



Stock Symbol: **3167**

# Ta Liang Technology Co., Ltd.



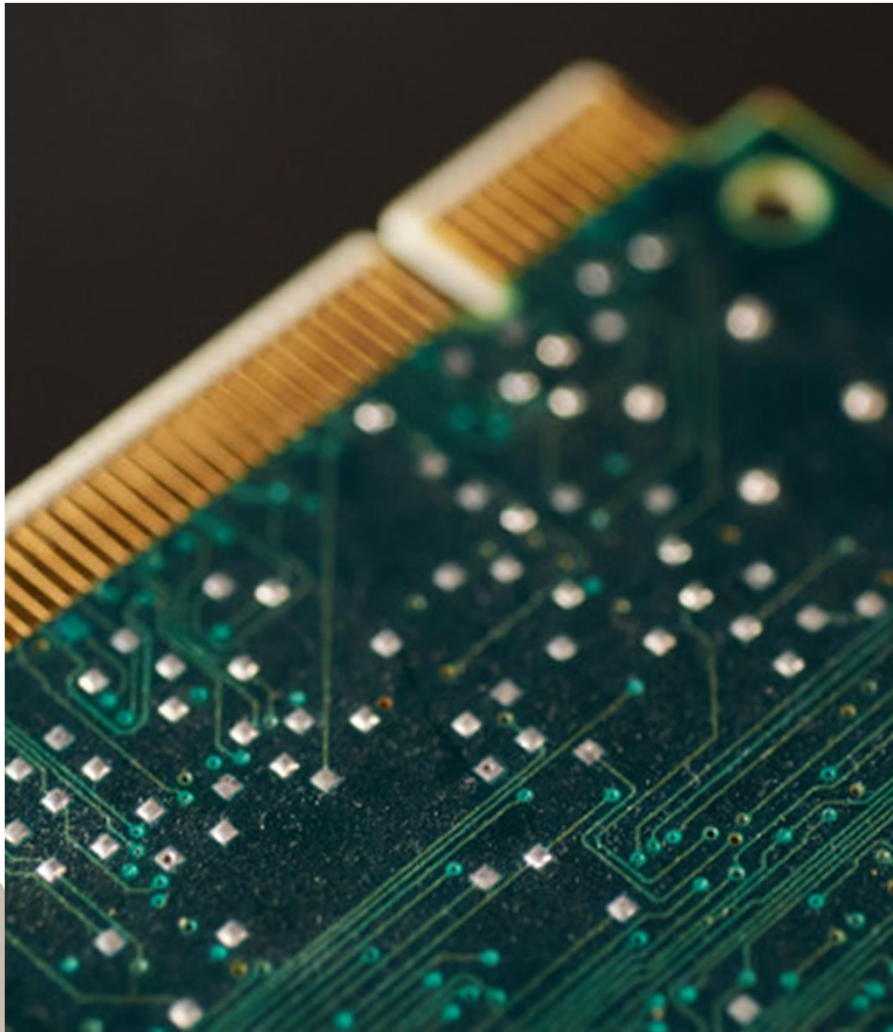
2022, Jun.



# Disclaimer

---

- The predictive information mentioned in this presentation, including operational outlook, business situation, etc., is obtained by the Company through internal and external sources.
- The company's actual operational results that may occur in the future due to factors including but not limited to market competition and the conditions of international economy.
- The outlook for the future in this presentation is the Company's external views until now. For these views, if there are updates or adjustments in the future, the Company is not responsible for reminding or updating again at any time.



# Company Profile



# Company Overview

|                 |                                      |
|-----------------|--------------------------------------|
| Stock Symbol    | 3167                                 |
| Capital         | NTD 801,341,160                      |
| Chairman        | Laurie Wang                          |
| General manager | Jerry Chen                           |
| Employee        | TW 245, Group 573                    |
| Headquarter     | No.49, Yulien St. Bader Dis. Tauyoun |
| Factories       | Bade 、 Nanjing 、 Lianshui            |







# Milestone

**1980**

Ta Liang Industrial Co., Ltd. was established in Taoyuan, Taiwan.



1980~

**2000**

Company was renamed "Ta Liang Technology Co., Ltd."

**2001**

Second plant was completed for PCB drilling machine.

**2002**

Stock public offering and PCB routing machine was developed.

**2004**

Resin panel cutting machine was developed.

**2007**

Nanjing Taliang Numeric Control Tech. Co., Ltd. was established.



2000~

**2017**

IC Packaging & Testing Machine were developed.

**2018**

Semiconductor products has entered for mass production stage.

**2020**

IA equipment was developed.

Semiconductor business department was established and producing for key customers.

**2021**

Taiwan acquired a new factory and integrated.

2010~

2020~



**2011**

New factory location was located in Yangmei, Taoyuan, for expanding Production capability.

**2012**

TLSK Technology Co., Ltd. was established as joint venture with SAKI, Japan.

**2013**

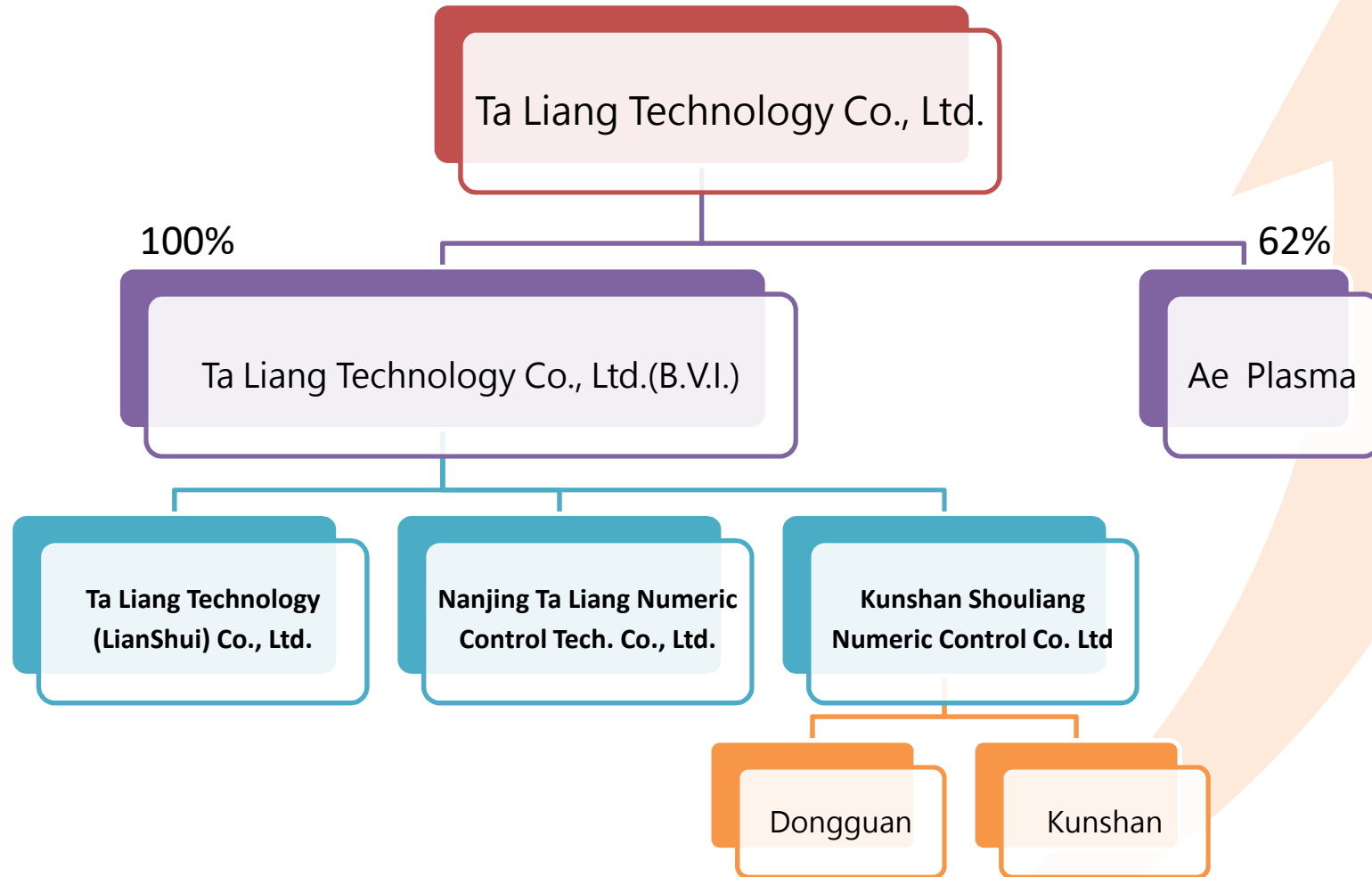
Ta Liang Technology Co., Ltd. listed on TSEC.

**2015**

Taliang Tech. (Lianshui) Co., Ltd. was established.

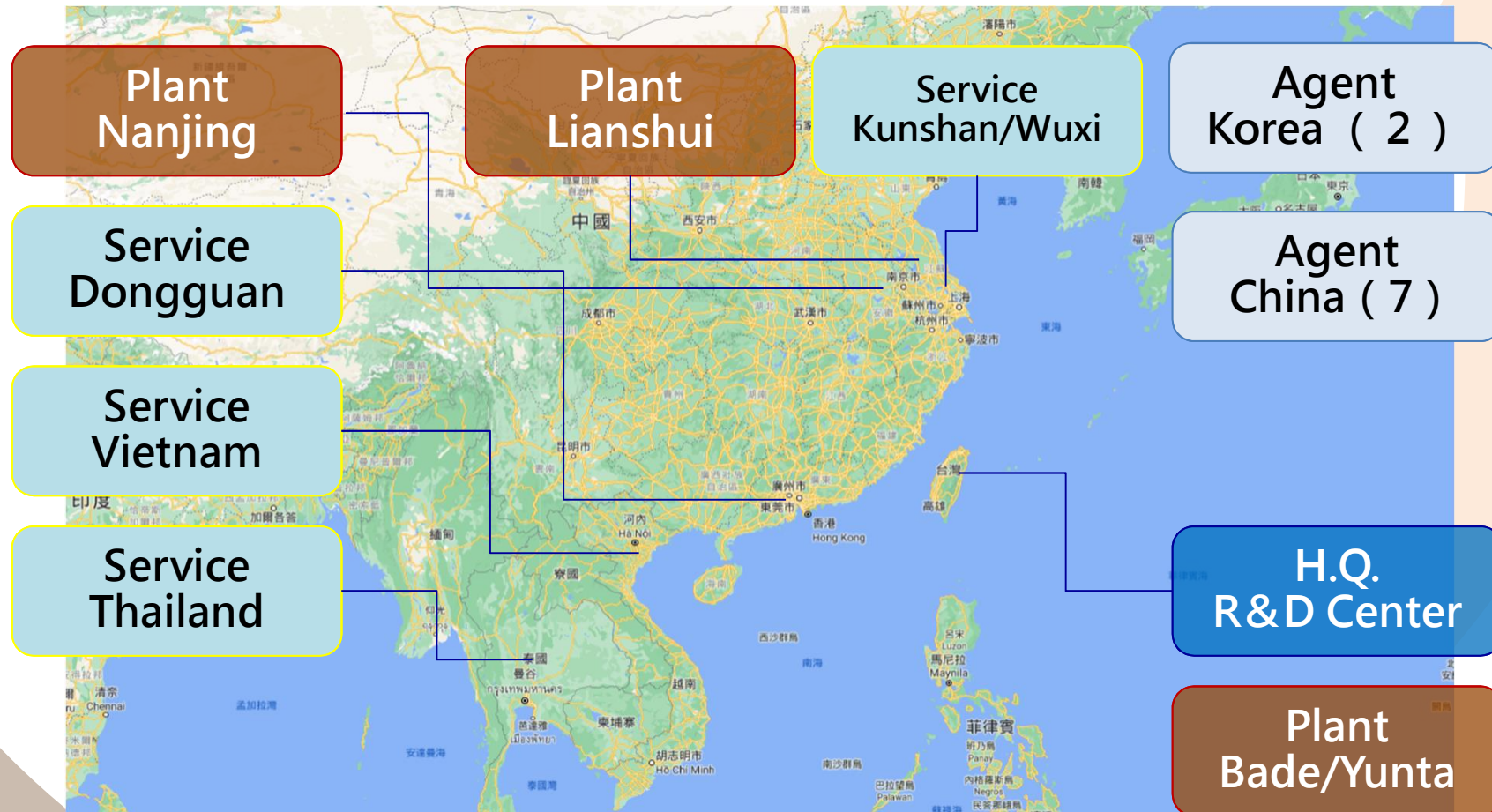


# Group Organization





# Production & Service Base





# Business Scope

- Standard & High end PCB Drilling Machine
- Standard & High end PCB Routing Machine
- Automation
- Others

PCB Industry



- Inspection Machine
  - Vision Series
  - Handler Series
- Metrology
  - CMP Pad metrology

