



臻鼎科技控股  
Zhen Ding Tech. Holding

# Zhen Ding Technology Holding (4958 TT)

## 2022 Analyst Day

June 27th, 2022



# Safe Harbor Notice

- Zhen Ding Technology Holding's statements of its current expectations are forward looking statements subject to significant risks and uncertainties and actual results may differ materially from those contained in the forward-looking statements.
- Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events, or otherwise.

# Zhen Ding (ZDT) At a Glance

  
**#1**  
**PCB Manufacturer**  
**Worldwide**

**2006** Founded  
(Former Foxconn Advanced  
Tech, 1999)

**Taoyuan, Taiwan**  
Headquarters



**44,300**  
Employees (2021 Average)  

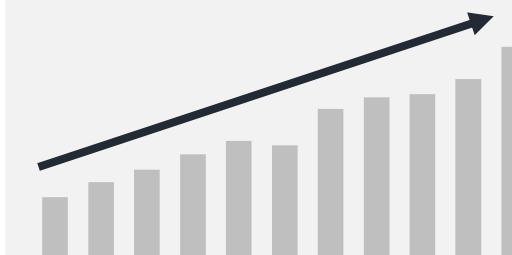

**22** Facilities  
Located in  
Mainland China,  
Taiwan, India

**NT\$155.0 Bn**

Revenue in 2021  
(+18.1% YoY)

**+13%**

2011-2021  
Revenue CAGR



**1,288**

Accumulated Valid Patents

**92%**

Invention Patents

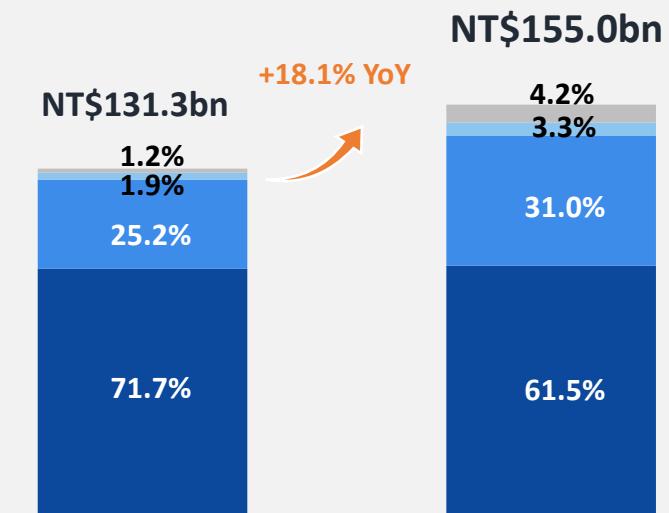
**NT\$114.6 Bn**

Market Cap as of  
May 31st, 2022

**16.9%**

10Y Average ROE

**Revenue Breakdown – By Applications**



**2020**

Automotive Radar/Base Station/Server/Others  
IC Substrate  
Computers and Consumer Electronics  
Mobile Communication

**2021**



## Why Invest in ZDT?

1

### **World's largest PCB manufacturer with stable long-term growth:**

ZDT has become the world's largest PCB manufacturer since 2017. We have achieved a 13.3% revenue CAGR in the past ten years (2011-2021).

2

### **Leverage One ZDT synergies to further widen the market share gap:**

With One ZDT as the core strategy, we will continue to drive steady growth by leveraging the synergies from one-stop shopping. ZDT's global PCB market share was 6.8% in 2021, and we aim to increase it to 10% by 2030.

3

### **Aggressive expansion in IC substrate, driving both revenue and profit growth:**

ZDT plans to invest NT\$60 billion capex for IC substrates in the next four years, with NT\$15 billion per year. We aim to grow our IC substrate revenue by >50% per year in the next four years, and strive to become one of the top five global IC substrate suppliers by 2030.

4

### **Global manufacturing footprint:**

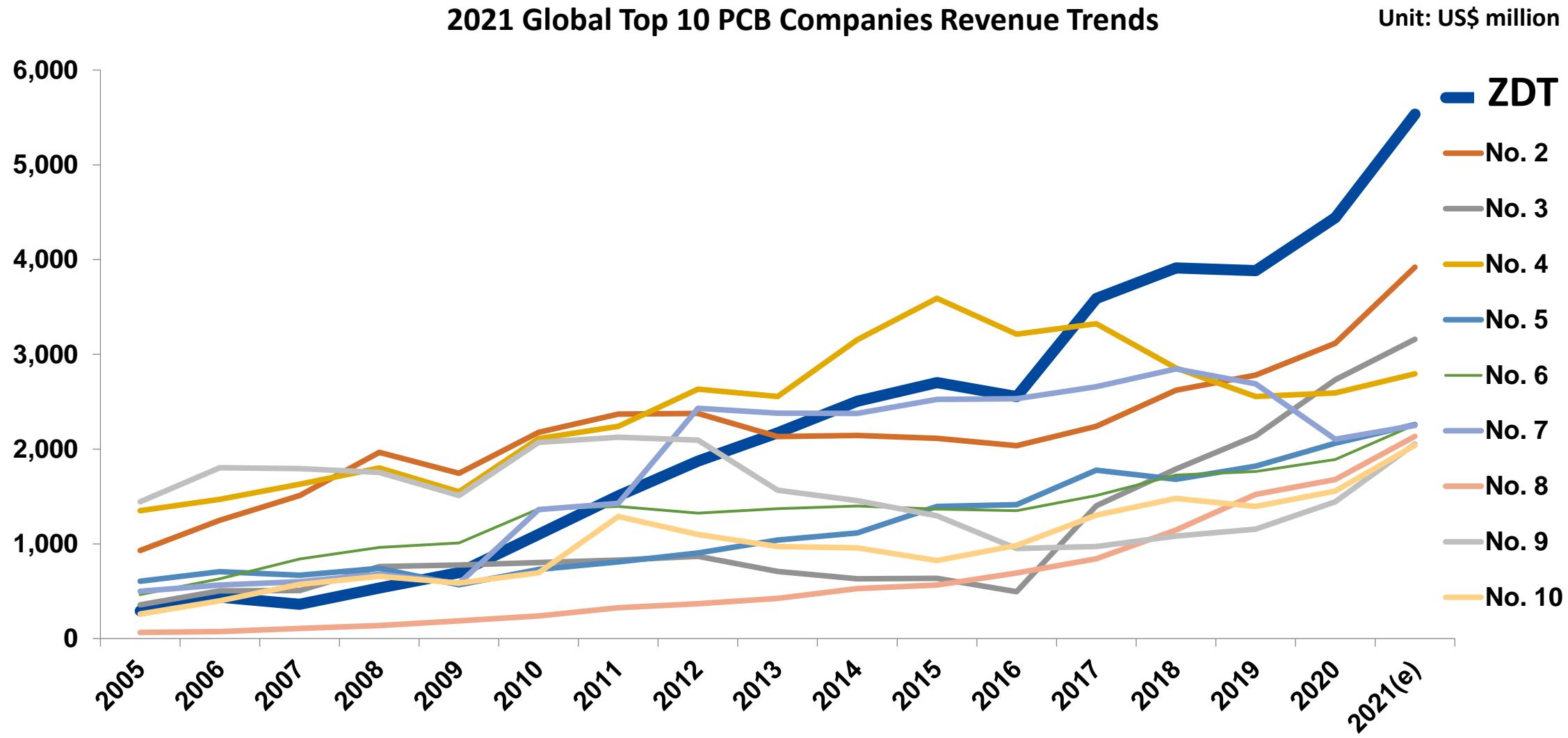
In addition to three major manufacturing campuses in Mainland China, ZDT also owns manufacturing plants in Taiwan and India. In the future, ZDT will keep expand its global manufacturing bases to serve diversified customer needs.



**World's Largest PCB Manufacturer with Stable  
Long-term Growth**



# ZDT Has Maintained Robust Revenue Growth

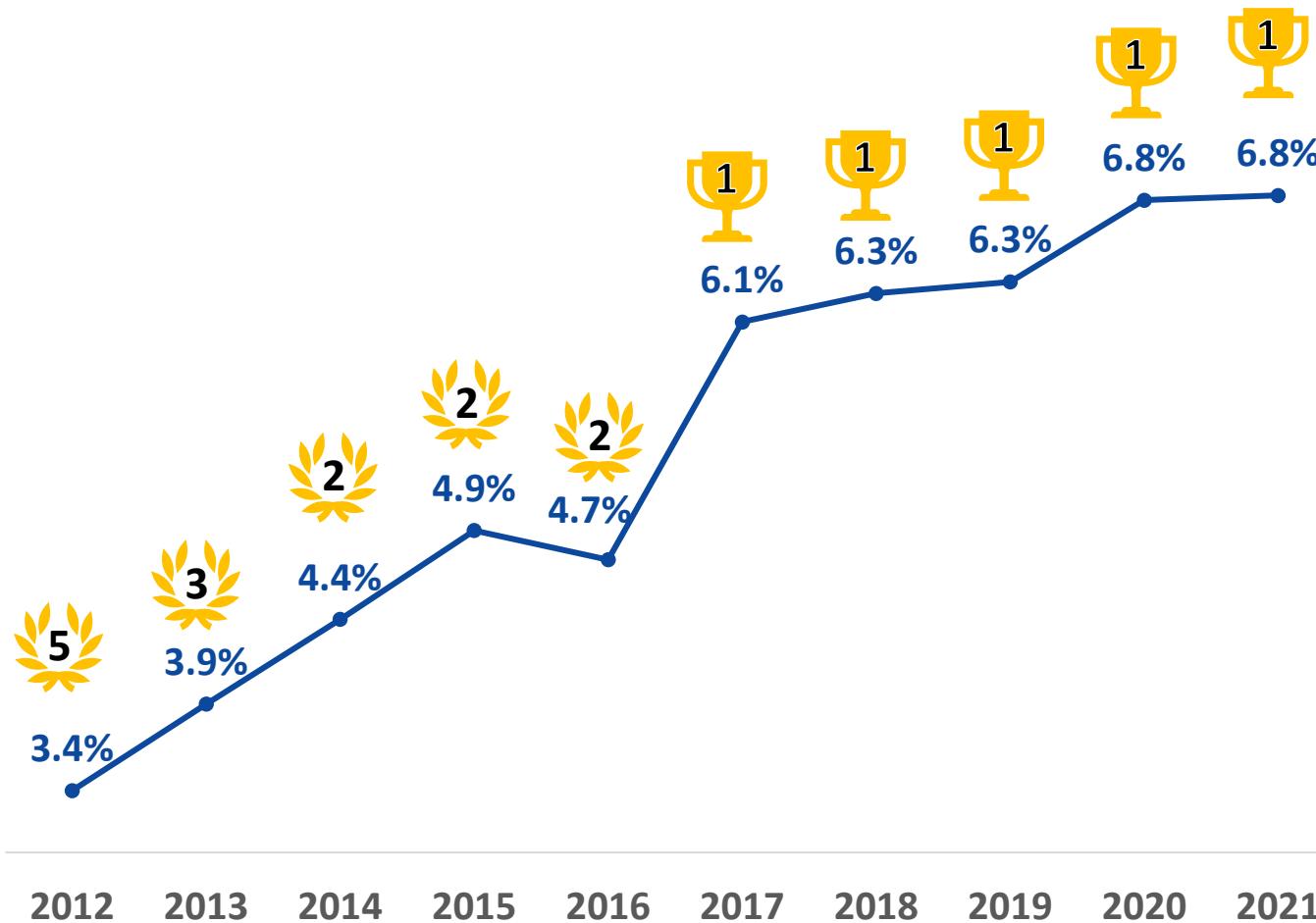


Source: NT Information; Prismark (2022/02)



