

# MPI Corporation 6223.TT

READY FOR THE TEST™

## Presentation Disclaimer

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The information herein contains forward-looking statements. We have based these forward-looking statements on our current expectations and projections about future events. Although we believe that these expectations and projections are reasonable, such forward-looking statements are inherently subject to risks, uncertainties and assumptions about us, including, among other things: the intensely competitive Semi-conductor, and LED industries and markets; Cyclical nature of the semiconductor industry; Risks associated with global business activities; General economic and political conditions. All financial figures discussed herein are prepared pursuant to IFRS. All audited figures will be publicly announced upon the completion of our audited process.

# MPI Divisions

Since 1995



Probe Card

Since 2001



Photonics Automation

Since 2014



Advanced Semiconductor Test

Since 2015



Thermal Test







Since 2021



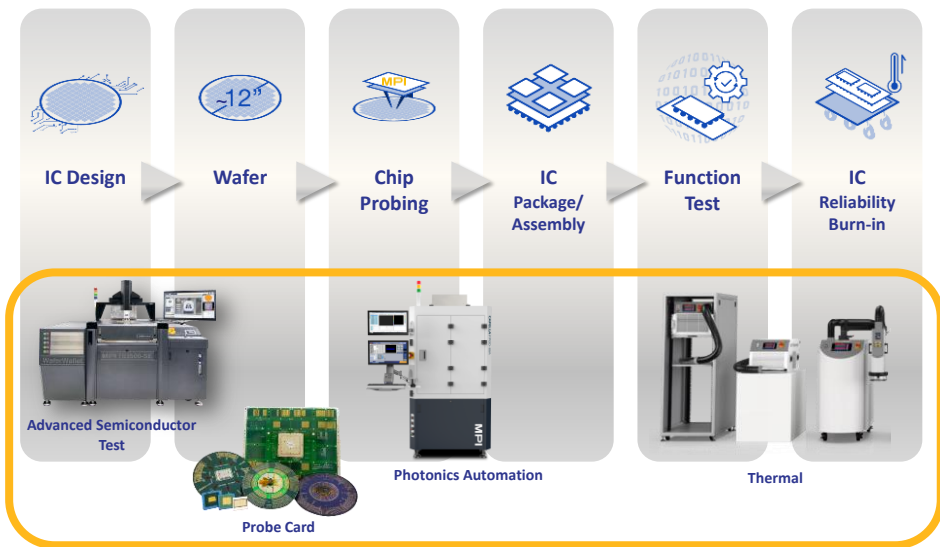
Celadon Systems

# MPI Global Presence



Worldwide			Taiwan				
 MPI America CA, USA (2017)	 MPI Suzhou Jiangsu, CN (2017)	 Celadon Systems MN, USA (2021)	 Headquarters Hsinchu, TW (2000)	 Luzhu Office Kaohsiung, TW (2006)	 2 <sup>nd</sup> Production Site Hsinchu, TW (2012)	 Xinyu Office Hsinchu, TW (2014)	 3 <sup>rd</sup> Production Site Hsinchu, TW (2021)