Semi con. Industry



- R&D/purchasing/production/sales/service/management

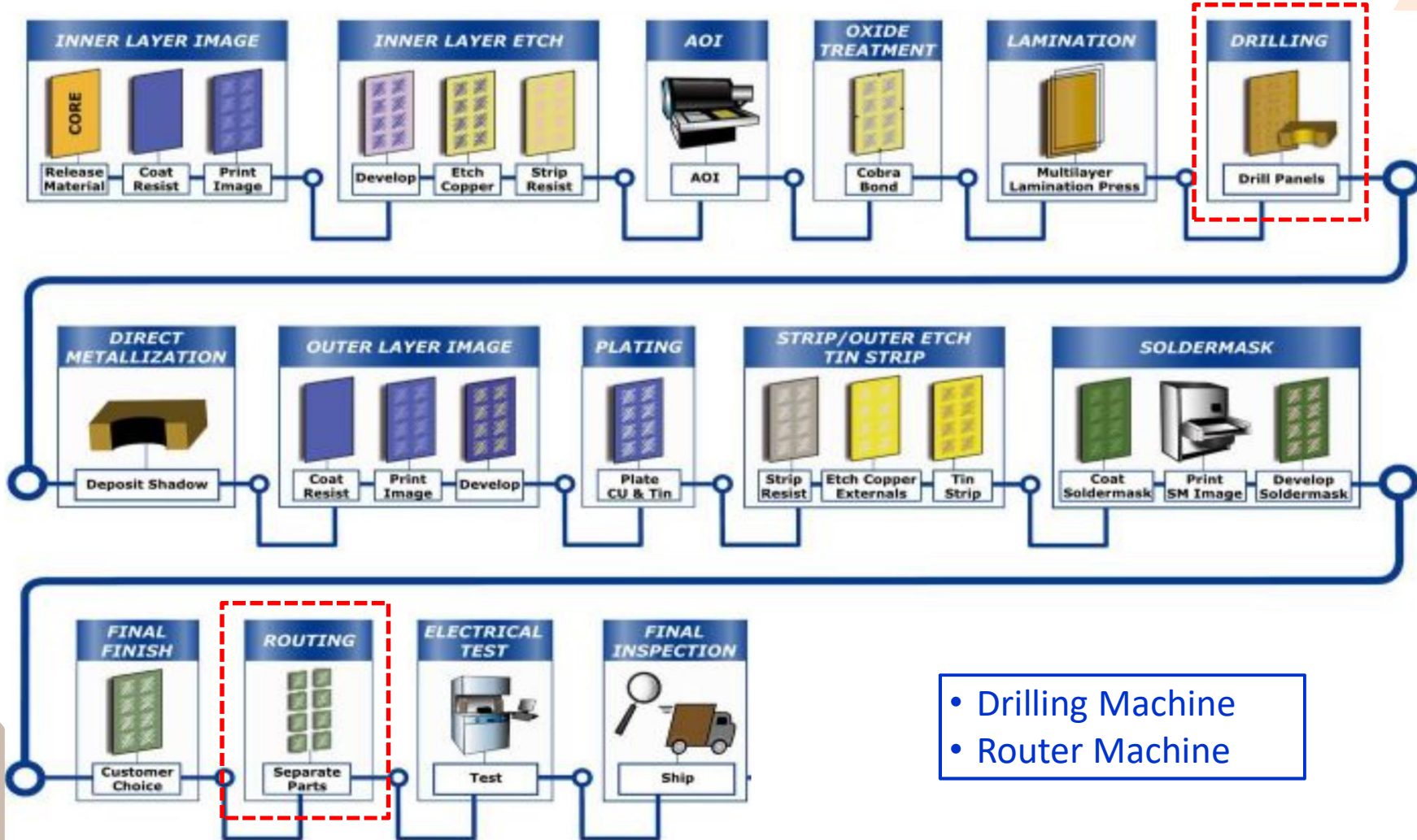
TL Technology Team







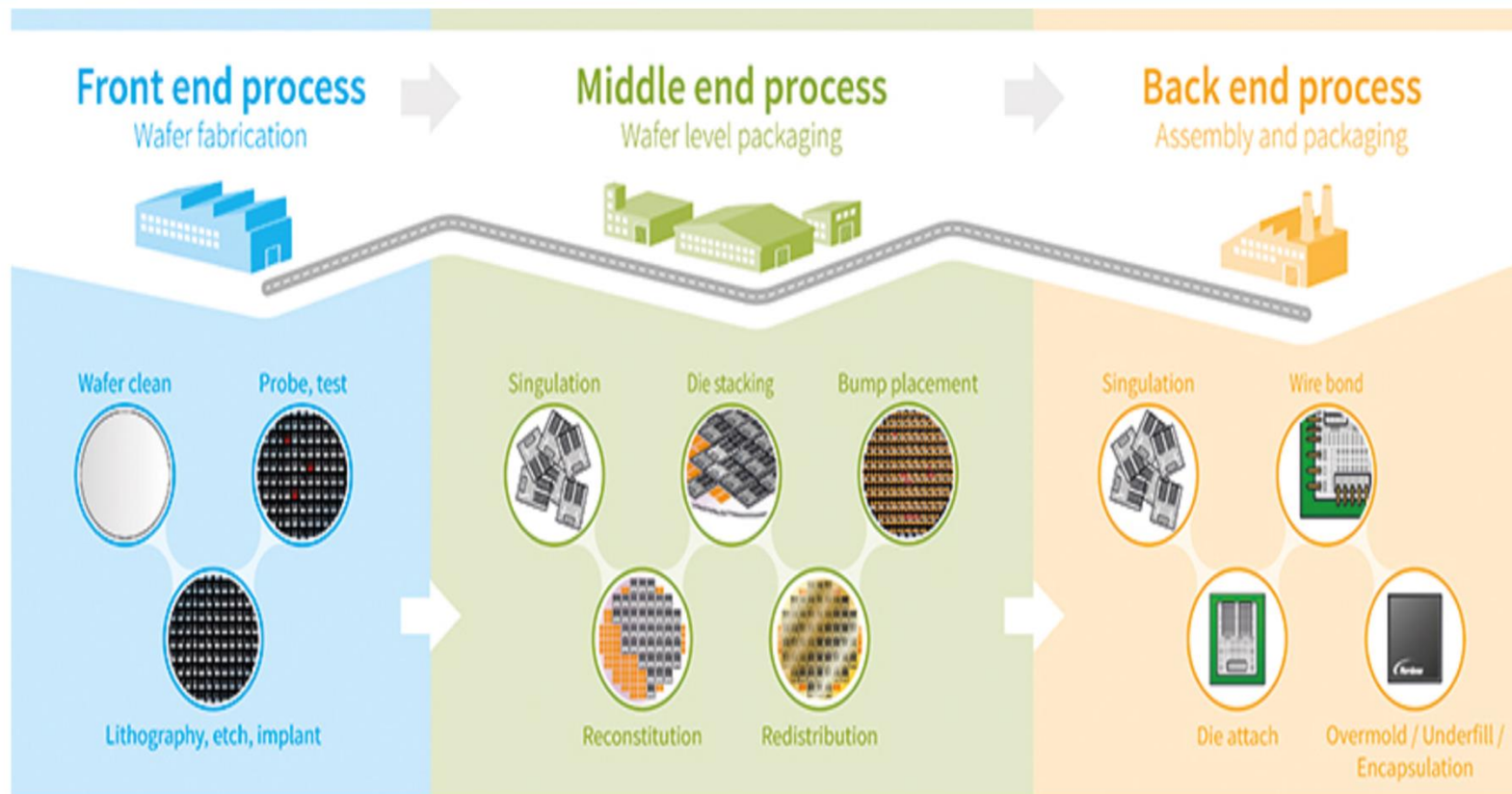
# TL PCB Machines



- Drilling Machine
- Router Machine



# TL Semiconductor Machines



- CMP Pad Metrology

- Metrology Series
- Vision Series
- Handler Series

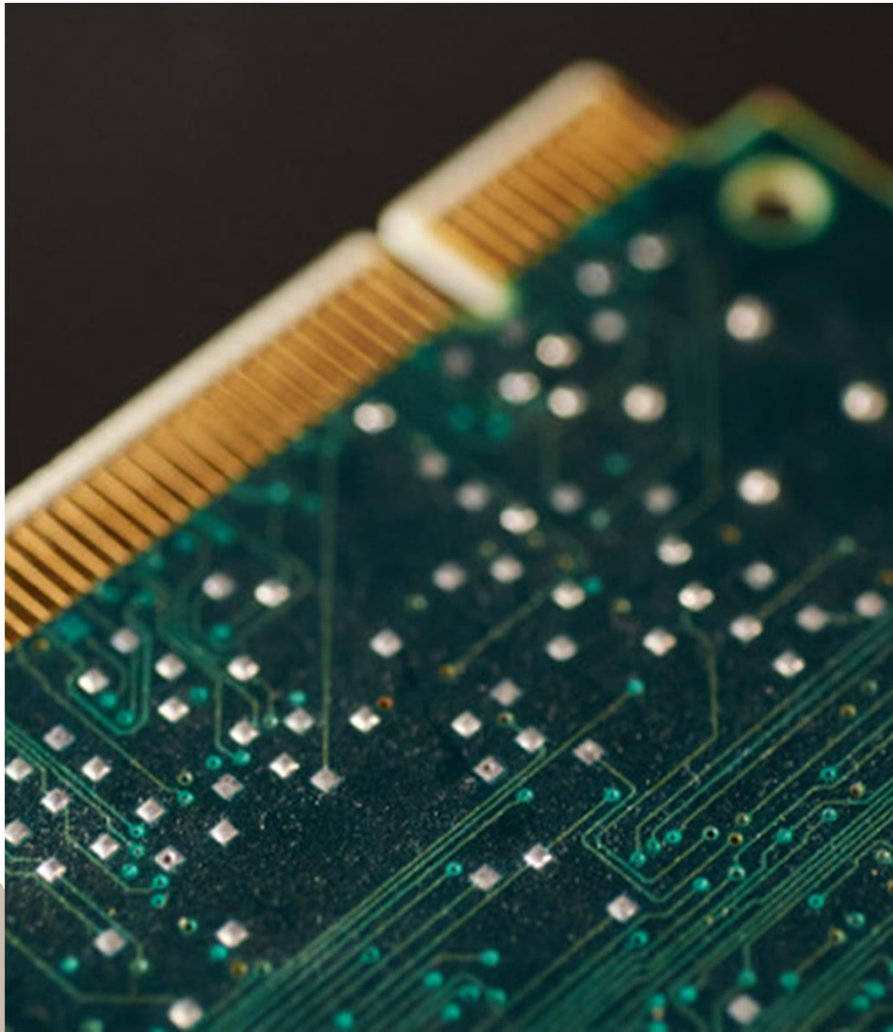


# Core Competitiveness

## Core Technology

Ta Liang Technology has the best R&D team and core technology to achieve the goal of providing customer with key product.

- 01 Capability of Precision CNC Mechanical Structure Design .
- 02 Capabilities of Manufacturing, Assembling and Testing for Precision CNC Machinery .
- 03 Controller Development capability for Multi-Axes with high speed movement .
- 04 Capability of Processing Application Software Development for CNC Controller.