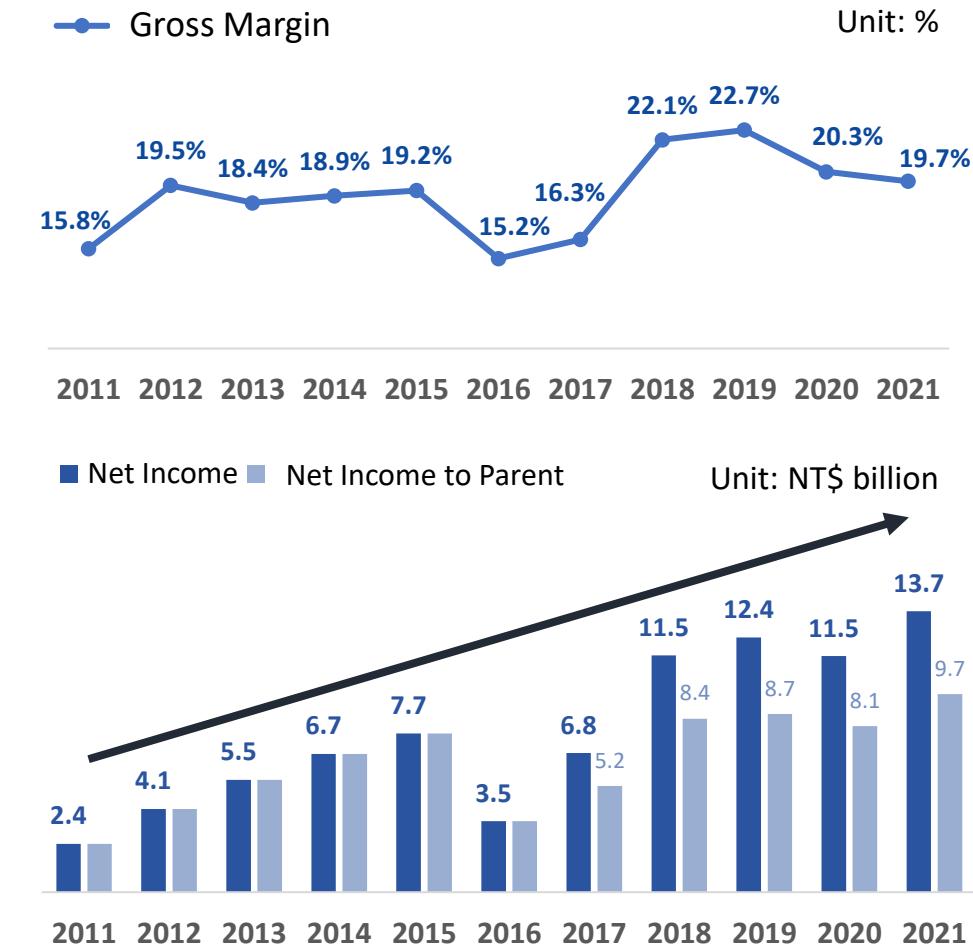
# Market Share Gain with Stable Profitability

## ZDT: Continued Market Share Gain in the Global PCB Market



Source : Prismark

## Stable Profitability





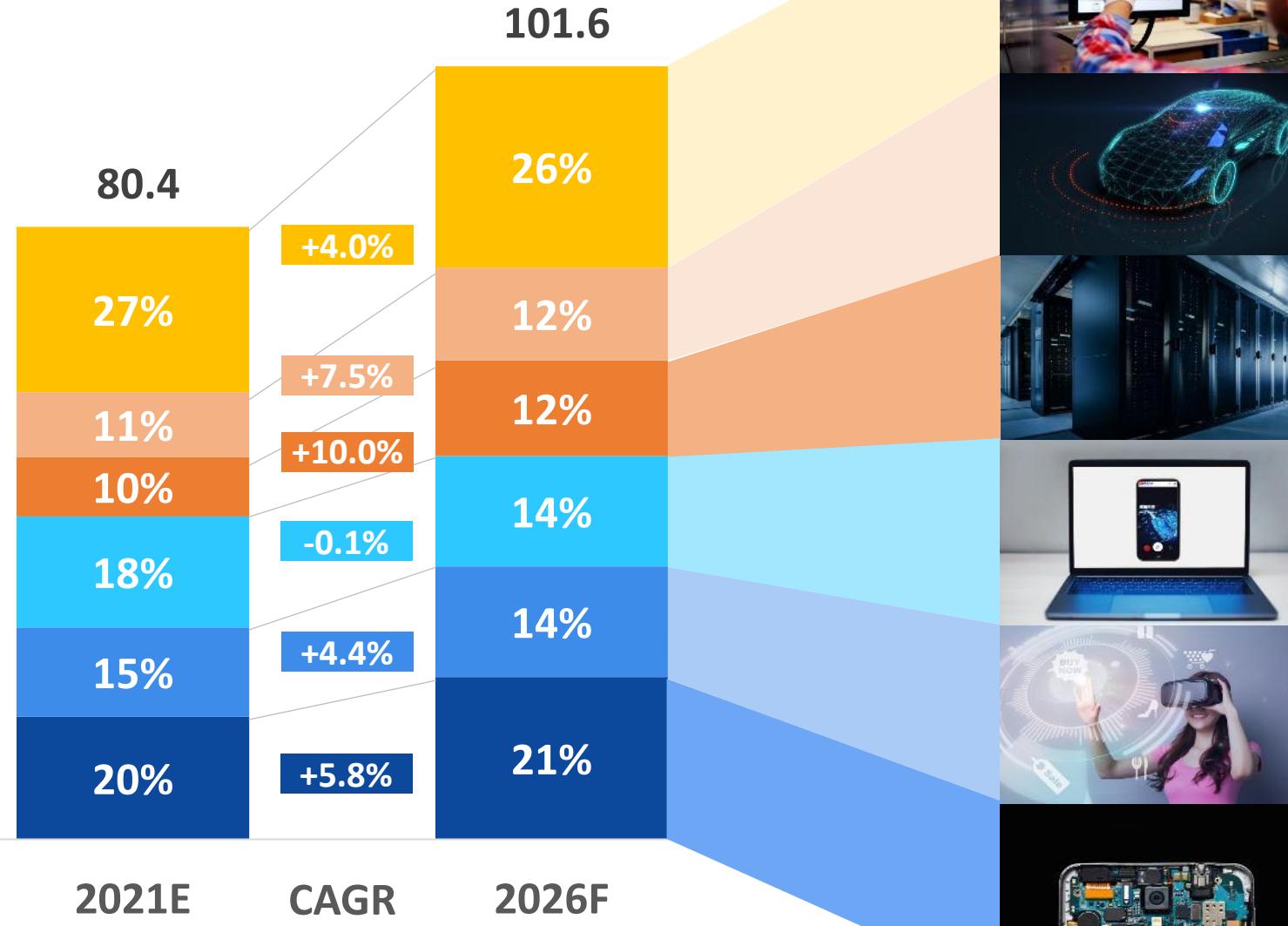
## Leverage One ZDT Synergies to Further Widen the Market Share Gap

Aim to Reach 10% Global PCB Market Share by 2030

# Global PCB Market: All Applications will Grow, Except for PC

## Global PCB Market Value

Unit : US\$ billion



Source : Prismark (2022/02)

## Others

Wired Infrastructure / Wireless Infrastructure / Other Computer / Industrial / Military / Aerospace / Medical



## Automotive

Camera Module / Light Control Module / ADAS / BMS

## Server/Data Storage

## PC

## Consumer

TV / Wearable / AR/VR / Smart Home / Game Console / Digital Camera

## Mobile Phone



# Four Key Applications to Drive Growth in PCB Industry



Foldable Phone



Metaverse

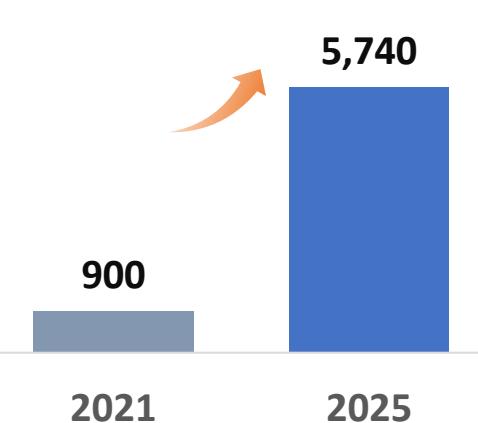


High-Performance Cloud Computing Technology

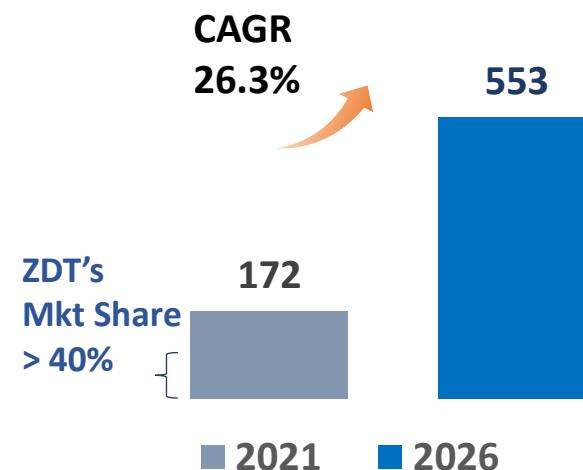


Intelligent Internet of Vehicles (IoV) Ecosystem

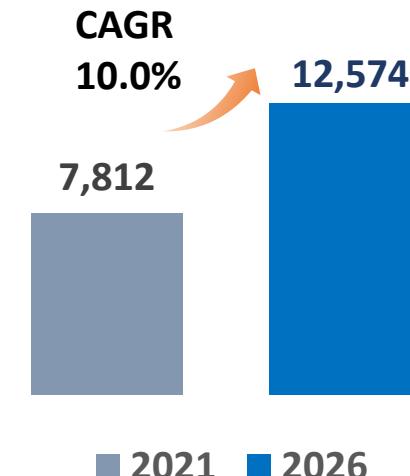
Global Foldable Phone Market  
(10 thousand units)



