place in the 2022 fiscal year and the amount of the fine was issued in the 2023 fiscal year.

## 6. Information and Cyber Security Management

### (I) Information Security Risk Management Structure

The “Information Security Committee” (Infosec Committee) was established by the Company as a mission-based organization. The unit reports directly to the President according to the PTI organization chart. The top managerial officers in the unit make up the Infosec Committee. The Committee is responsible for the establishment, operation and maintenance of the information security management system, and for regularly briefing the Risk Management Committee on the state of information security governance. The Infosec Committee is convened once a year but may also be

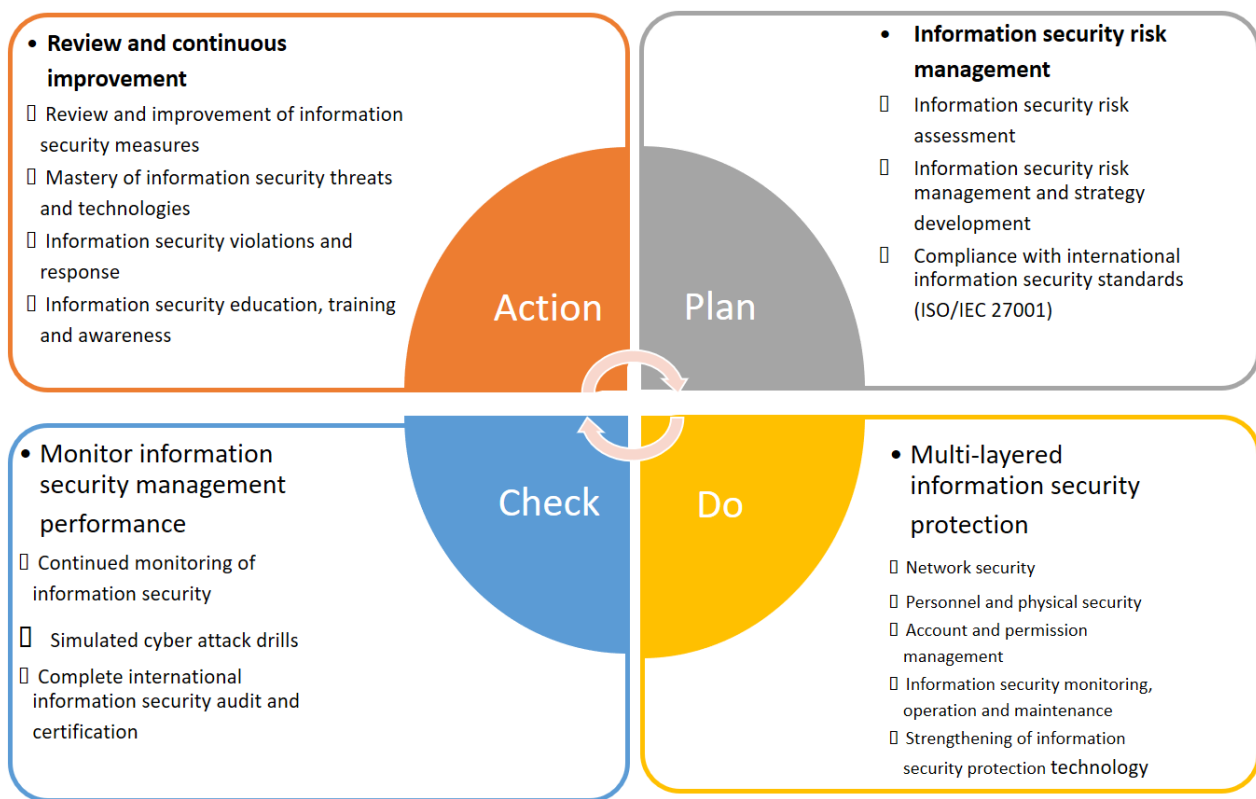
convened when necessary in response to the needs of information security risk management. ISO 27001 certification has been obtained by PTI and internal controls based on the standard put into place. A variety of methods including management review, internal audit, risk assessment, corrective and preventive measures were used to establish an information security management mechanism, strengthen information security protections, and enhance the standard of information security. To ensure the proper implementation of cybersecurity management, a dedicated information security department has been set up to assist with the upgrading and enforcement of cybersecurity policy.



## (II) Cybersecurity Policies

The PTI Cybersecurity Policy is defined as “compliance with the relevant laws and regulations, protection of information assets relating to the Company’s business and information systems, as well as protection of confidential Company and customer information so they are not exposed to the risk of tampering, disclosure, damage or loss due to external threats, or their improper management and use by internal personnel. To enforce effective information security management, the “Plan-Do-Check-Act” (PDCA) model set out in the ISO/IEC 27001:2013 specifications for the development, maintenance, continuous improvement and documentation of an information security management system. This included laying down of principles for the functions of the management organization, document record management, and various information security control measures to ensure the effective protection of information assets on which important company business is conducted.