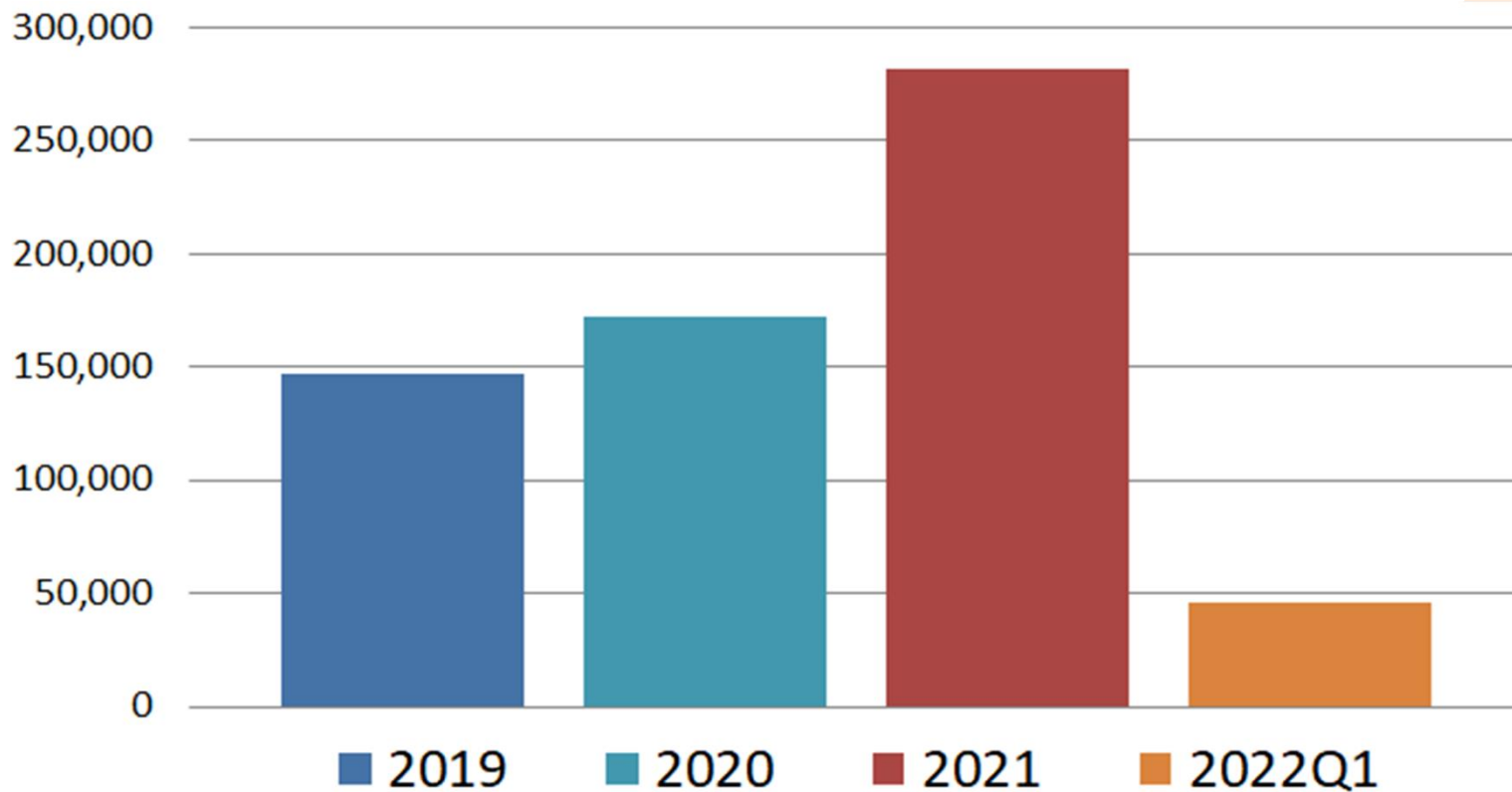


Operational  
performance



# R&C Expense

NTD Thousand

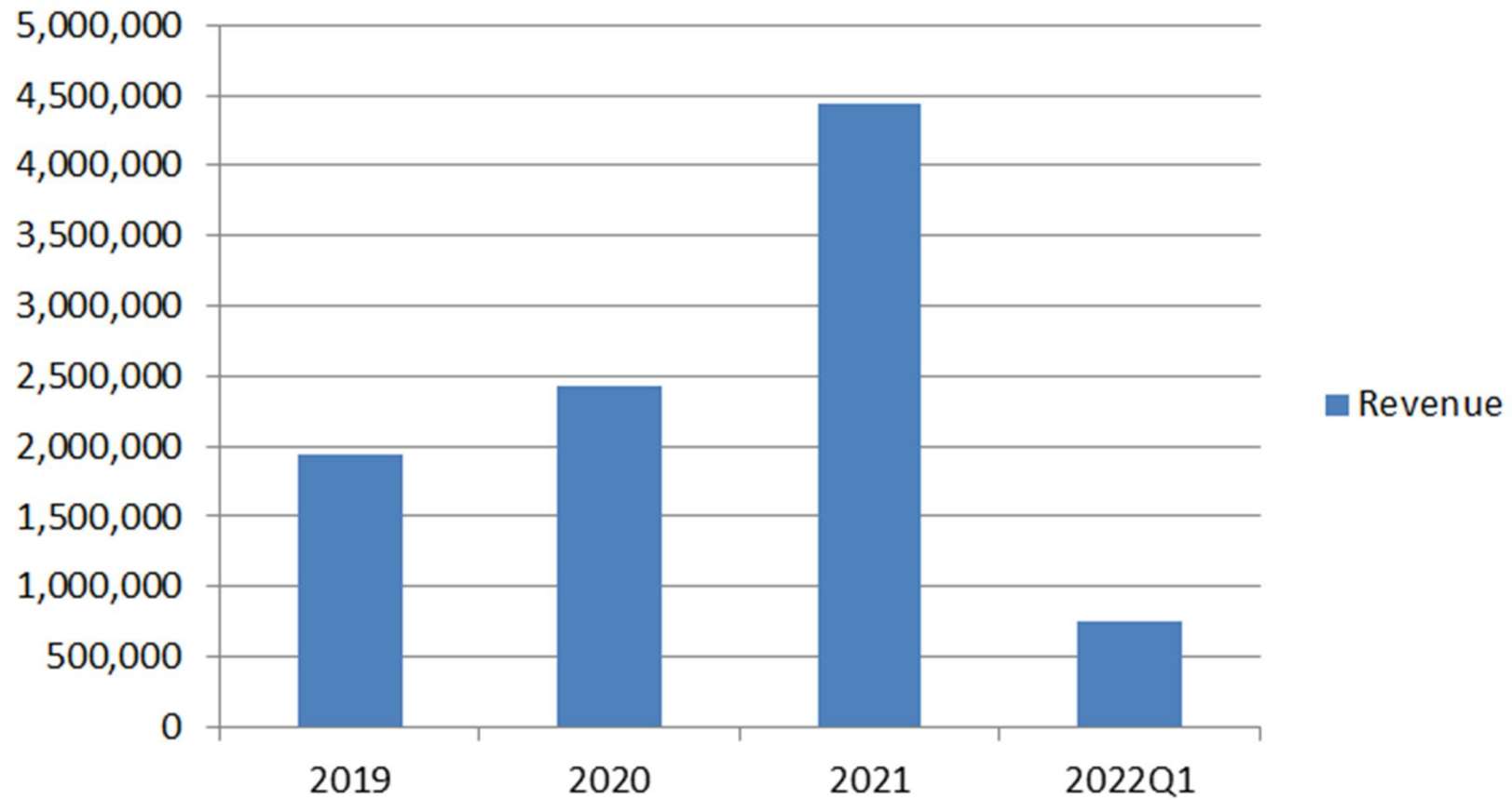






# Revenue

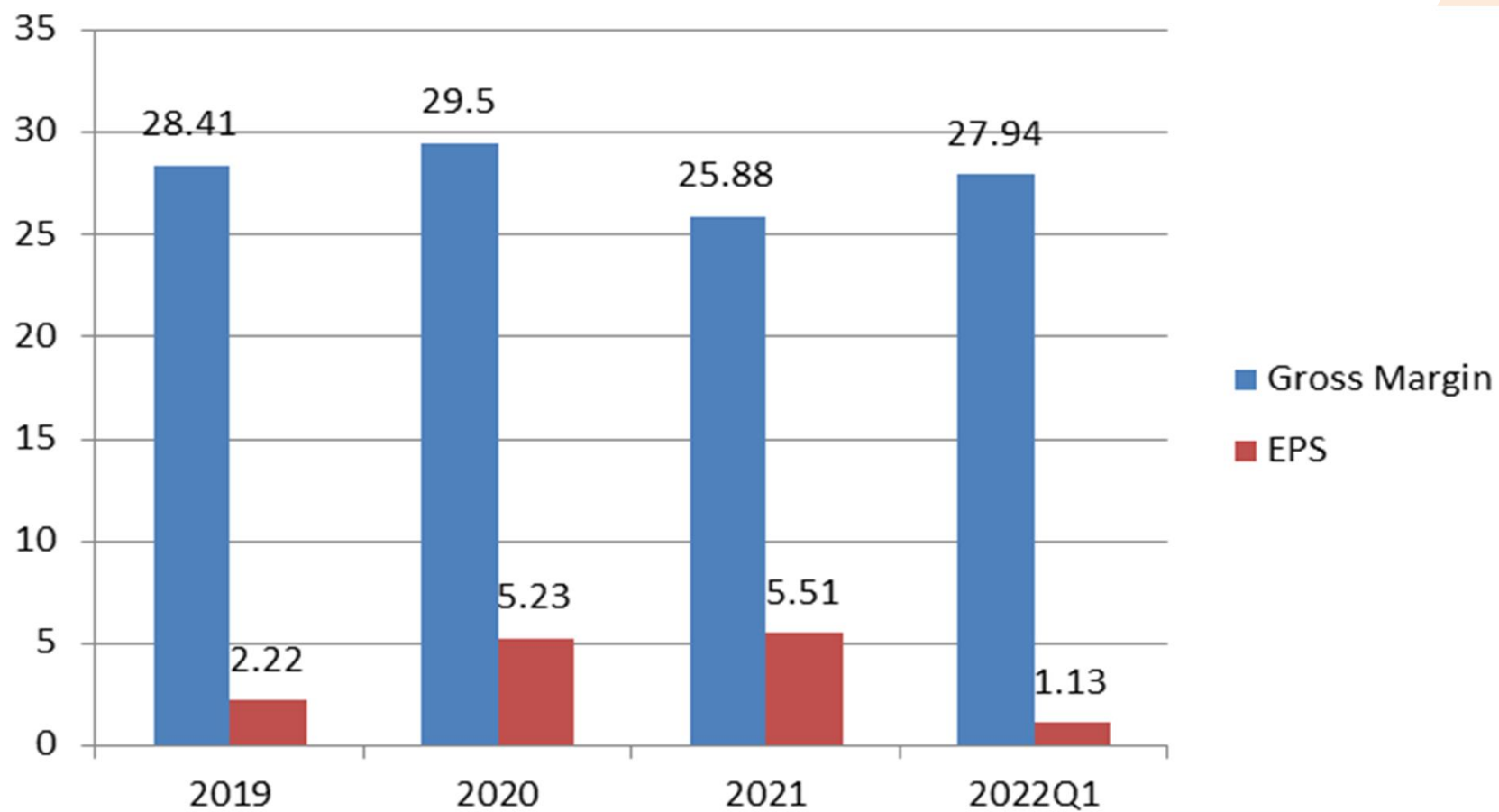
NTD Thousand





# Gross Margin & EPS

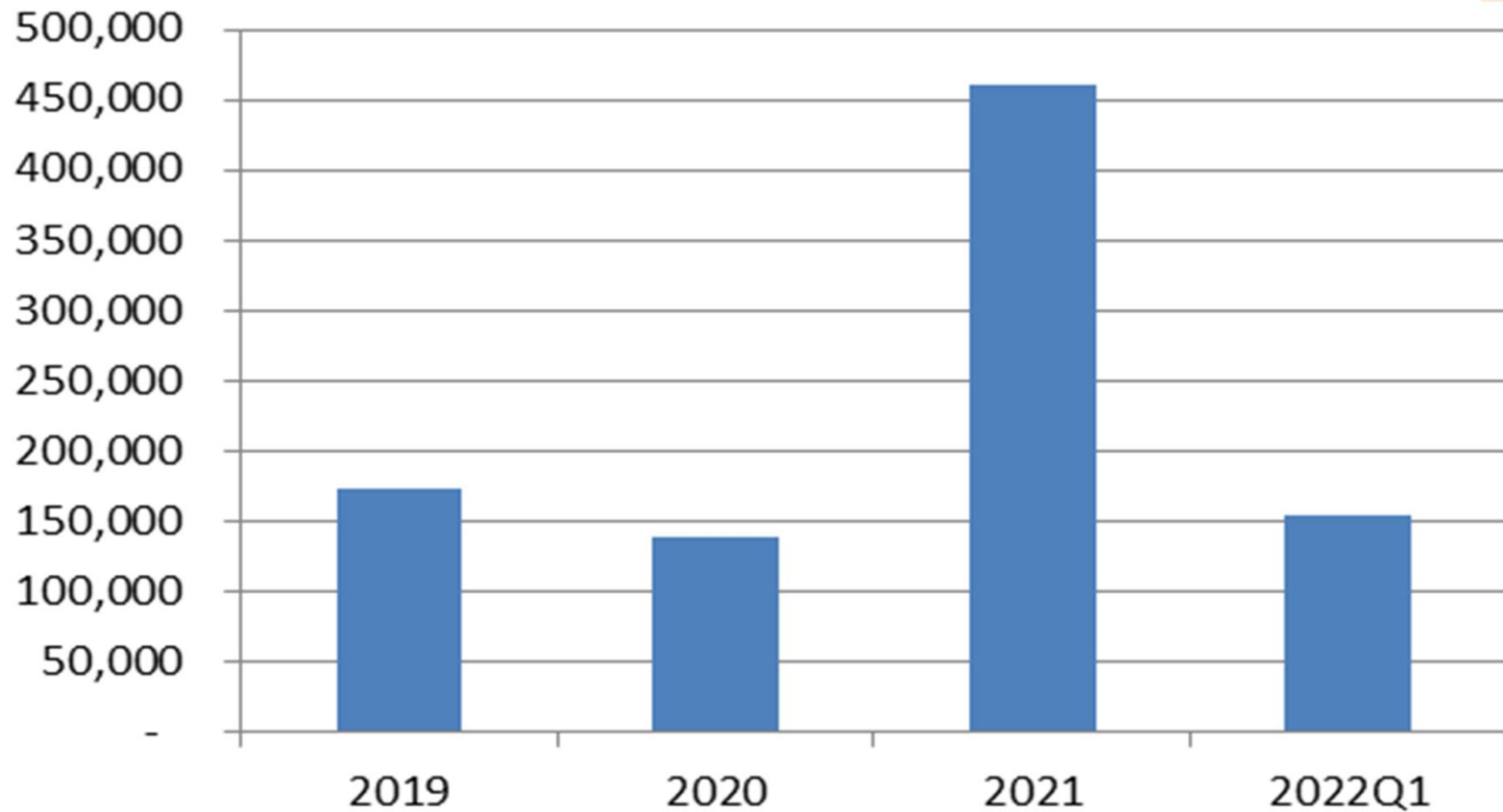
% · NTD





# PCB High-end Machine Revenue

NTD Thousand





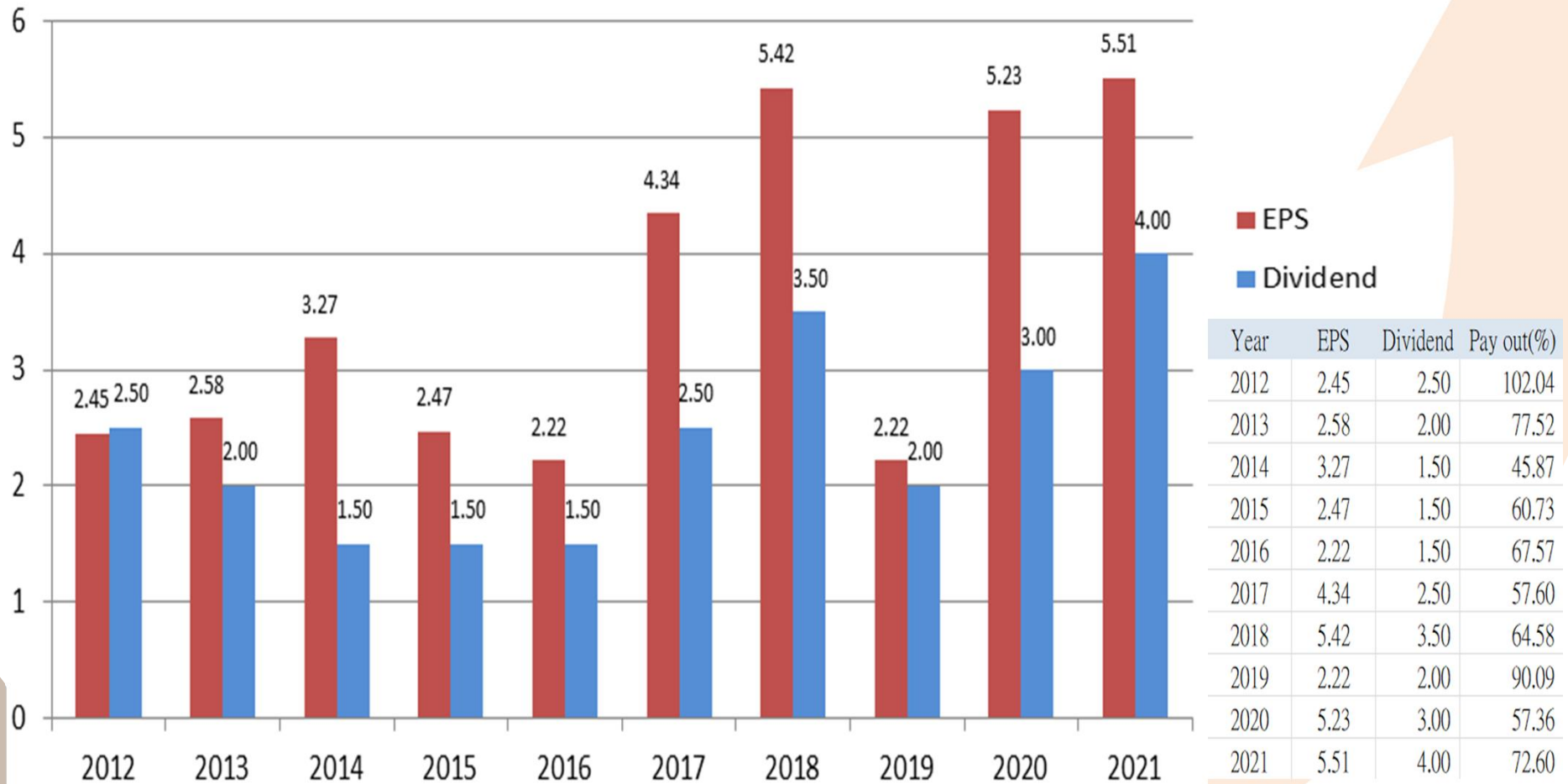
# Taiwan New Plant



1. This new plant is integrating the original factories in Taiwan. The yellow frame line in the above picture is the new plant area.
2. There are buildings A to F in this new plant. Now the decoration and relocation in D, E and F buildings have been completed.
3. The old production plant in Taiwan was registered on 6/28 for transferring, and the related sales benefit has been completed on 2022Q2.



# Dividend Policy







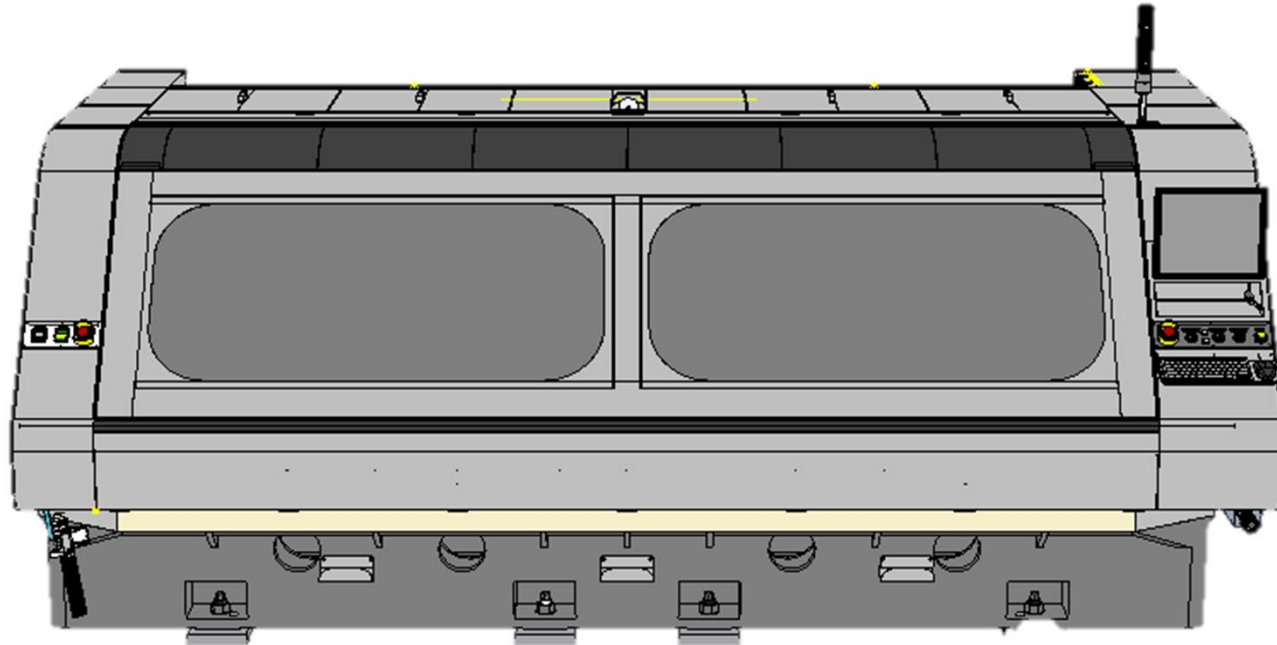