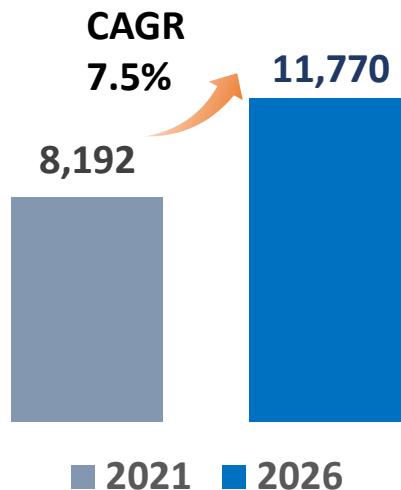
AR/VR Headset PCB Market  
(US\$ million)



Server/Storage PCB Market  
(US\$ million)



Automotive Electronics PCB Market  
(US\$ million)



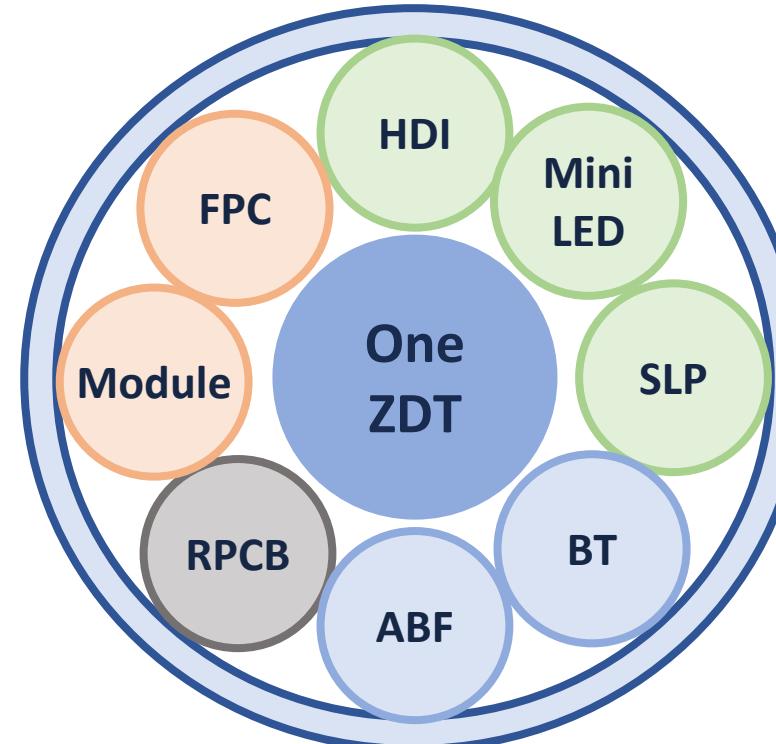
# One ZDT: One Stop Shopping Synergies

## FPC (+Module)

- 5G Applications
- AR/VR Metaverse
- New Energy
- Intelligent Vehicles
- Next-gen Display

## RPCB(+Base Station + Automotive PCB + Server)

- High Performance Computing
- 5G Base Station
- Next-gen Radar PCB
- Intelligent Vehicles
- High-end Server & AI



## HDI(+ SLP+Mini LED)

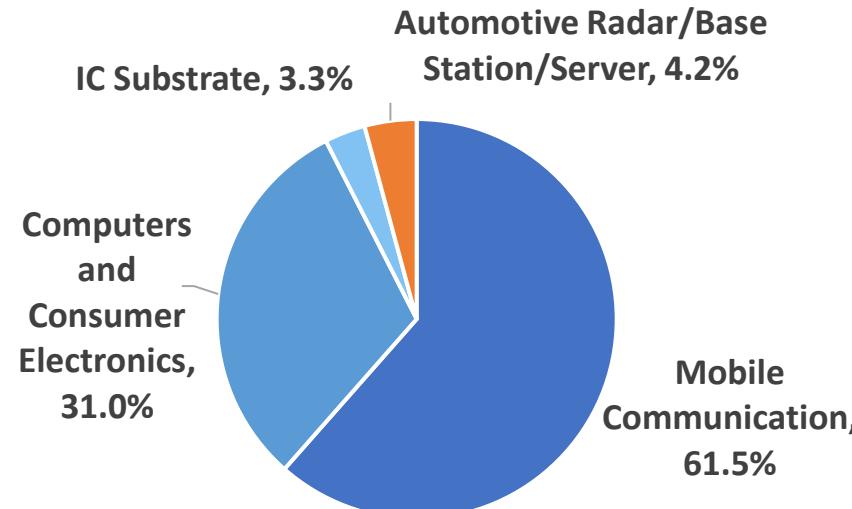
- Advanced HDI, SLP
- NB, Automotive HDI
- 5G AiP & SiP
- AR/VR Metaverse
- Mini LED/Micro LED

## IC Substrate (BT+ABF)

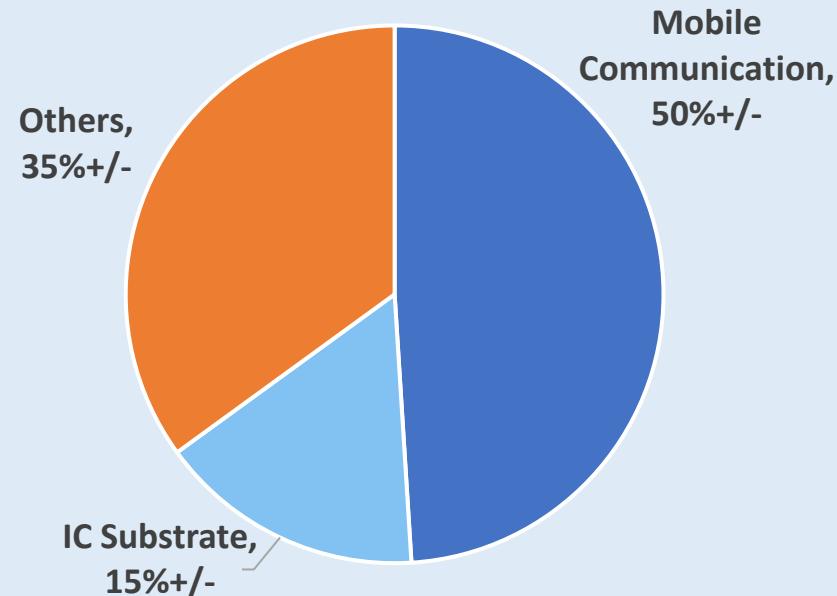
- 5G Chips
- Cloud HPC
- Server & AI
- AR/VR Metaverse
- Intelligent Vehicles

Supply chain management is getting more complex. Customers focus on supply chain integration, instead of seeking the lowest cost through division.