Information security risk management and continuous improvement structure:



### (III) Specific Management Plans

The following cybersecurity measures have been implemented by PTI to prevent and mitigate damage from cybersecurity attacks:

1. Strengthen network firewalls and network controls to prevent the spread of computer viruses between machines and sites
2. Introduction of malicious network behavior detection system and upgrade network security monitoring strategy
3. Account activity logs are retained for an appropriate length of time, and schedule regular reviews of account authorization logs.
4. Continue to evaluate the purchasing of information security equipment for hacker protection and maintain the effective of operation of such equipment
5. Strengthening and effective tracking of information security protection technology for confidential data
6. Organizing of periodic information security training and social engineering exercises
7. Organizing of periodic penetration testing and vulnerability scans
8. Implementation of corporate continuity of business exercise plan and periodic execution o BCP exercises for information systems to reduce damage from information security incidents.

#### (IV) Input of Information Security Management Resources

PTI is continuing to invest in information security related fields. The following key accomplishments were made in the promotion of cybersecurity:

1. All new hires must complete the information security training course before they start work. All employees must complete two online information security training courses and exams each year. Information security training was conducted for 24,060 people and total duration was 7,827.33 person-hours.
2. No-notice e-mail social engineering exercises and social engineering awareness training is conducted on a quarterly basis. The link in the e-mail was clicked in less than 3% of cases.
3. Information security insurance has been purchased every year since 2020 to prevent serious financial or property damage from accidents, and to protect the interests of customers and investors.
4. PTI has continued to pass ISO 27001 audits and certifications by an independent third-party since 2016 to maintain the effectiveness of our information security management mechanism (certification is currently valid from November 19, 2022, through to October 2, 2025).
5. PTI received the 2022 TCSA Information Security Leadership Award
6. Third-party threat intelligence is incorporated by PTI into our external information security risk assessments and management. Information security maturity at PTI has been ranked as A for three consecutive years by the information security evaluation management tool Security Score Card and through Bitsight certification.

(V) Estimates of any damages or loss as the end of Mar 2023 cause by information security misconducts: None.

## 7. Major Contracts

Contract Classification	Contract Company	Contract Duration	Main Contents	Limitations of Terms
Outsource Services Contract	A Company	Jun 2019 ~	Packaging and testing services	Non-disclosure agreement
	F Company	Dec 2019 ~ Dec 2023	Packaging and testing services	Non-disclosure agreement
	I Company	Dec 2019 ~ Dec 2023	Packaging and testing services	Non-disclosure agreement
	S Company	Mar 2022 ~ Dec 2025	Packaging and testing services	Non-disclosure agreement
Asset Acquisition Contract	Chuan Ya Marble Co. Ltd.	Mar 2022 ~ Jan 2024	Land and facility acquisition	Non-disclosure agreement
Bank Loan	CTBC Bank	Sep 2021 ~ Sep 2024	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	Mega International Commercial Bank	Sep 2022 ~ Sep 2025	Medium-term credit loan	None
		Oct 2021 ~ Oct 2026	Medium-term credit loan	None
	Yuanta Commercial Bank	Sep 2021 ~ Sep 2025	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	KGI Bank	Dec 2020 ~ Dec 2024	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	E.Sun Bank	Sep 2017 ~ Sep 2032	Building Construction	None
		Sep 2017 ~ Sep 2024	Building Construction	
		Jul 2021 ~ Jul 2028	Machinery & Equipment Loan	
	Hua Nan Bank	Jul 2022 ~ Jul 2024	Medium-term credit loan	None
		Sep 2021 ~ Aug 2026		
	First Bank	Oct 2022 ~ Oct 2026	Building Construction	None
		Dec 2021 ~ Dec 2028	Medium-term credit loan	



Contract Classification	Contract Company	Contract Duration	Main Contents	Limitations of Terms
	Bank of Taiwan	Nov 2012 ~ Nov 2027	Building Construction Loan	None
		Aug 2021 ~ Aug 2031		
		Oct 2019 ~ Oct 2024	Machinery & Equipment Loan	
		Jun 2020 ~ Jun 2025		
		Aug 2021 ~ Aug 2028		
	Taiwan Cooperative Bank	Dec 2021 ~ Dec 2028	Machinery & Equipment Loan	None
	Shin Kong Bank	Jul 2021 ~ Jul 2025	Medium-term credit loan	None
	Chang Hwa Bank	Dec 2021 ~ Dec 2028	Machinery & Equipment Loan	None
	Taishin Bank	Dec 2022 ~ Dec 2025	Medium-term credit loan	Commitment to maintain a certain ratio between the assets & liabilities and net worth
	Land Bank of Taiwan	Aug 2020 ~ Aug 2023	Medium-term credit loan	None
	HSBC	Sep 2021 ~ Feb 2025	Medium-term credit loan	None
	MUFG Bank	Mar 2021 ~ Mar 2024	Medium-term credit loan	None