# Important points in 2022

---

1. We expect CMP Pad Metrology to be available for production as soon as H12022.
2. AOI or Vision series machines are gradually entering the supply chain of important packaging and testing process customers.
3. PCB machines have been developing toward high-margin products. Now we are developing the related machines for ABF process customers, automatic high-end router and measuring the inner copper.



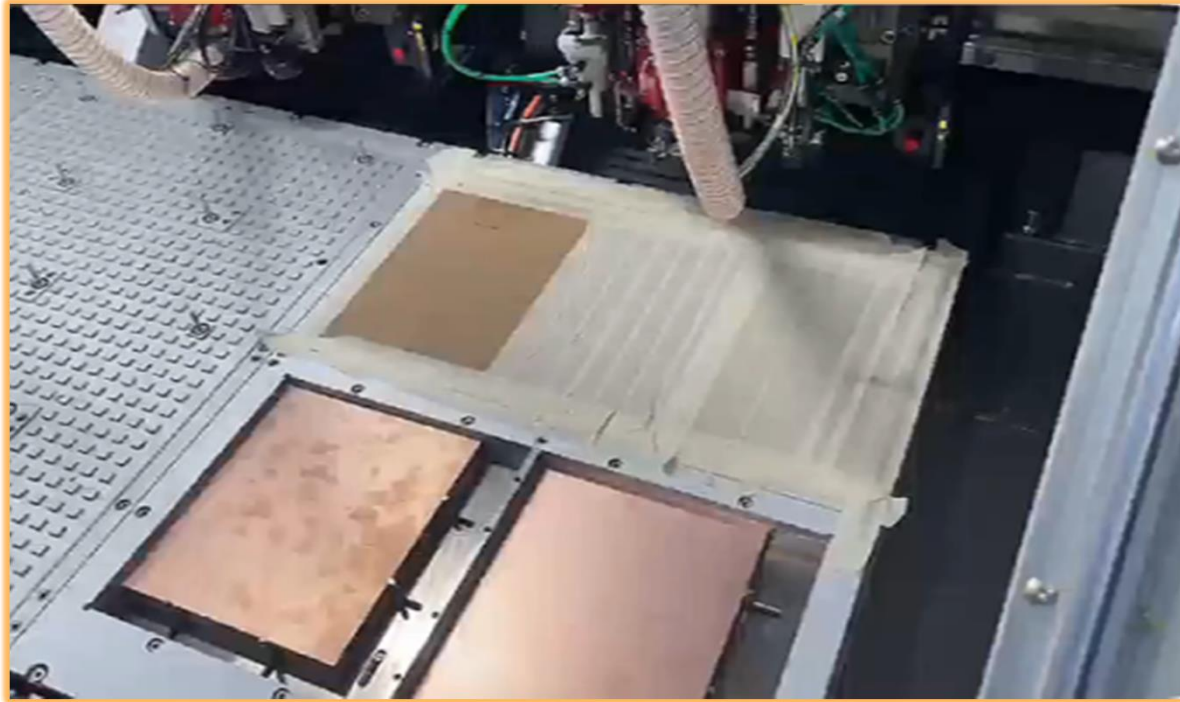
# ABF/BT process Machine



- High speed drilling.
- Applicable to ABF or BT process.
- Suitable for small hole drilling.



# Automatic high-end router Machine



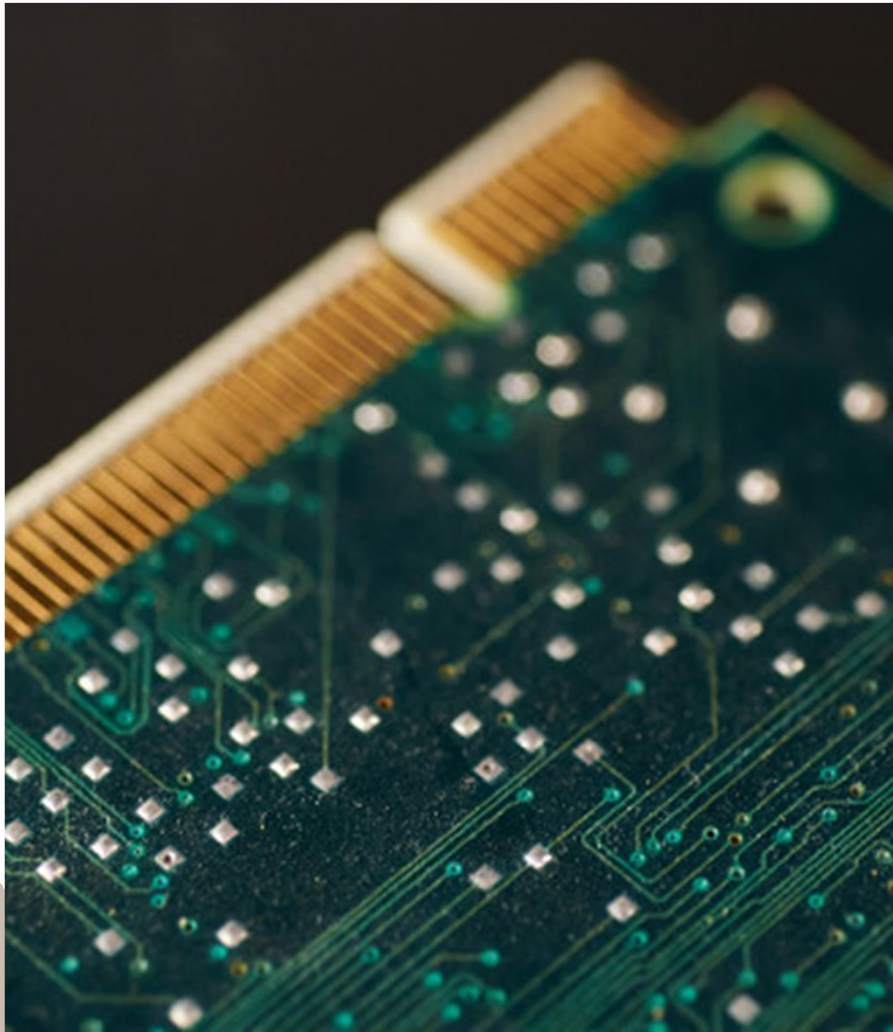
- It will be modular designed and can be flexible adjusted.
- Router efficiency will be doubled.
- It will help us into the market of ABC/BT process.