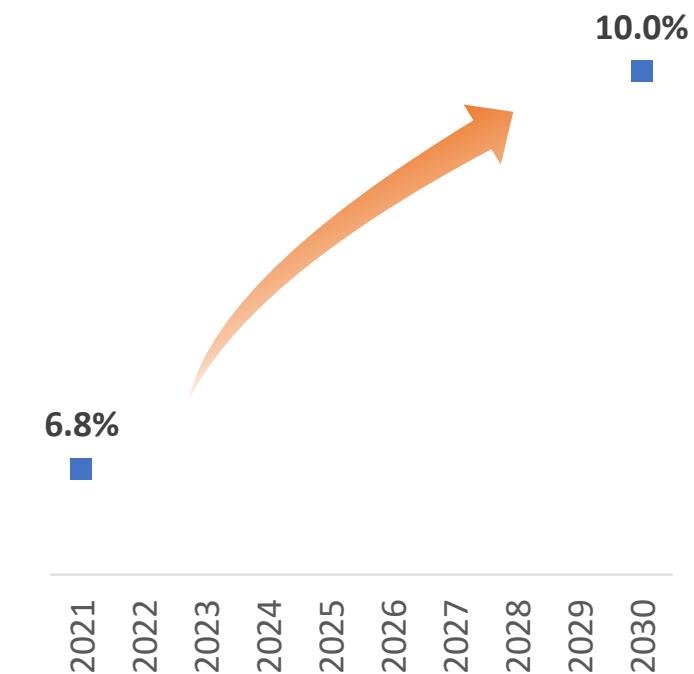
## 2021 Revenue by Application



## 2025 Target Revenue by Application

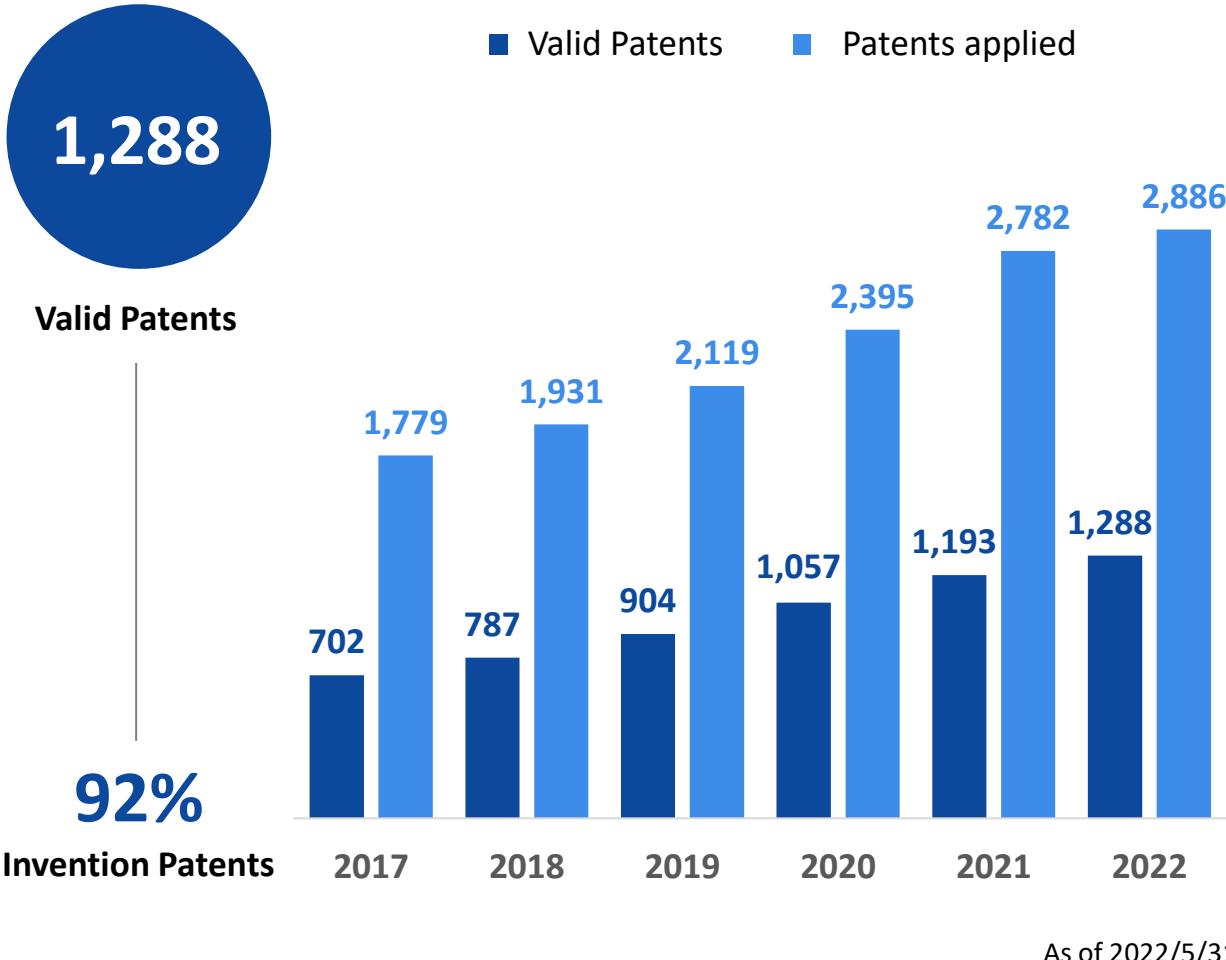


## Aim to Reach 10% Global Market Share by 2030

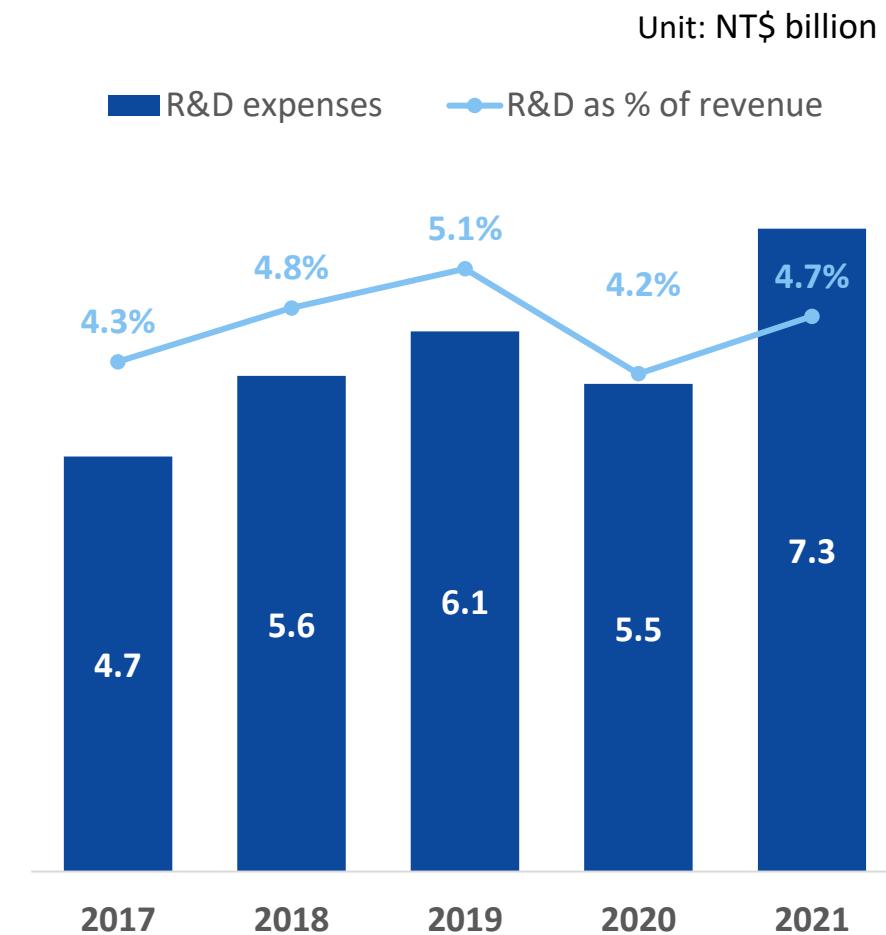


# Increase # of Valid Patents, Further Strengthen R&D Capability

## ZDT's Accumulated Valid Patents



## ZDT's R&D Expenses





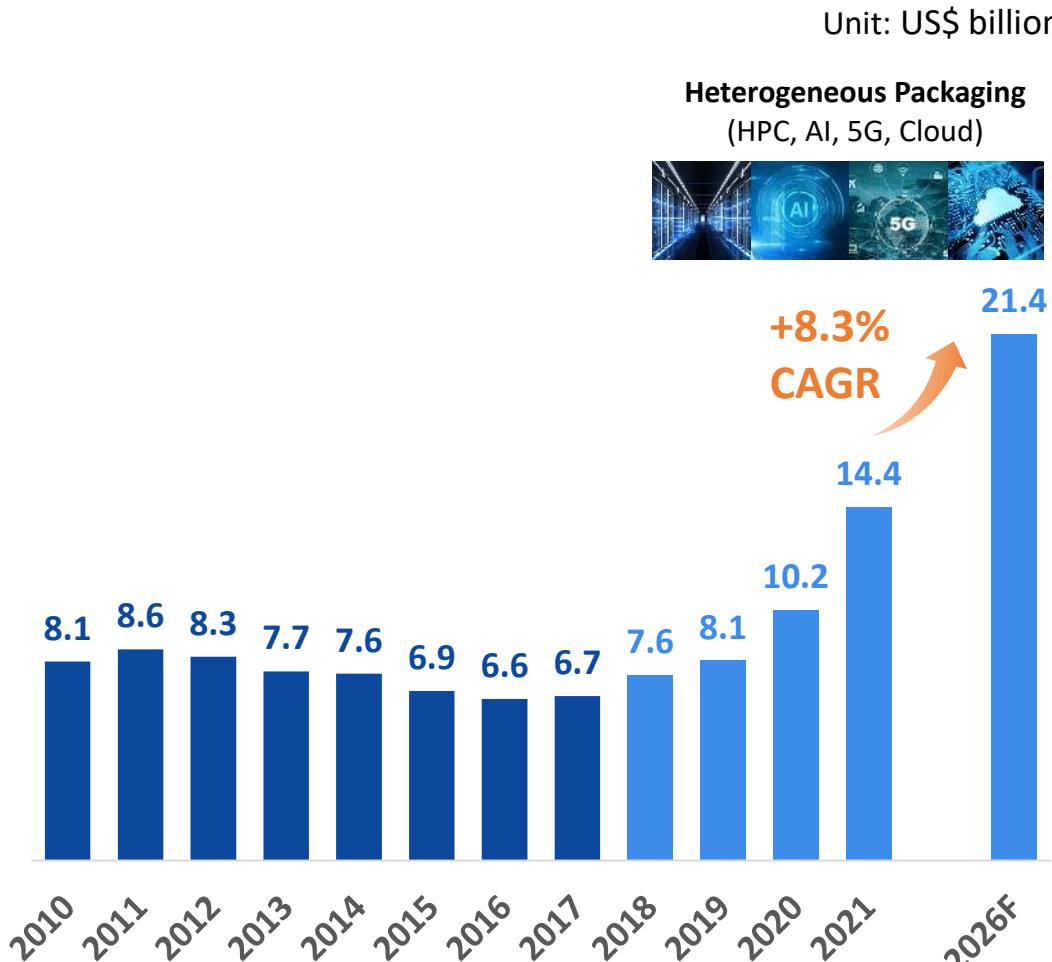
## **Aggressive Expansion in IC Substrate, Driving Both Revenue and Profit Growth**

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Aim to Become One of the Top Five in the World by 2030

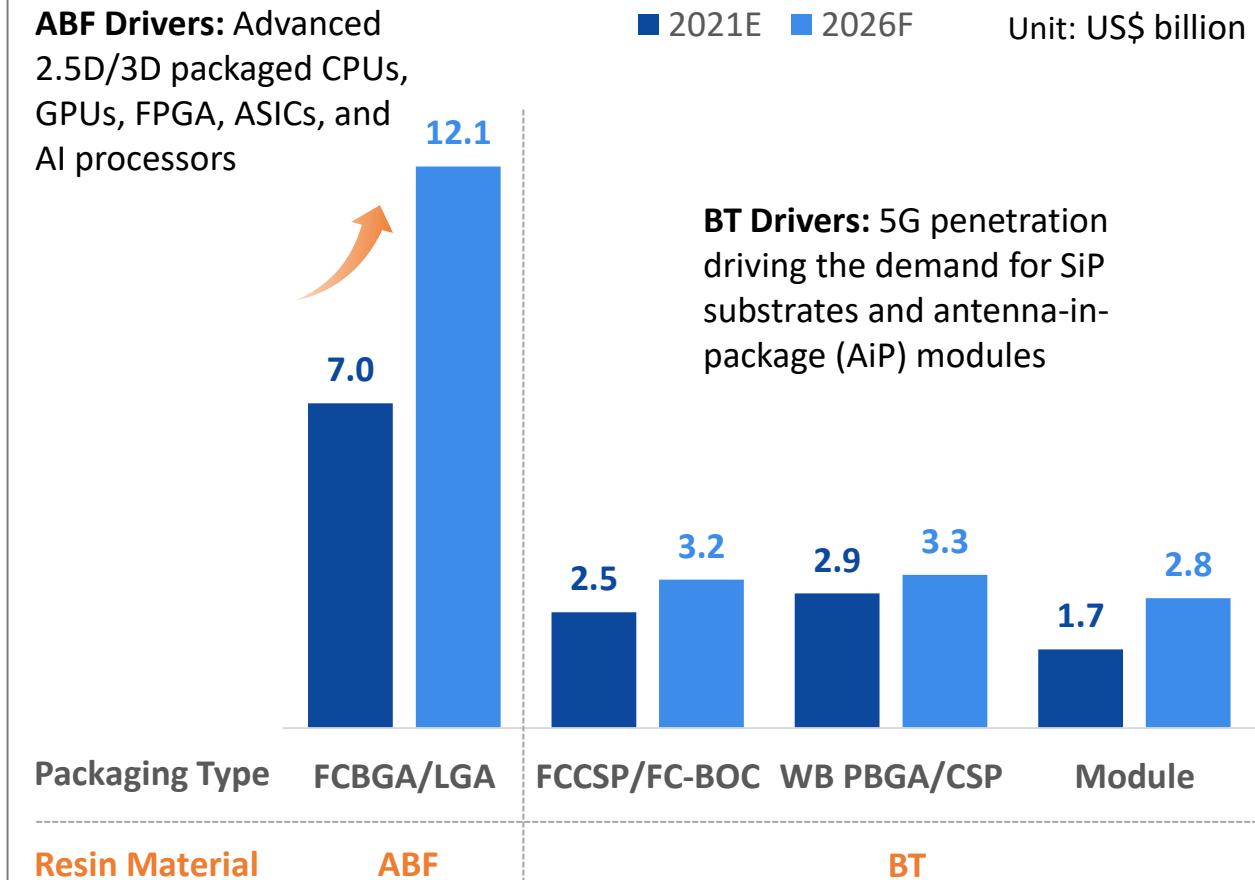
# IC Substrate Demand Will Continue to Grow in the Next Five Years