# Measuring inner copper Machine



- It will be used to assist the producing in servo boards, communication boards and automotive boards.
- It will help to enhance/upgrade the accuracy of high-end drilling machines.
- It will further expand our sales revenue and market share in high-end drilling machines.

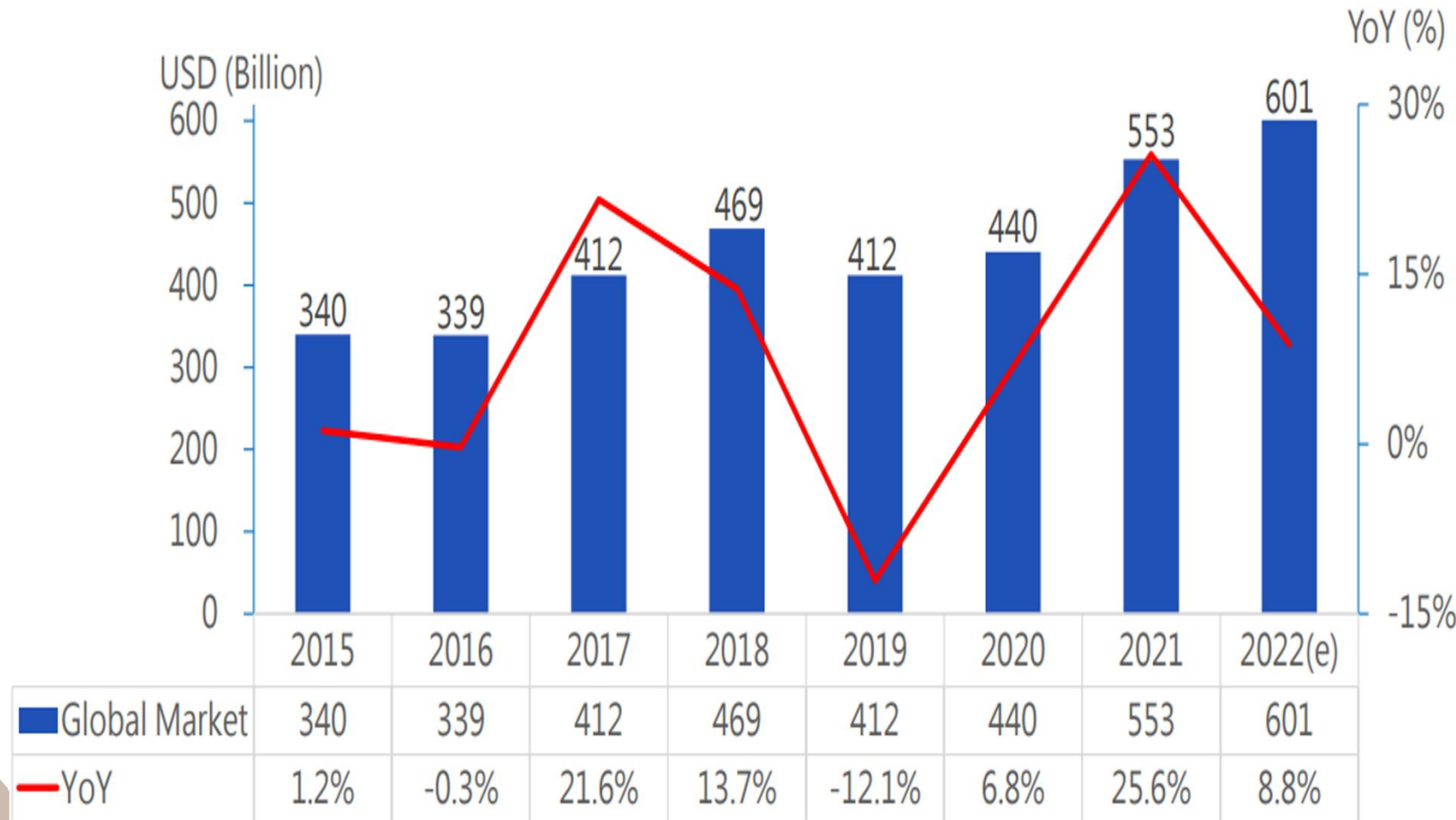


# Market analysis





# Global Semiconductor Market

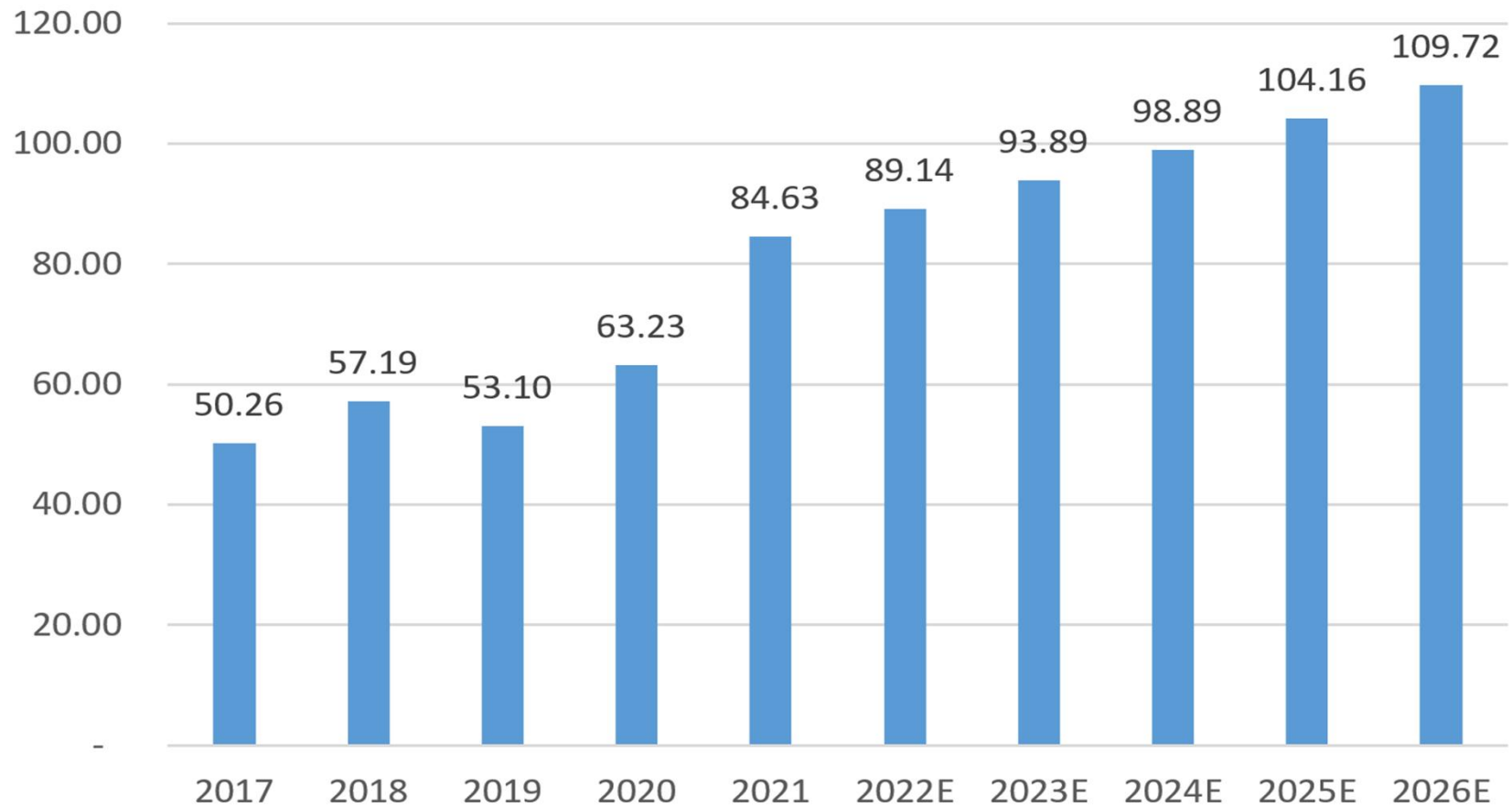


Source: WSTS, 2022.05.