## Global Package Substrate (ABF+BT) Market Value



Source: Prismark (2022/05)

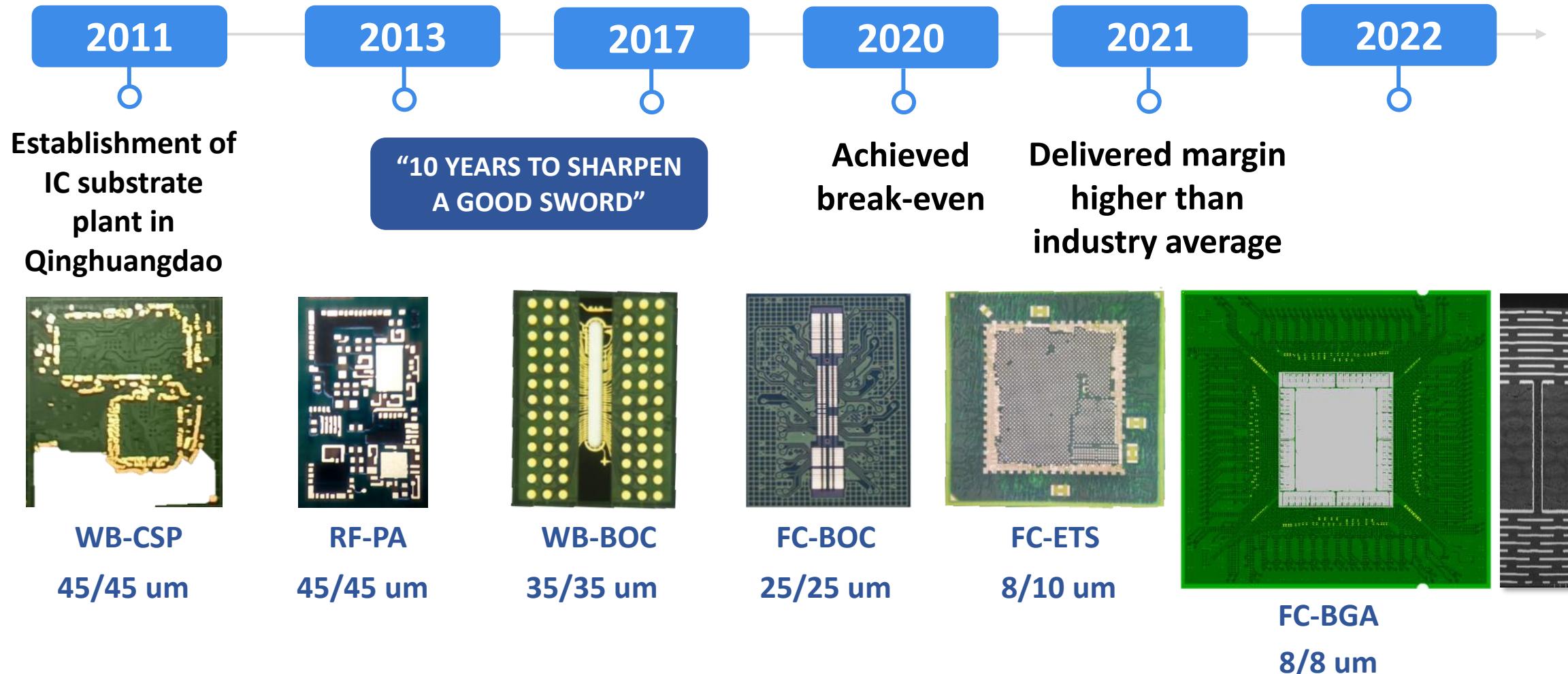
## Global Package Substrate Market by Product Type



Source: Prismark (2022/02)



# ZDT's IC Substrate Development Path



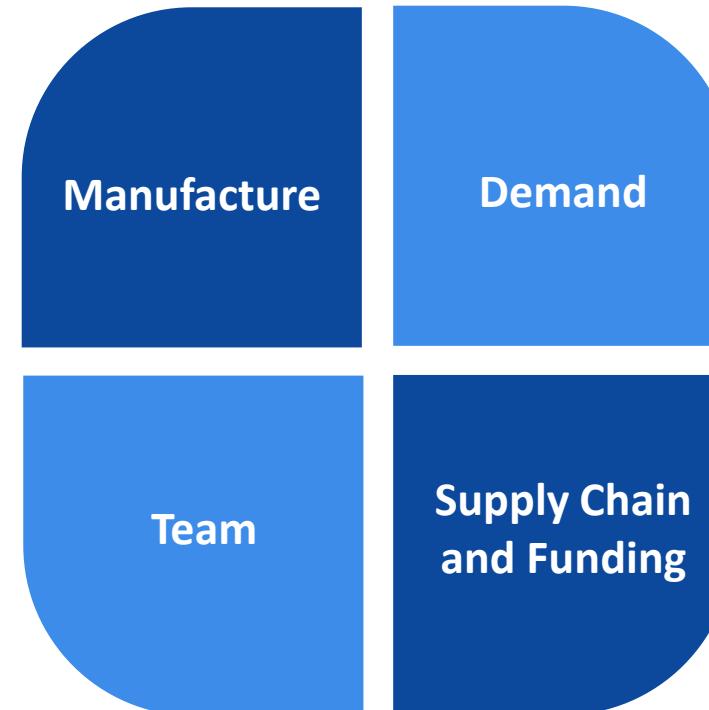
# ZDT is Ready to Gain Market Share

## Build up advanced smart fabs that align with the standard of semiconductor fabs

- The key to increase IC substrate yields and quality is reducing handling with higher level of automation
- ZDT's newly-constructed smart fabs combined with the most advanced equipment create great competitive advantages
- We deploy a big data processing system, which is used in the production of semiconductors, to improve manufacturing efficiency and quality

## Industry-leading management team

- ZDT's General Manager is very experienced in building IC substrate fabs. He also has the expertise in technology, quality control, and management
- Over 120 managers have an average experience of 10+ years in the industry
- As of 1Q22, we owned an IC substrate team of 1,500 employees. We expect this number to double by the end of 2022.



## Clear customer orders, high order visibility

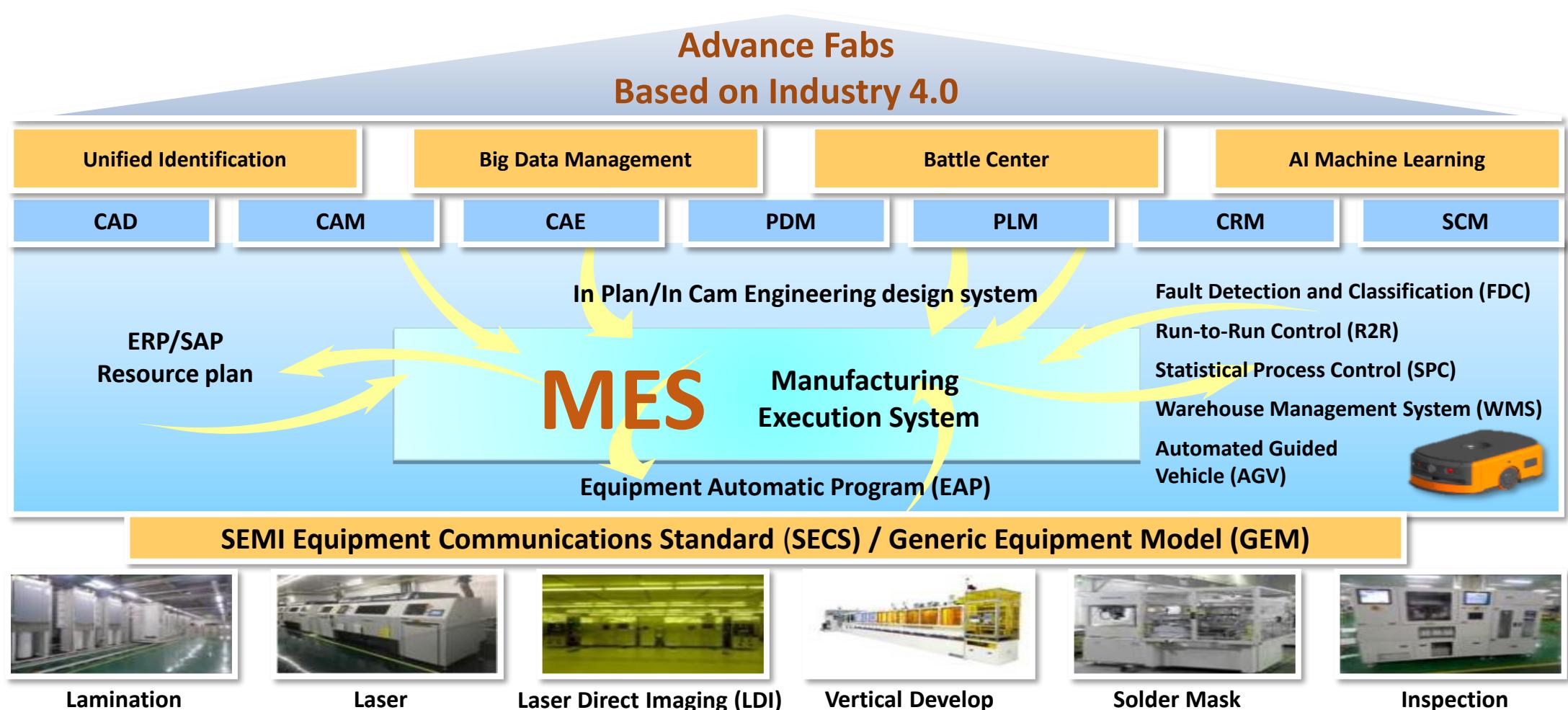
- We collaborate with clients closely on early product development. Our ABF capacity has been booked by customers through 2027
- After BT Fab 2 enters mass production, the contribution from FCCSP will increase significantly, so as multi-layer products
- For ABF, we initially target mid-to high end products with 8L~14L, focusing on GPU, AI and Network applications. We will continue to increase the contribution from high-layer count products

## Long-term partnership with suppliers, solid financial strength

- Our strategy of "becoming a customer of choice with suppliers" ensures us to get equipment on schedule
- Our healthy financial structure offers solid funding support to future capex for the IC substrate business

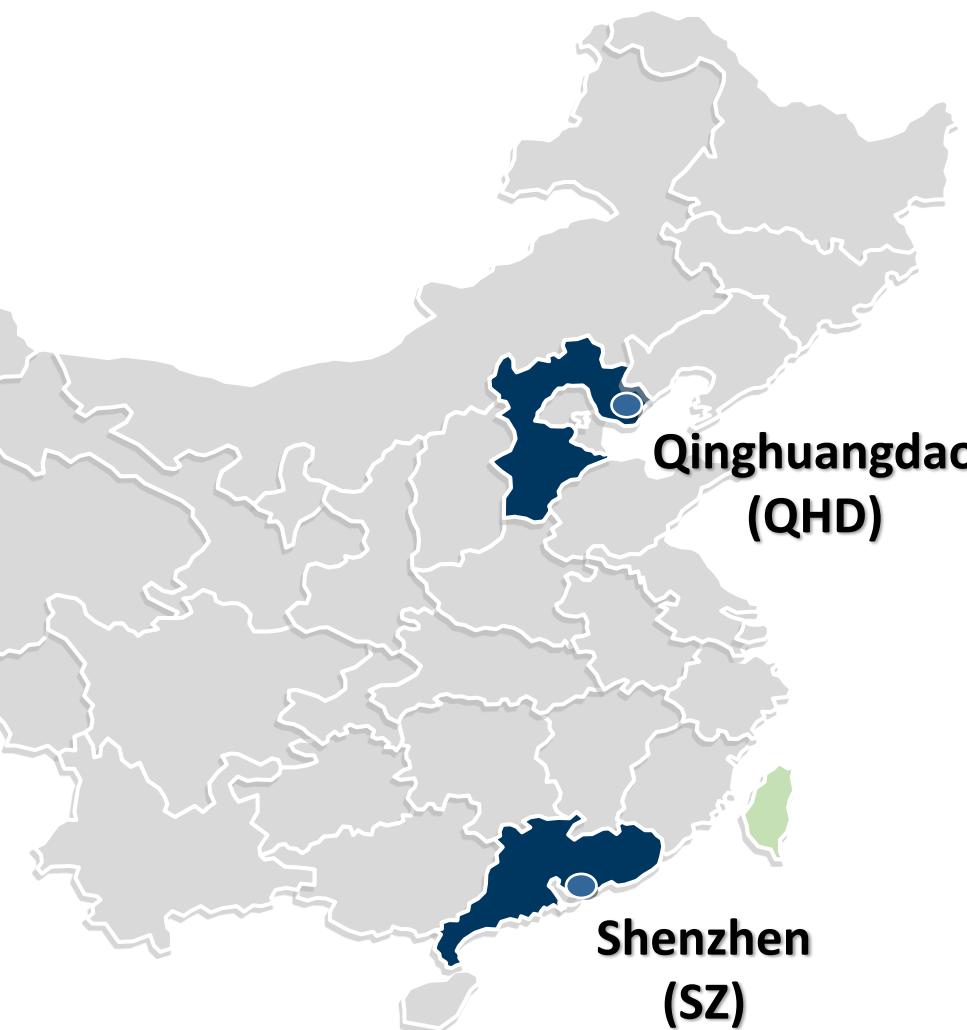
**Goal: Build up a world-class ABF substrate manufacturing site, and be the world's most advanced and largest high-end BT substrate supplier**

# Industry Leading Yields: Smart Fab + Digital Transformation



ZDT has built three smart factories in the past three years, which have significant benefits in yield rate and efficiency. On this basis, the new IC substrate plants will continue to enhance the depth of intelligence and the breadth of systems.

# IC Substrate Plants and Product Roadmap



## Qinghuangdao BT Substrate Plant



## Shenzhen ABF Substrate Plant



### Product

FC-CSP

WB-CSP

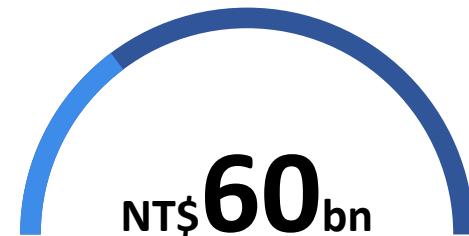
Memory

ABF FCBGA

# IC Substrate Capacity Expansion Plan (2022~2025)

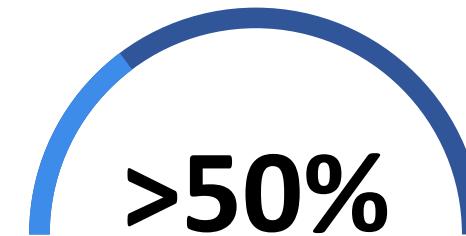
	2022				2023				2024				2025			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
QHD BT Substrate Plant  (Each Fab's floor area: 30,000 m <sup>2</sup> )	<b>Fab 1</b>	Utilization at 90%+ with leading quality														
	<b>Fab 2</b>	Fab construction		Installation		Sample certification		Mass production				Utilization at 90%+				
SZ ABF Substrate Plant  (Two Fabs' floor area in total: 170,000 m <sup>2</sup> )	<b>Fab 1</b> (Mid to high-end products)	Fab construction			Installation			Sample certification			Mass production, target yield: comparable to tier 1 peers			Full utilization, target yield: comparable to tier 1 peers		
	<b>Fab 2</b> (High-end products)	Fab construction												Installation		

## IC Substrate Goals



### Capex for IC Substrate:

Plan to invest NT\$60bn in the next 4 years, with NT\$15bn per year



### Revenue from IC Substrate:

Continue to grow >50% annually in the next 4 years



### Revenue from IC Substrate:

Account for 15 %+/- of company's consolidated revenue in 2025



### IC Substrate Market Share:

Aim to become one of the global top 5 companies in the IC substrate market in 2030



## Global Manufacturing Footprint



# Five Major Global Manufacturing Campuses

Multiple manufacturing campuses to fulfill clients' needs

## India



Chennai Park  
(FPC and advanced module)



## China - Shenzhen



Shenzhen Park 1  
(FPC and advanced module/HDI)



Shenzhen Park 2  
(FPC and advanced module)



ABF Substrate Park

## China - Qinghuangdao



Qinghuangdao Park  
(FPC & advanced module /SLP High-end HDI)



BT Substrate Park

## China - Huai'an



Huai'an Park 1  
(RPCB/HDI)



Huai'an Park 2  
(FPC & advanced module /HDI/ Mini LED)



Huai'an Park 3  
(High-end HDI/MSAP)

## Taiwan



Kaohsiung Park  
(FPC and advanced module)



Taoyuan Boardtek Park  
(PCB for networking, HPC, automotive related applications)



# Capacity Expansion Plans



Qinghuangdao BT Substrate Fab:  
FC-CSP/WB-CSP/Memory



Shenzhen ABF Substrate Fab: FCBGA



Kaohsiung Luzhu Science Park:  
FPC and Advanced Module Production Line



Huai'an Park 3: High-end HDI/MSAP



## Factory Planning

Our site selection along coasts and discharge management plan removes us from areas of high environmental sensitivity and all of our factories have necessary environmental permits in accordance with the regulations.

We have created green industrial parks based on principles of environmental sustainability, allowing us to save energy, water, and resources while reducing our waste, carbon generation and production costs. The parks embrace three-element design: economic, ecological, and ergonomic production and lifestyles.

Through the use of smart technologies on lighting, heating, power supply, cooling and AI management, we make continuous improvements to our energy efficiency and creating a sustainable and green future.

## Selecting Eco-friendly Advanced Equipment

We adopt equipment from the top three brands in the world, focusing on low energy consumption and low emission, and we co-develop with them if necessary.

Prior to procuring equipment, we conduct a thorough environmental protection and energy conservation assessment, promoting features such as heat recovery, water reuse, and waste recycling in all our production and utility equipment.

## Wastewater Treatment

Our wastewater is classified into 20~25 categories according to its contents and characteristics. Each category of wastewater is separately collected, treated, and/or recycled.

We have installed 10 major treatment systems established according to each of these characteristics. Also adopting a number of high-efficiency treatment systems, as well as multi-stage treatment processes, three-dimensional layouts, and smart central control systems to maximize the efficiency of all treatment plants.

Water quality data and real-time quantitative monitoring of effluent water are directly transferred round-the-clock to the local environmental protection agency, ensuring that the treated wastewater fully complies with national/local environmental standards.

## Air Exhaust Treatment

Air exhaust is divided into 4~6 different categories, and each is classified and treated separately.

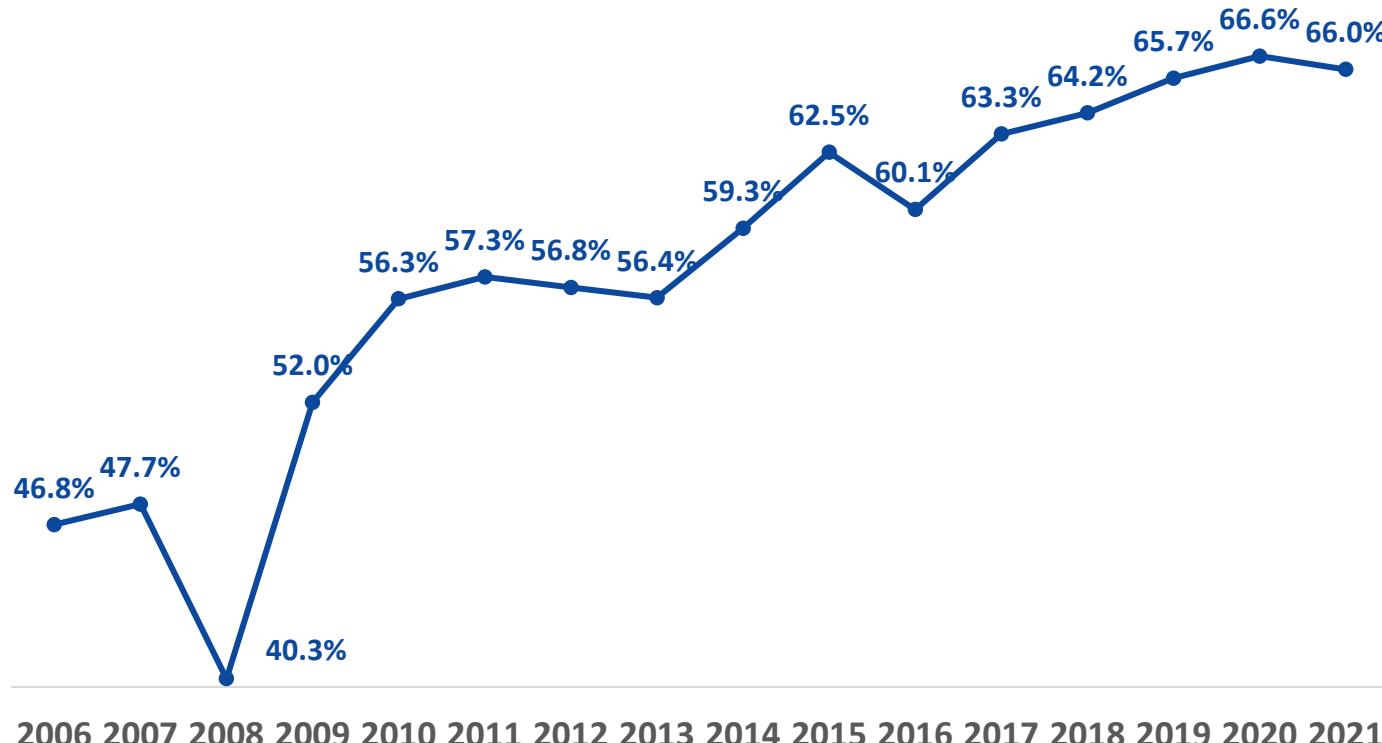
The treated exhaust collected during the production process is regularly sampled and analyzed by third party inspection groups.