# Global Semiconductor "Equipment" Market

USD Billion

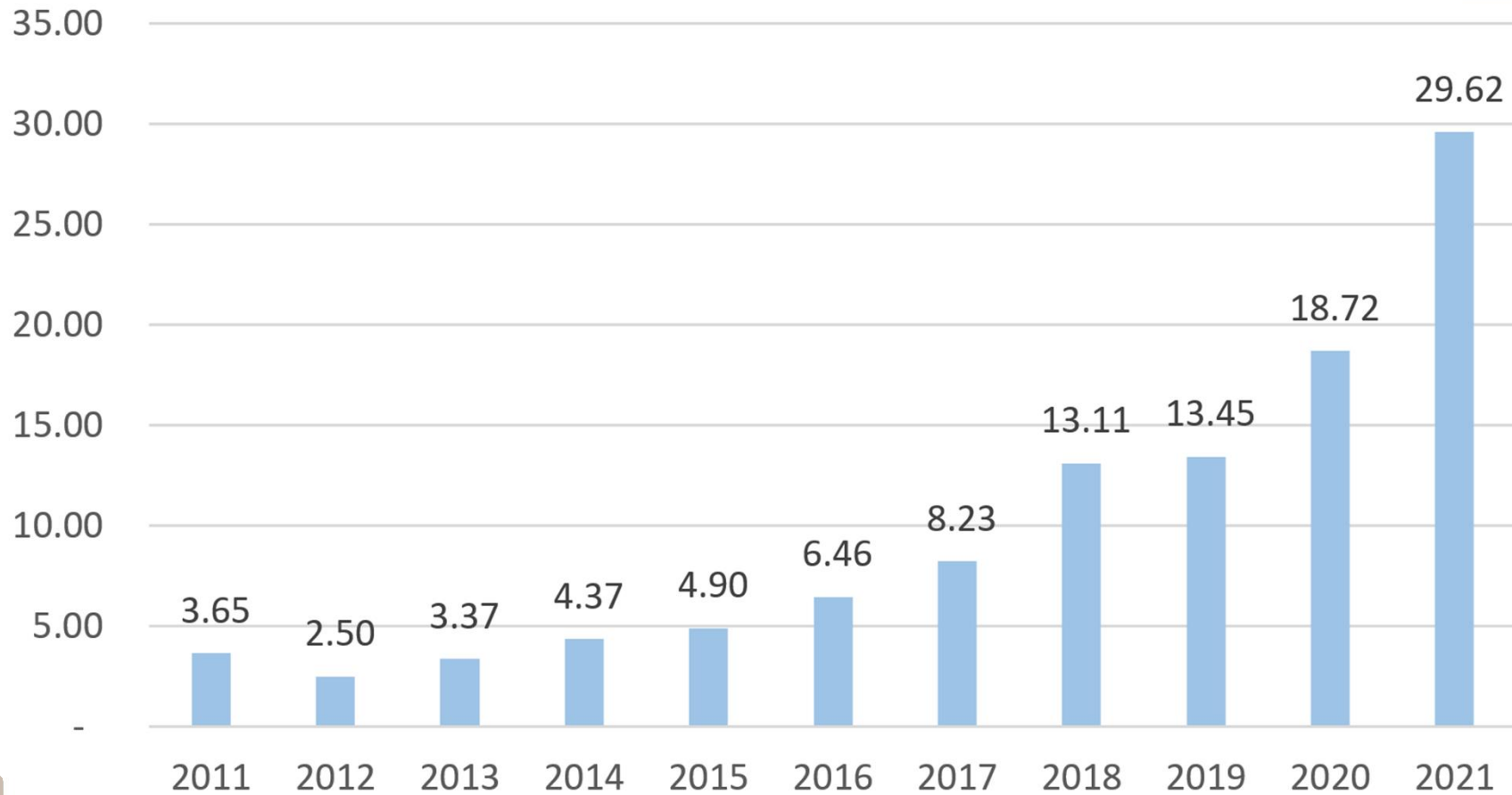


Source: <https://www.iiduo.cn/>



# China Semiconductor Equipment Market

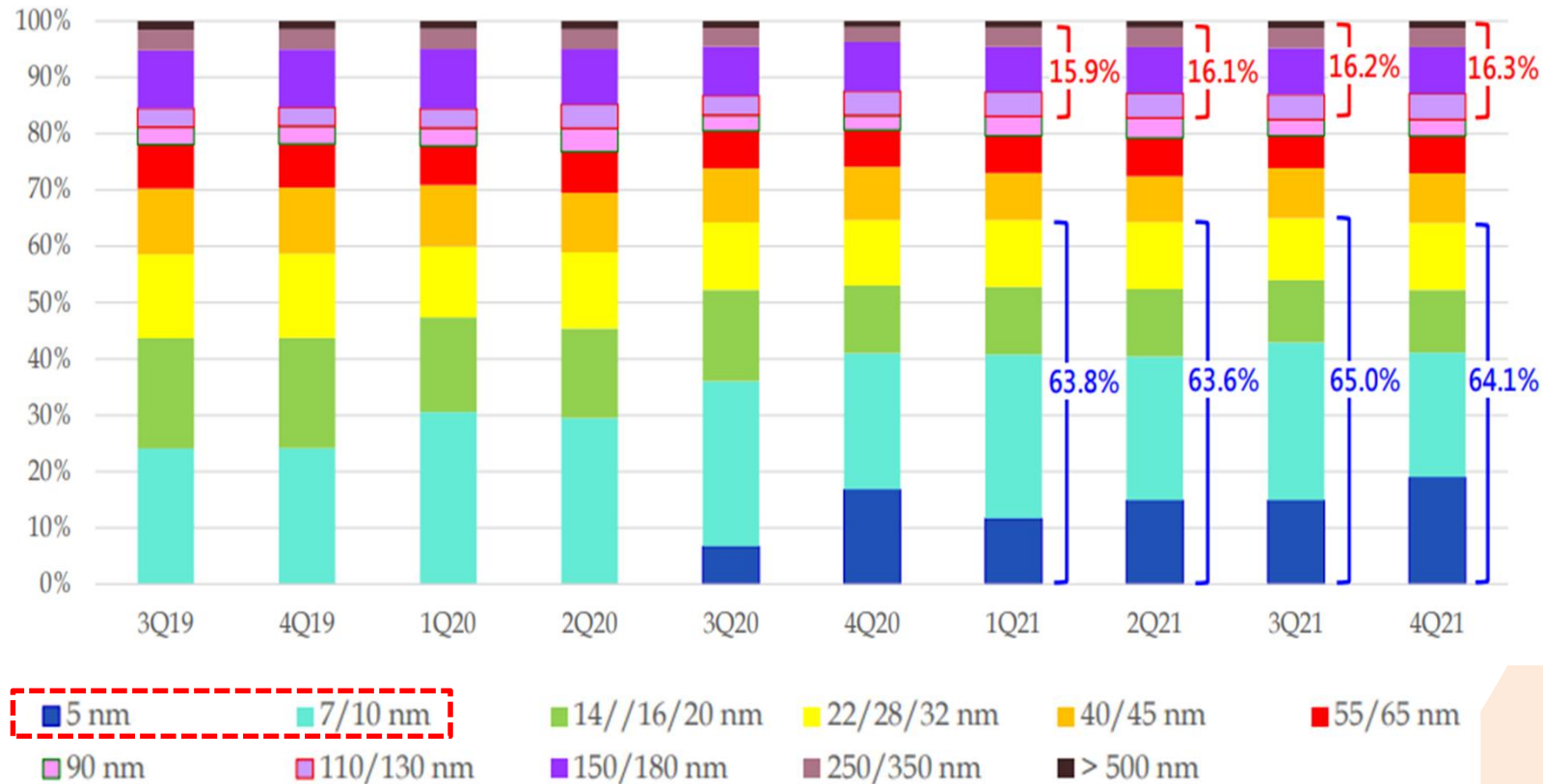
USD Billion



Source: <https://www.huaon.com/>.



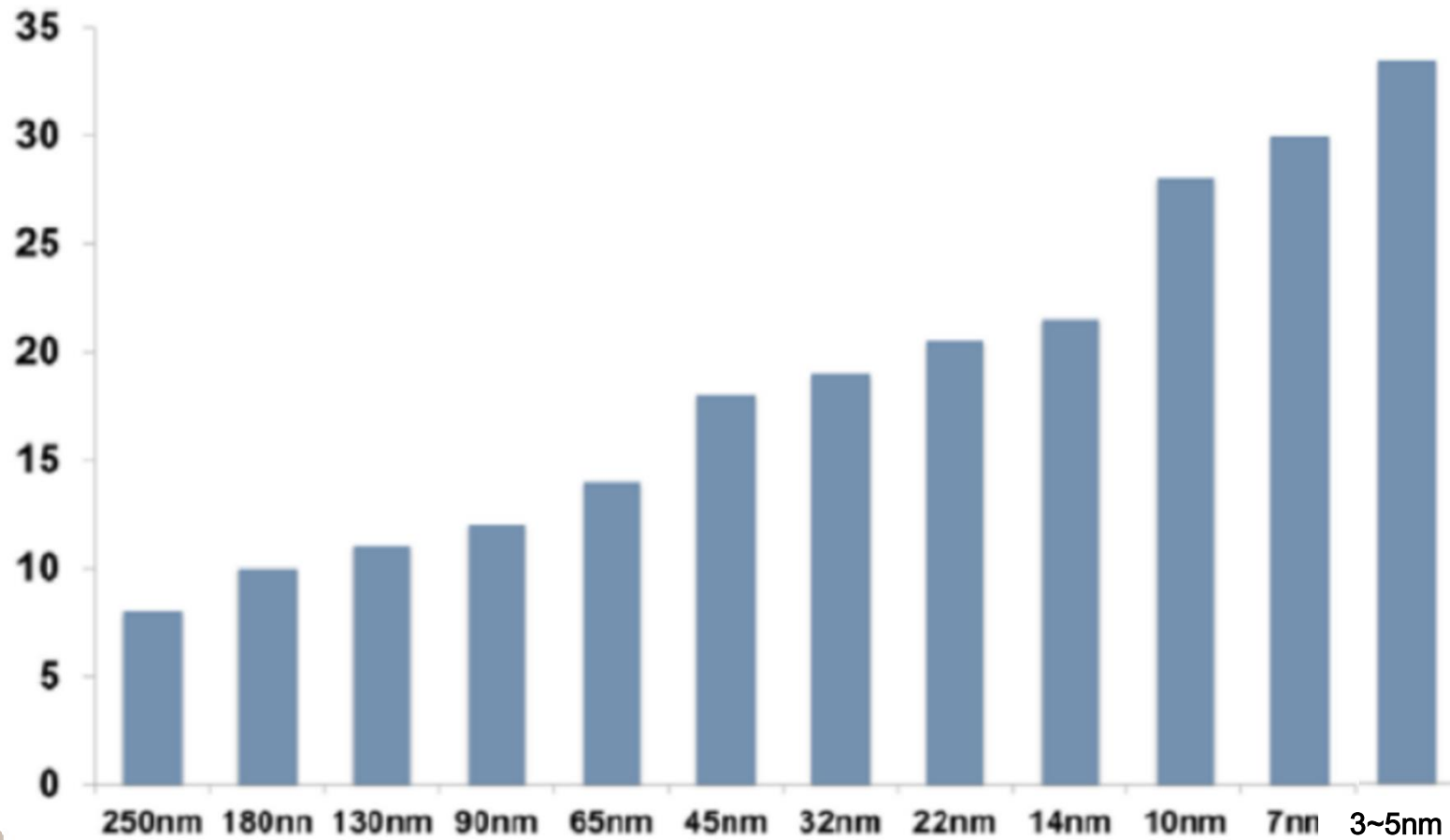
# Advanced process capacity in Semiconductor is growing



Source: TW MIC 2022.05.



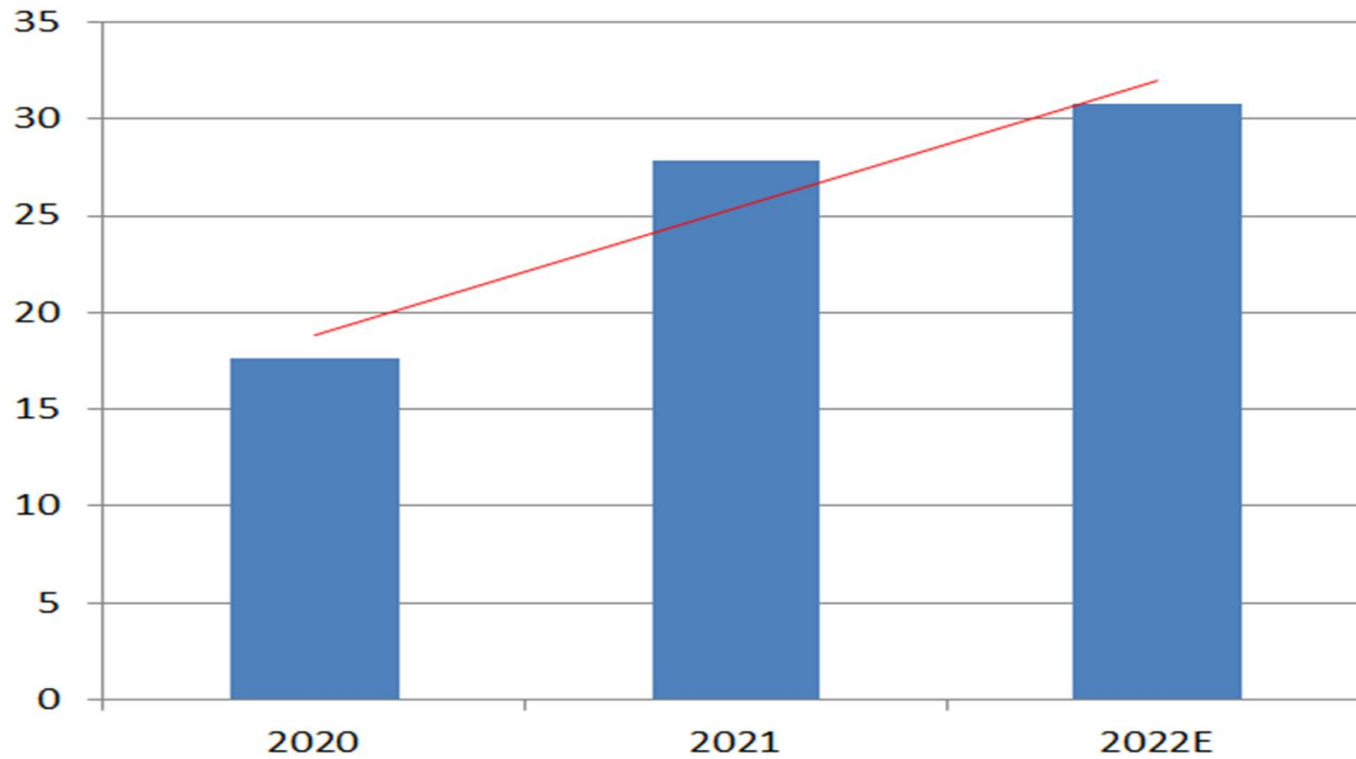
# CMP polishing process is increasing





# Global CMP Market

USD 100Million



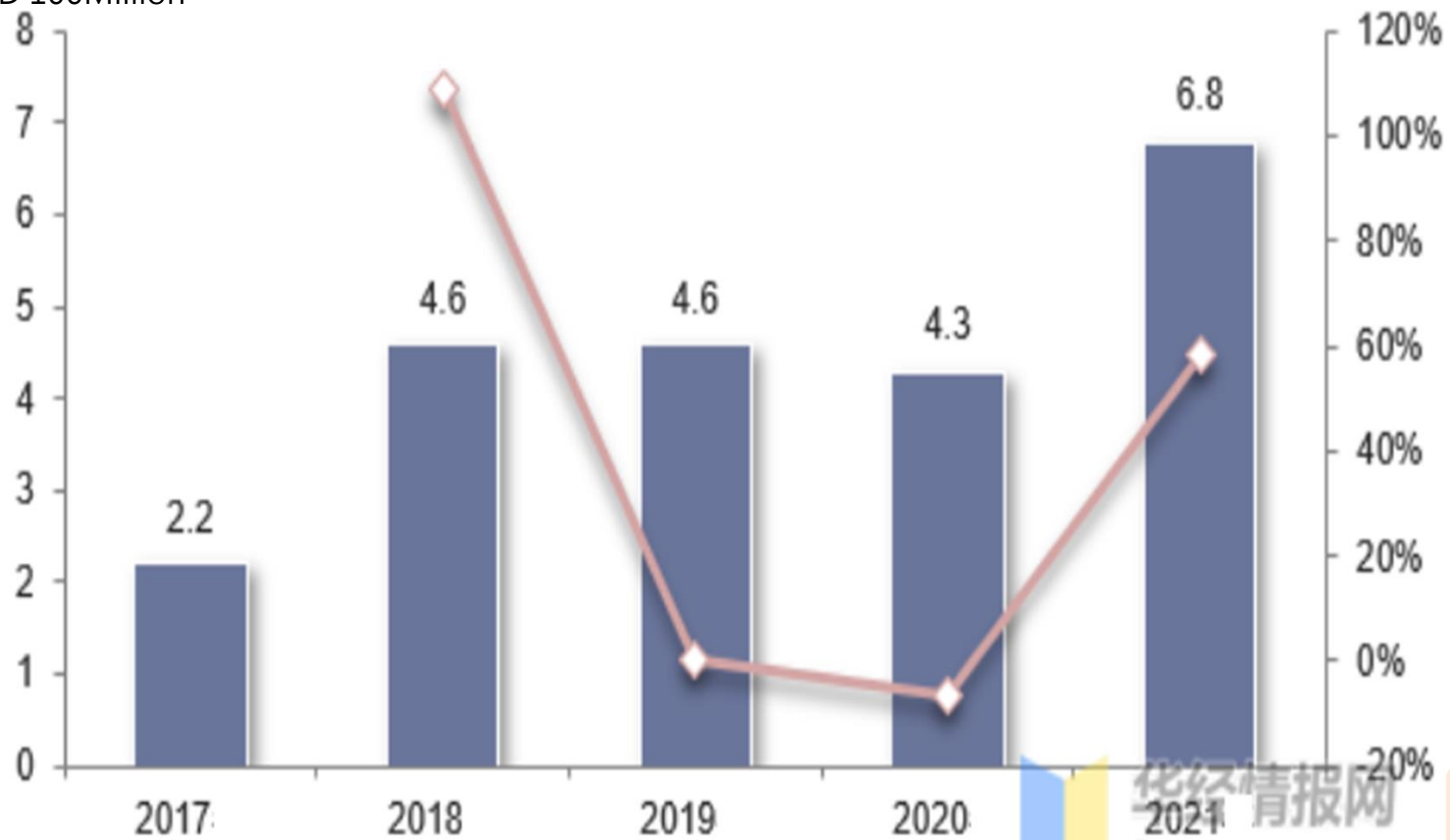
Source: <https://www.huaon.com/>.