The emission concentrations of all emissions for all plants are far less than the maximums set by national environmental standards

## Solid Waste Treatment

From the source of production process, the solid waste is reduced, recycled and rendered harmless. All process is managed through online platform (WMS). Qualified outsourcing partners will do regular checks.

**Top 30 PCB manufacturers' revenue market share:** Top players have been consolidating market share

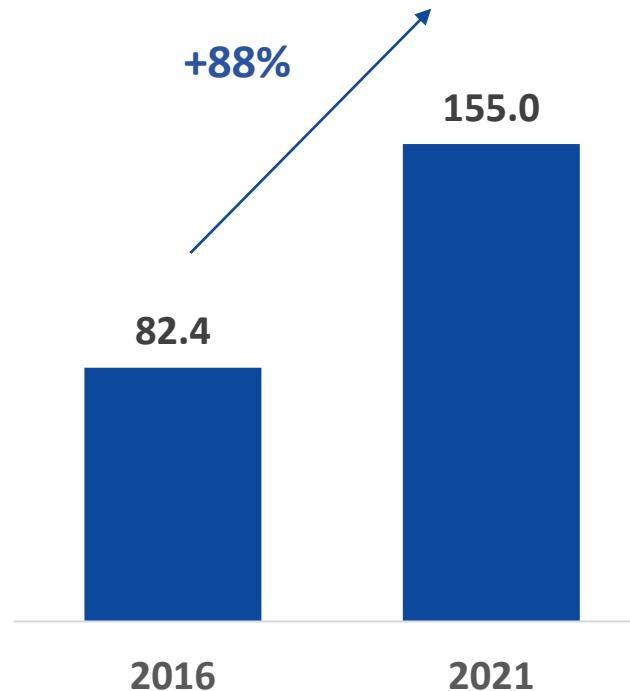


Source : Prismark

- As environmental regulations become more stringent and fine line requirements get more advanced, only limited PCB companies can offer high-tech/high-quality products while complying to all environmental regulations. We believe top players will continue to consolidate market share.
- ZDT's pollutant discharge is far less than the maximums set by governments. Our water recycling rate exceeds **50%** and waste recycling rate exceeds **90%**.
- In our U.S. client's supplier evaluation, ZDT's four business units all scored higher than the average of the client's total suppliers. Specifically, our FPC module BU is the leader among all suppliers.

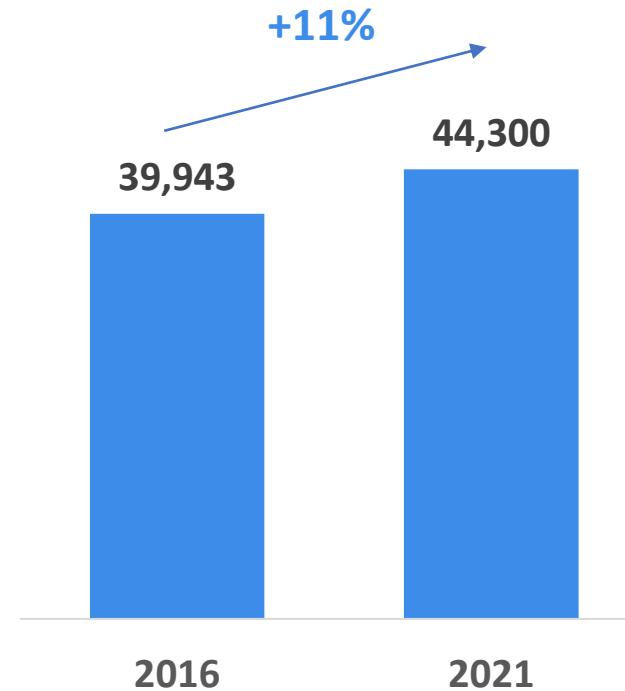
## Consolidated Revenue

Unit: NT\$ billion



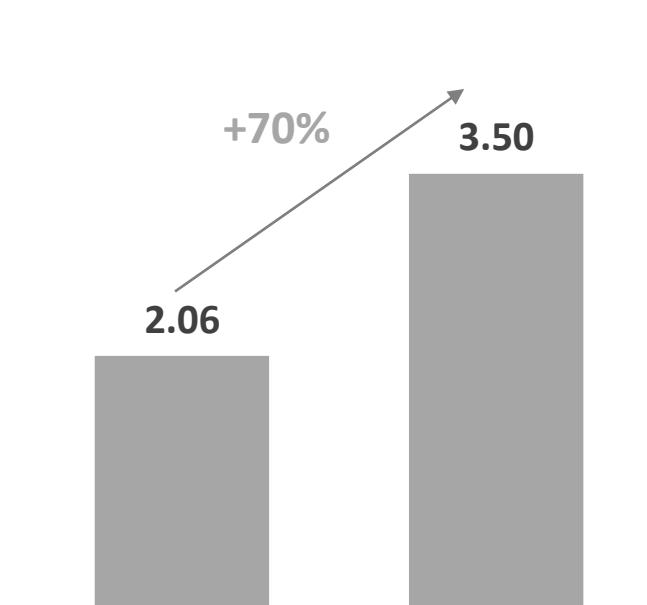
## Avg. Number of Employee

+11%



## Avg. Revenue per Employee

Unit: NT\$ million





## Commitment to EPS + ESG Blueprint

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# Commitment to EPS + ESG Blueprint

## ENVIRONMENT

### Implement the highest environmental standards in the industry

#### Reduce GHG Emissions

In 2021, reduced GHG emissions per unit revenue by **37%** compared to 2013

We have set ambitious reduction levels for our company in line with Science-based targets



#### Water Management

In 2019, our manufacturing sites in Shenzhen **became the first in the PCB industry** to receive the Alliance for Water Stewardship (AWS) Platinum Certification. In 2020, all manufacturing sites in China obtained the AWS Platinum Certification

#### Waste Management

All manufacturing sites in China achieved the UL 2799 Platinum Certification of Zero Waste to landfill for manufacturing



## SOCIAL

### Benchmark international human rights standards and prioritize human capital development

#### Human Rights

In May 2021, ZDT became **a member of BSR and RBA**, benchmarking international human rights standards

#### Talent Retention

In 2021, retention rate of key talent reached **93%**

## GOVERNANCE

### Ongoing improvements in corporate governance, risk management and comprehensive information disclosure

#### Board Governance

Established a Nomination Committee and Sustainability Committee at Board level

#### Supply Chain Management

**100%** of our suppliers signed our Vendor Commitment which covers ethical behavior, environmental impacts and human rights

#### Information Security

Information security committee established

#### Innovation Management

**2,886** patents applied. **1,288** global patents obtained, **92%** of which are invention patents (as of 2021/5/31)



## TWSE Corporate Governance Evaluation

Ranked in the top 25 of the electronics companies whose market cap are above US\$ 10 bn



## FTSE4Good TIP Taiwan ESG Index

Selected as a constituent of FTSE4Good TIP Taiwan ESG Index for three consecutive years (2020-2022)



## TWSE Corporate Governance 100 Index (CG100)

Selected as a constituent of TWSE Corporate Governance 100 Index for three consecutive years (2019-2021)



## Wind ESG

Avary Holding, a subsidiary of ZDT, received a ESG rating of A, ranking 16th in the industry (2022/3)



## S&P Global Corporate Sustainability Assessment (CSA\*)

2021 S&P Global ESG score outperformed 86% of companies in the industry



## CDP Scoring

Received "B" in CDP Water Security Scoring and "B-" in CDP Climate Change Scoring

\*the basis for many ESG indices including DJSI



臻鼎科技控股

Zhen Ding Tech. Holding



# Financial Results

# 2011-2021 Financial Summary

Year	Unit: NT\$ million										
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Revenue	44,280	55,369	64,483	75,954	85,738	82,393	109,238	117,913	120,068	131,279	155,022
Gross Profit	6,993	10,775	11,894	14,323	16,427	12,542	17,833	26,061	27,222	26,584	30,537
Net Income	2,356	4,056	5,471	6,735	7,731	3,456	6,772	11,536	12,402	11,508	13,694
Net Income to Parent	2,356	4,056	5,471	6,735	7,731	3,456	5,172	8,448	8,685	8,095	9,651
Depreciation & Amortization	3,008	3,375	3,742	4,293	4,850	5,295	5,679	6,820	7,955	8,405	11,875
EPS (NT\$)	3.30	5.49	7.41	9.12	9.80	4.29	6.43	10.50	9.93	8.90	10.21
DPS (NT\$)	1.50	2.50	3.00	3.67	4.50	2.20	3.30	4.46	4.50	4.50	5.00
Payout Ratio (%)	45.45%	45.54%	40.49%	40.24%	45.92%	51.28%	51.32%	42.48%	45.32%	50.56%	48.97%
Cash and Cash Equivalents*	4,084	8,756	10,016	23,482	31,572	30,241	33,296	49,154	43,071	46,775	35,179
Property, Plant and Equipment	27,097	26,637	27,843	30,073	32,074	32,262	36,681	41,913	46,243	68,177	86,073
Capital	6,699	7,034	7,386	7,386	8,047	8,047	8,047	8,047	9,022	9,470	9,470
ROE (%)	15.34%	21.27%	23.77%	23.33%	20.82%	8.59%	14.49%	17.30%	14.72%	11.84%	12.59%
Debt Ratio (%)	67.03%	66.28%	64.06%	62.54%	53.70%	59.72%	55.33%	44.25%	35.41%	42.56%	42.01%

\* Including current financial assets at amortized cost (time deposits, etc.)