# China CMP Market

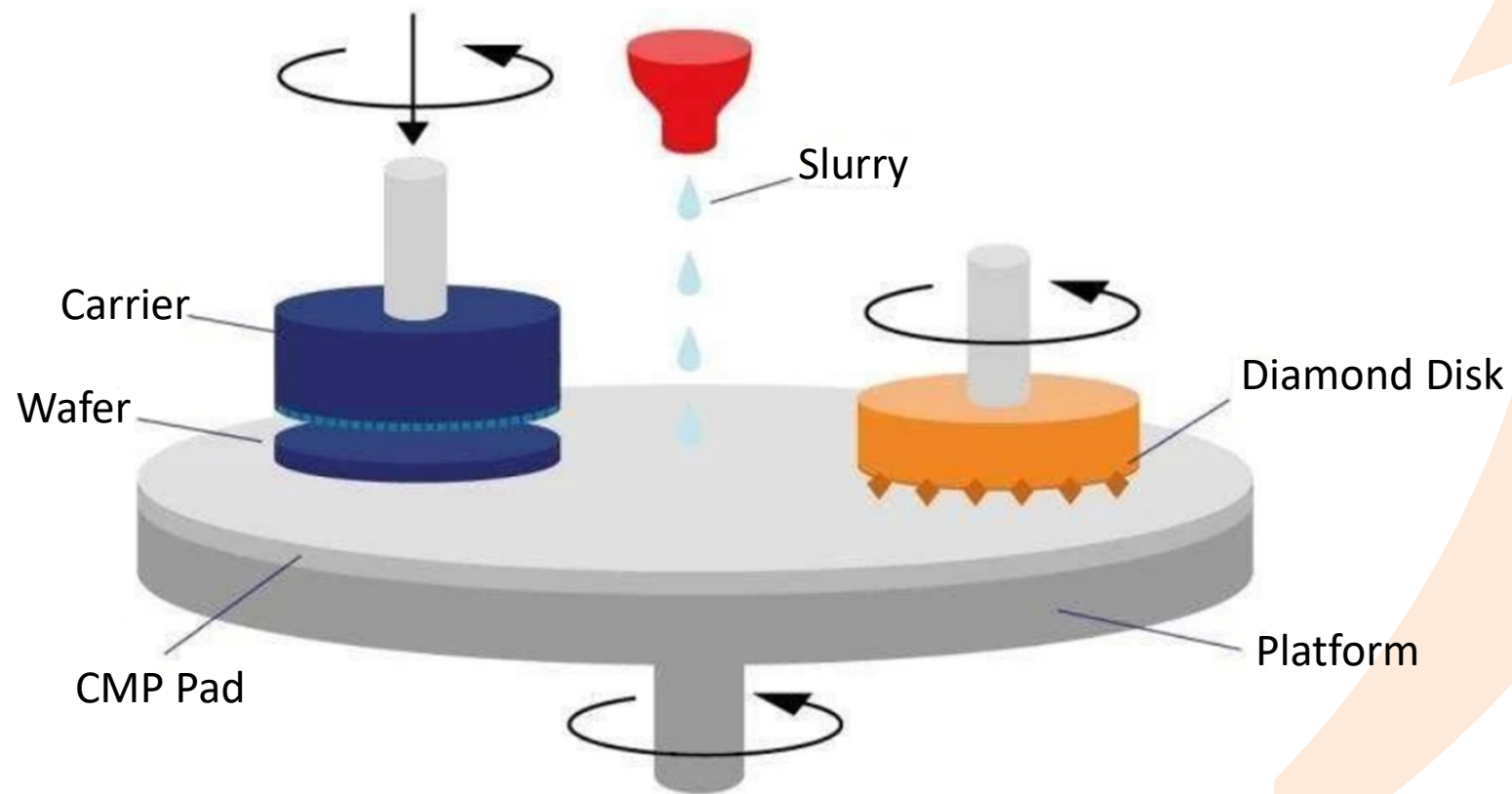
USD 100Million



Source: <https://www.huaon.com/>.



# CMP schematic diagram





# New PCB Application



**Highly Flexible  
Manufacturing**



**Automobile**

**New PCB  
Application**



**5G**



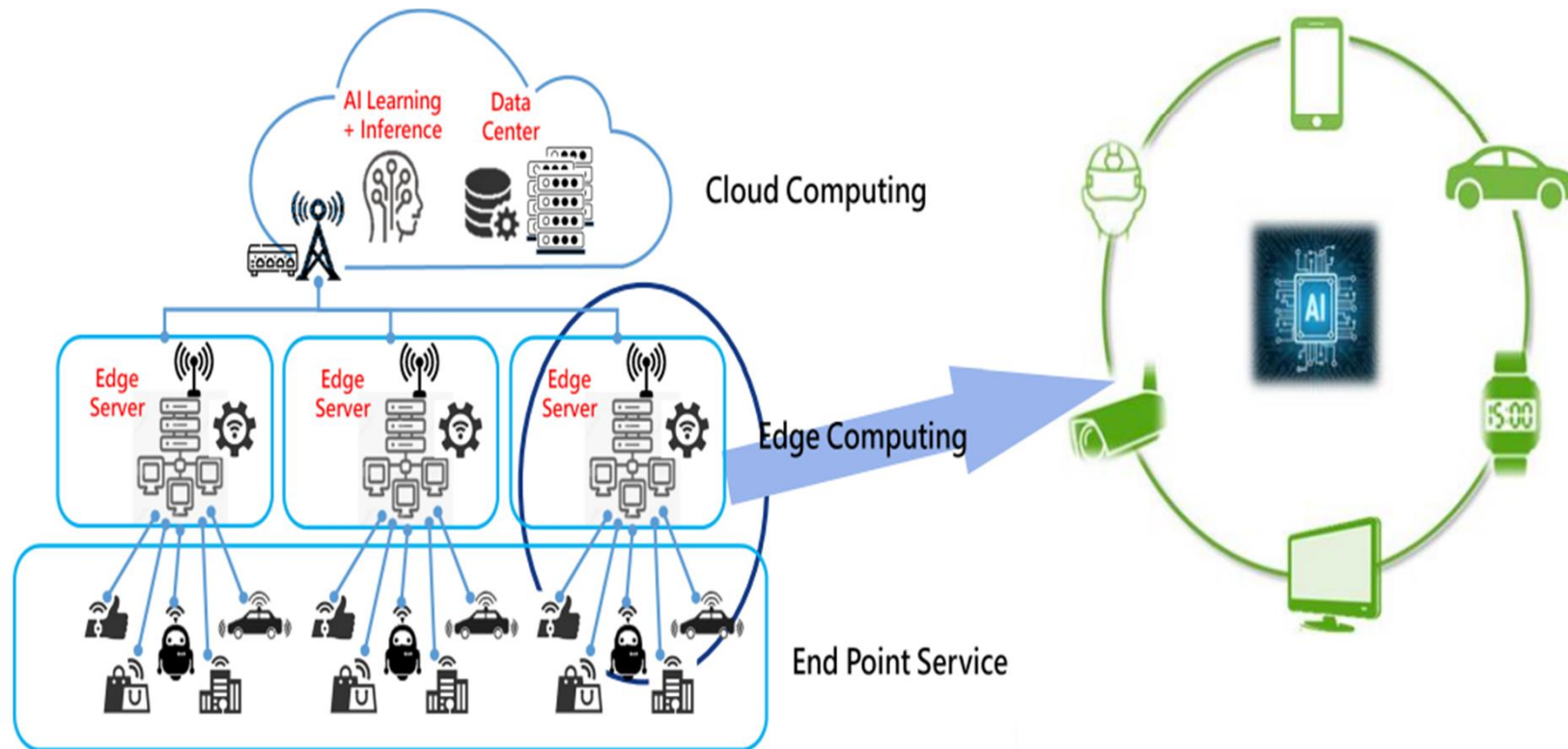
**Mini LED**



**High Performance  
Computing**



# New Applications Drive PCB & Semi Demand



Source: TW MIC 2022.05.



# New Applications Drive PCB & Semi Demand

|                          | NCAP 5 Star, AD L2   | AD L2+/L3                         | AD L4/L5                                     |
|--------------------------|--|-----------------------------------|--|
| Application*             | Automatic emergency brake/ forward collision warning<br>Parking assist<br>Lane keep assist | Highway assist                    | Valet parking<br>Highway and urban chauffeur |
| Radar<br># of modules**  | Corner MRR/LRR<br>$\geq 3$<br>New: Corner, starting 2020                                   | MRR/LRR<br>$\geq 6$<br>Corner     | Imaging<br>$\geq 10$<br>Surround             |
| Camera<br># of modules** | $\geq 1$   | $\geq 4$                          | $\geq 8$                                     |
| Lidar<br># of modules**  | 0  | $\leq 1$                          | $\geq 1$                                     |
| Others                   | › Ultrasonic   | › Ultrasonic<br>› Interior camera | › Ultrasonic<br>› Interior camera<br>› V2X   |

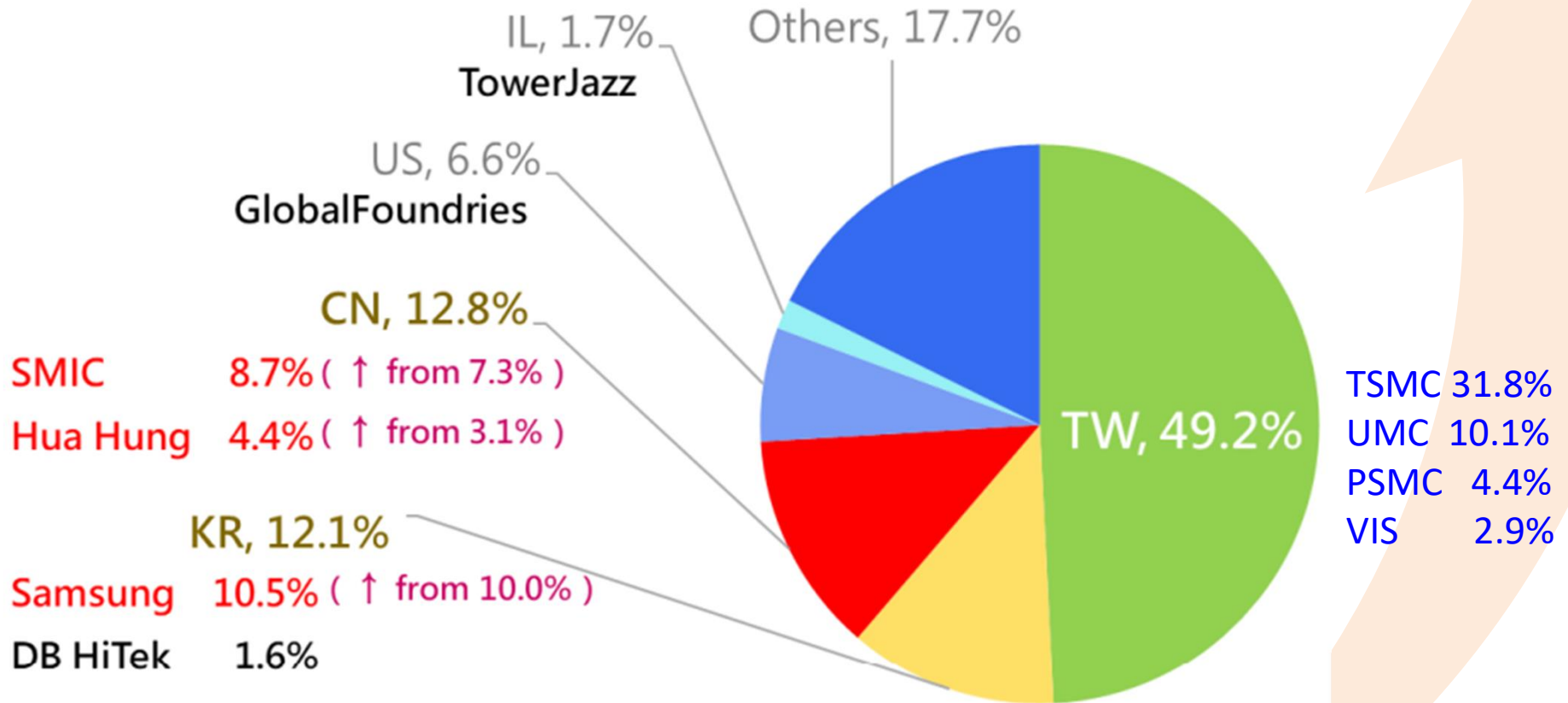
\* Source: VDA (German Association of the Automotive Industry); Society of Automotive Engineers

\*\* market assumption

Source: Infineon › STMicroelectronics › MIC 2022.05.

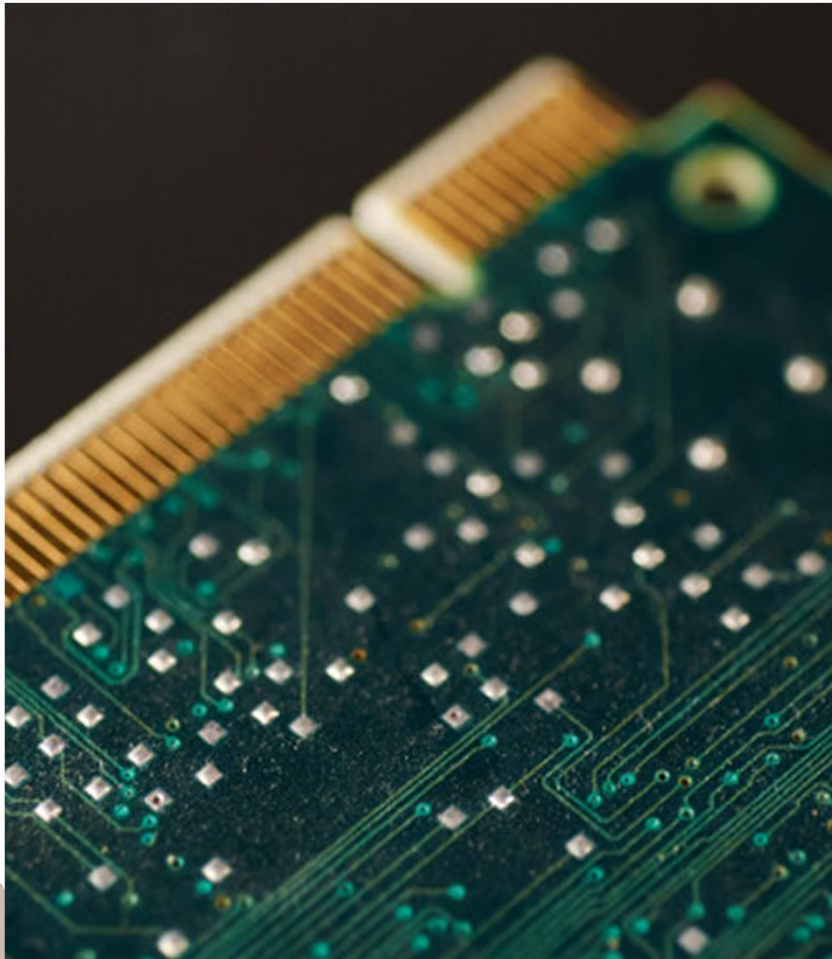


# Capacity in Global foundry



Source: Semi/MIC 2022.05.





# Appendix



# Products in PCB industry

PCB  
Drilling M/C



Standard type



CCD type



Depth Control

PCB  
Routing M/C



Standard type



CCD type

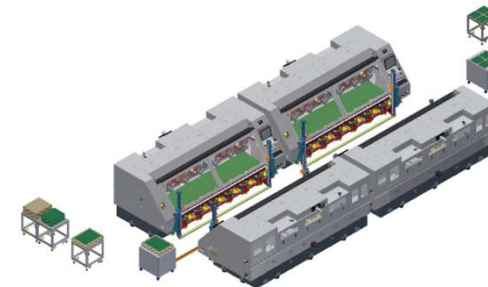


Depth Control

PCB  
Automation



Adapted with 1 Spindle Drilling machine



Adapted with 6 Spindle Drilling machines



# Advantages to meet New requirements

| Method                           | Feasibility        | Current Situation   |
|----------------------------------|--------------------|---|
| Enhancing mechanical performance | Not Easy to reach  | <ol style="list-style-type: none"><li>1. The precision requirements for PCB equipment are getting higher and higher.</li><li>2. The various functional advantages in the past are now the basic standard equipment in every manufacturer.</li></ol>   |
| Upgrade Software                 | High Entry Barrier | <ol style="list-style-type: none"><li>1. New PCB designs have characteristics of high-density, multi-layer, high-frequency or high-speed, thus the requirements of accuracy are much higher in position, depth controlling and precision.</li><li>2. We(Ta Liang) improve the visual measurement , Cloud management and eliminate PCB expansion and contraction by software program (the position of X, Y axis, and the depth of Z axis).</li><li>3. TL has self-developed controller and abilities to develop the programs to meet customers' demands, unlike other competitors still using outsourcing software and programs.</li></ol> |



# Products in Semi con. industry

## Handler Series



IC Chips-Test Handler



IC AVI Handler



IC P&P Test Handler

## Vision System Series

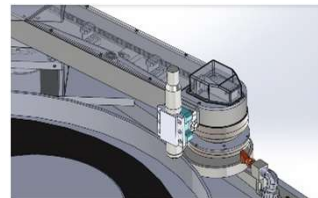


Wafer Type



None Wafer Type

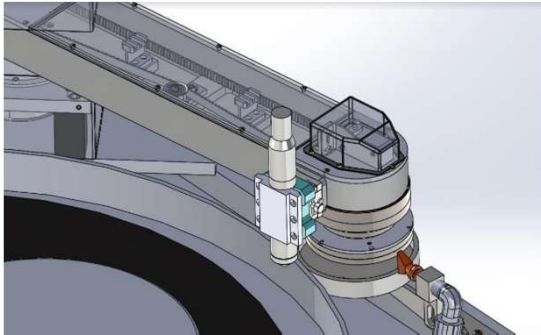
## Metrology



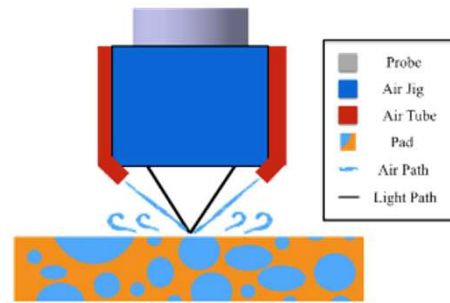
CMP Pad Metrology



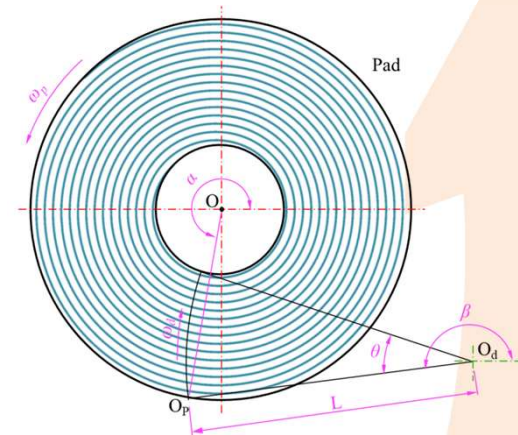
# CMP PAD Metrology



CMP PAD Metrology



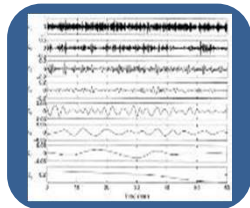
Water Layer Purge



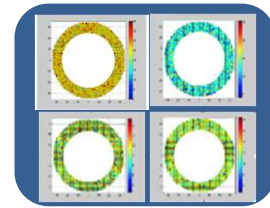
Trajectory Analysis and Reconstruction



Data Collection



In-process Data Monitor



Topography Analysis



• Kn



• Kn



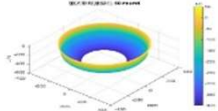
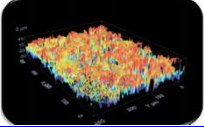
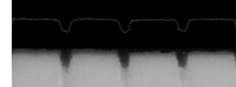
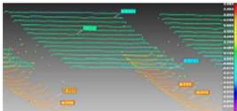
# Metrology Patent

| CMP PAD Patent   | Number/Application       |
|--|--------------------------|
| Instant finishing method of CMP pad  | I695754 (R.O.C.)         |
| CMP pad Metrology method for chemical and mechanical equipment                                     | Applying (R.O.C.)        |
| Method for Repairing Polishing Pad in Real time  | Applying (USA)           |
| Detection Method and Detection Apparatus for Polishing Pad of Chemical Mechanical Polishing Device | Applying (USA)           |
| Signal Analysis with AI module   | Will Apply (R.O.C., USA) |





# CMP Pad Metrology Advantage

| Items   | Ta Liang  | Sensofar   | WaferMasters  | NOVACAM   |
|---------|---|--|---|---|
| Source  | Self-developed  | Foreign  | Foreign   | Foreign   |
| Type    | In-situ /Standalone   | Standalone   | Standalone  | Standalone  |
| Request | Dynamic   | Static   | Static  | Static  |
| Mode    | Extensive   | Single Point   | Single Point  | Single Point  |
| Diagram |  |  |  |  |

| Items                  | Before                    | After                                   |
|------------------------|---------------------------|---|
| Roughness              | Can' t be Measured        | Real-time Measured Monitoring           |
| Morphology             | Limited sampling Measured | Real-time Large Area Monitoring         |
| Abrasion               | Limited sampling Measured | Real-time Large Area or Zone Monitoring |
| Micro Structure height | Limited sampling Measured | Real-time Measured Monitoring           |



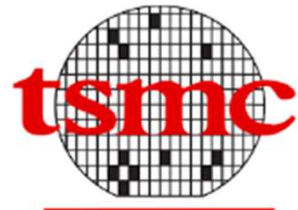
# Customers(PCB M/C)

The following table lists the customers shown in the image, organized by their approximate position in the oval:

| Customer Name  | Customer Name                                  | Customer Name                                      |
|--|--|--|
| 健鼎科技<br>TRIPCO TECHNOLOGY CORPORATION                  | 崇达 SUNTAK                                      | PSA 瀚宇博德   |
| 兴森科技<br>FASTPRINT                                      | COMPEQ<br>華通電腦股份有限公司                           | GCE<br>金像電子股份有限公司<br>Gold Circuit Electronics Ltd. |
| 臻鼎科技<br>Zhen Ding Tech.                                | 博敏电子<br>BOMIN ELECTRONICS                      | dynamic  |
| 南亚<br>gbm 精成科技股份有限公司<br>Global Brands Manufacture Ltd. | SCC<br>深南电路                                    | MEIKO  |
| KB 建滔化工集团<br>Kingboard Chemical Holdings Ltd.          | CHAMPION ASIA 广东骏亚<br>GUANGDONG CHAMPION ASIA  | FASTPRINT  |
| Unimicron  | 世运<br>OLYMPIC                                  | KINWONG<br>景旺电子                                    |
| MULTEK   | CEE<br>中京电子                                    | 沪电股份   |
| 生益科技<br>SYTECH   | GOWORLD  | SAMSUNG  |
| FOUNDER<br>方正  | KCE<br>ELECTRONICS<br>Public Company Limited.  | CHIN POON  |
| 景碩科技   | tpt 志超科技股份有限公司<br>TAIWAN PCB TECHVEST CO., LTD | 依利安達<br>Elec & Eltek                               |
| 競國集團<br>APCB GROUP                                     | 相互股份有限公司<br>Mutual-Tek Industries Co. Ltd      | 胜宏科技   |
|  | APEX<br>APEX CIRCUIT                           |  |



# Customers(Semi con. M/C)



台灣積體電路製造股份有限公司  
Taiwan Semiconductor Manufacturing Company, Ltd.



ASE GROUP  
日月光集團



矽品精密



KL-TECH



泰科天润  
Global Power Technology Co., Ltd.



---

# Thank You!

Ta Liang Technology Co., Ltd.