# Consolidated Statements of Income

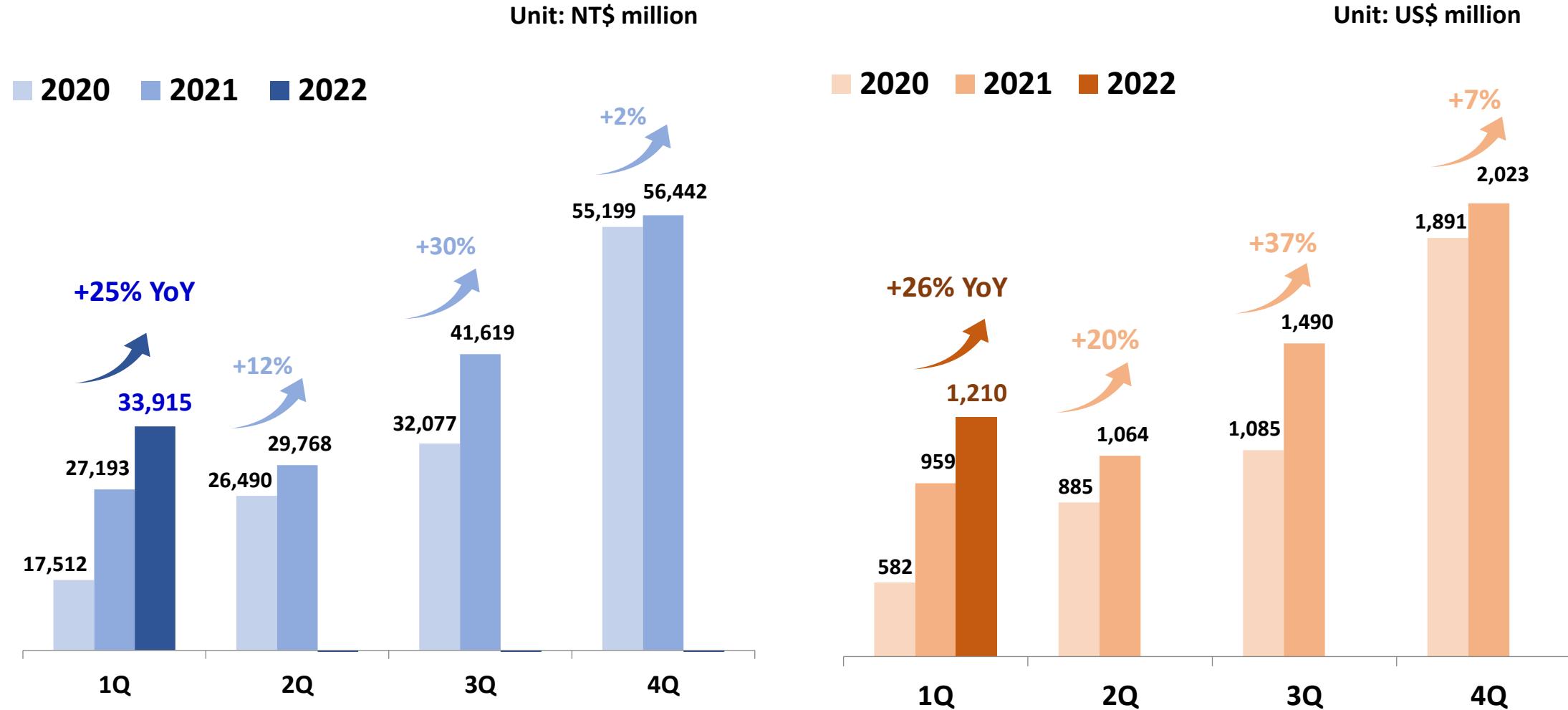
(Unit: NT\$ million, unless otherwise stated)

	1Q22	1Q21	YoY (%)
Revenue (US\$ million)	1,210	958	+26.3%
Revenue	33,915	27,193	+24.7%
Gross Profit	6,387	4,752	+34.4%
<b>Gross Margin</b>	<b>18.8%</b>	<b>17.5%</b>	<b>+1.3 ppts</b>
Operating Expenses	3,491	3,421	+2.0%
Operating Income	2,896	1,331	+117.6%
<b>Operating Margin</b>	<b>8.5%</b>	<b>4.9%</b>	<b>+3.6 ppts</b>
Total Non-Operating Income (Loss)	426	580	-26.6%
Net Income	2,775	1,391	+99.6%
Net Income to Parent	1,873	948	+97.6%
<b>Net Margin</b>	<b>8.2%</b>	<b>5.1%</b>	<b>+3.1 ppts</b>
EPS (NT\$)	1.98	1.00	+99.0%
ROE	9.6%	5.4%	+ 4.2. ppts
Average Exchange Rate	28.032	28.370	

\* 1Q22 weighted average of shares outstanding: 944,956 thousand shares

\*\* ROE is annualized data calculated based on the average of equity attributable to owners of parent

# Quarterly Revenue Trends

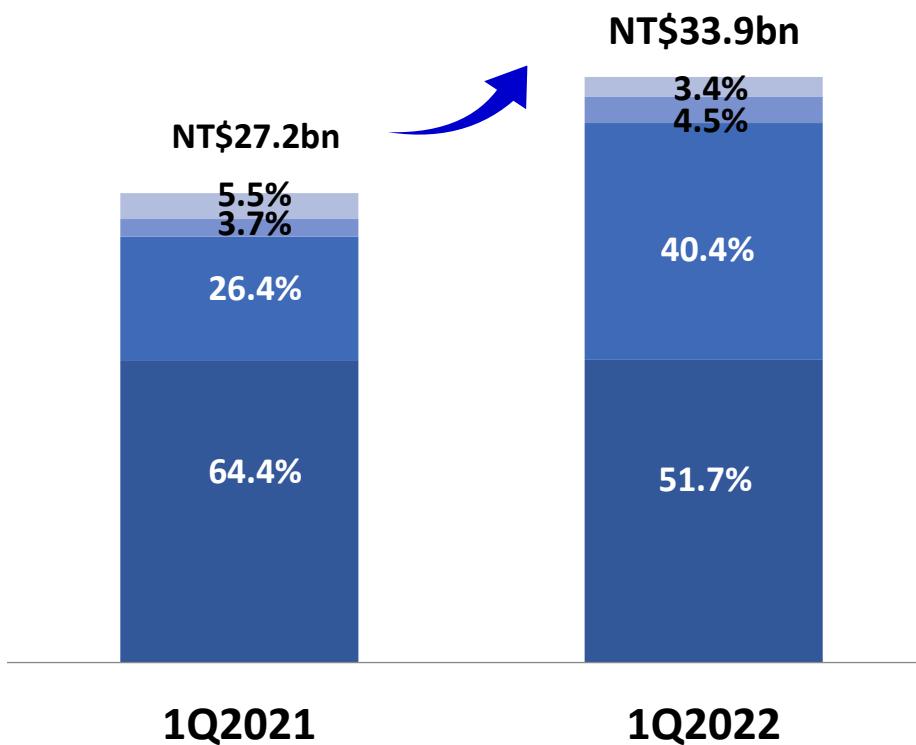


# 1Q22 Revenue Breakdown – By Applications

## Revenue (NT\$) YoY

- Automotive Radar/Base Station/Server/Others
- IC Substrate
- Computers and Consumer Electronics
- Mobile Communication

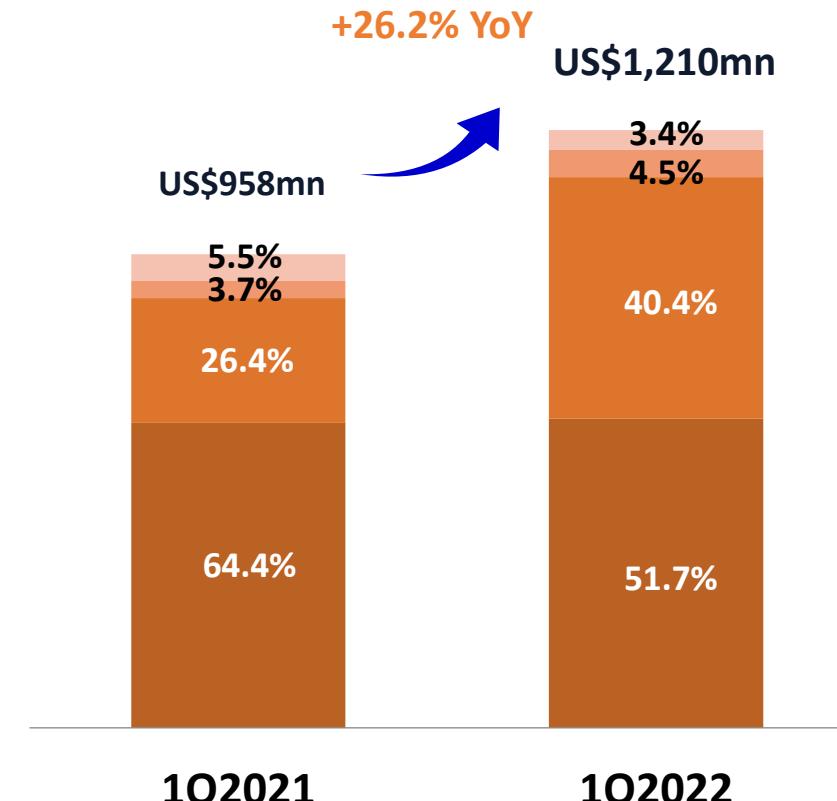
+24.7% YoY



## Revenue (US\$) YoY

- Automotive Radar/Base Station/Server/Others
- IC Substrate
- Computers and Consumer Electronics
- Mobile Communication

+26.2% YoY



# Consolidated Balance Sheet and Key Indices

Unit: NT\$ million

	2022-3-31		2021-12-31		2021-3-31	
	Amount	%	Amount	%	Amount	%
Cash and Cash Equivalents**	42,605	21.2%	35,179	18.0%	48,757	27.6%
Notes & Accounts Receivable	26,569	13.3%	38,669	19.8%	20,273	11.5%
Inventories	19,754	9.8%	17,675	9.0%	16,857	9.6%
Property, Plant and Equipment	93,471	46.6%	86,073	44.0%	72,387	41.0%
<b>Total Assets</b>	<b>200,579</b>	<b>100.0%</b>	<b>195,755</b>	<b>100.0%</b>	<b>176,475</b>	<b>100.0%</b>
Current Liabilities	55,892	27.9%	56,880	29.1%	61,191	34.7%
Interest-bearing Long-term liabilities	18,966	9.5%	17,982	9.2%	11,012	6.2%
<b>Total Liabilities</b>	<b>82,544</b>	<b>41.1%</b>	<b>82,235</b>	<b>42.0%</b>	<b>75,397</b>	<b>42.6%</b>
<b>Total Equity</b>	<b>118,035</b>	<b>58.8%</b>	<b>113,520</b>	<b>58.0%</b>	<b>101,077</b>	<b>57.3%</b>

## Key Indices

A/R Turnover Days	86	84	90
Inventory Turnover Days	66	48	67
Current Ratio (x)	1.66	1.69	1.47
PPE Turnover (x) ***	1.51	1.80	1.55

\* Shares outstanding as of 2022/3/31: 944,956 thousand shares

\*\* Including current financial assets at amortized cost (time deposits, etc.)

\*\*\* PPE Turnover = annualized net revenue / average net property, plant and equipment

# Consolidated Statements of Cash Flow

Unit: NT\$ million

	1Q22	4Q21	1Q21
<b>Beginning Balance</b>	<b>33,790</b>	<b>30,336</b>	<b>44,223</b>
Cash Inflow Generated from Operations	14,192	7,768	7,976
Capital Expenditures	(7,661)	(7,184)	(7,589)
Cash Dividend Paid	-	-	-
Increase (Decrease) of Short-term Debt	(3,050)	(2,939)	1,999
Investments and Others	2,715	5,808	150
<b>Ending Balance</b>	<b>39,986</b>	<b>33,790</b>	<b>46,759</b>



# Q&A

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THANK YOU