# MPI-The Powerhouse of Testing Solutions



## Agenda



### Business Contents

- Probe Card
- Photonics Automation
- Thermal & AST



### Financial Statements

**MPI**CORPORATION

# Probe Card

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## **MPI**Probe Card

Advanced Wafer Sort Test Solutions

**Vertical / MEMS** Probe Card

**Cantilever** Probe Card



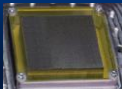
### Features



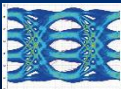
Fine Pitch



MEMS



High Pin Count



High Speed



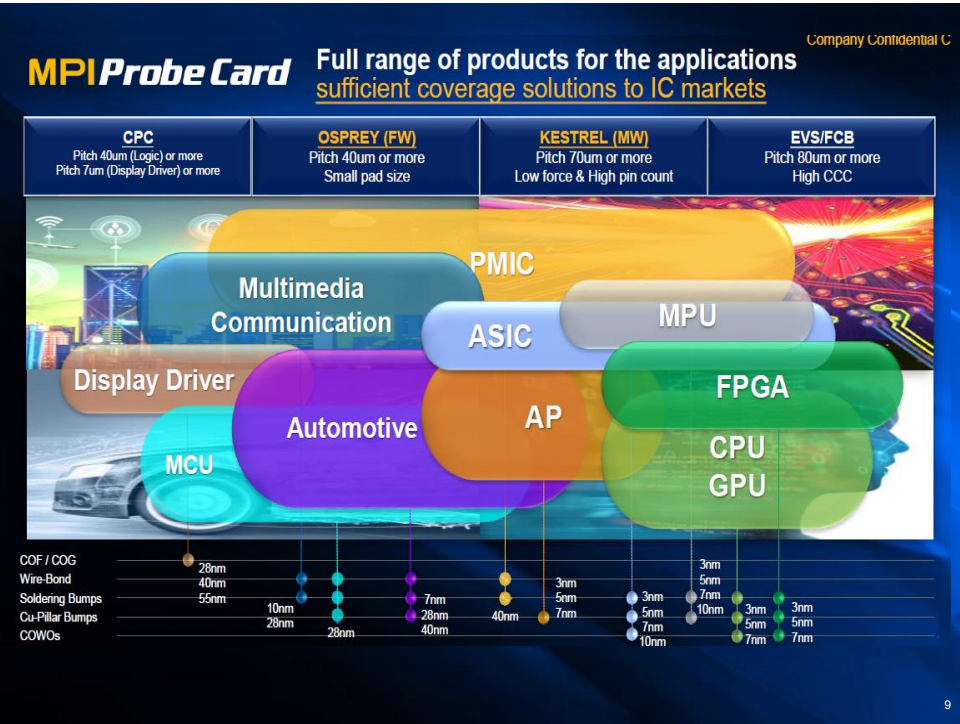
Substrate



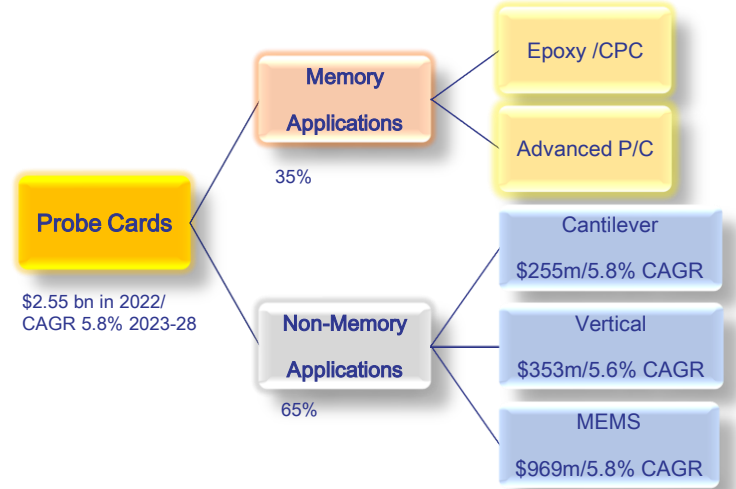
Hand-wired



RF



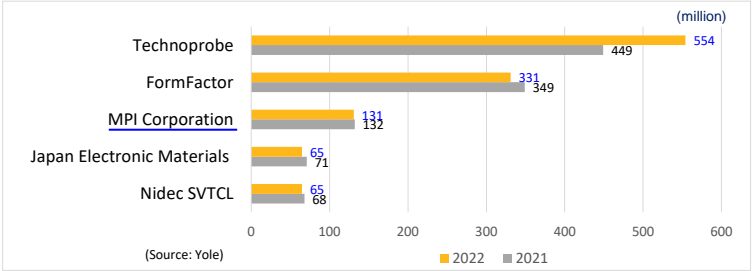
Global Probe Card Market Update



Source: Yole Insight

## Top 5 Non-Memory Probe Card Vendors

	(Rank)	2017	2018	2019	2020	2021	2022
Technoprobe	Italy	2	2	2	2	1	1
FormFactor, Inc.	USA	1	1	1	1	2	2
MPI Corporation	Taiwan	3	3	3	3	3	3
Japan Electronic Materials	Japan	4	4	5	5	4	4
Nidec SVTCL	Singapore	5	5	4	4	5	5

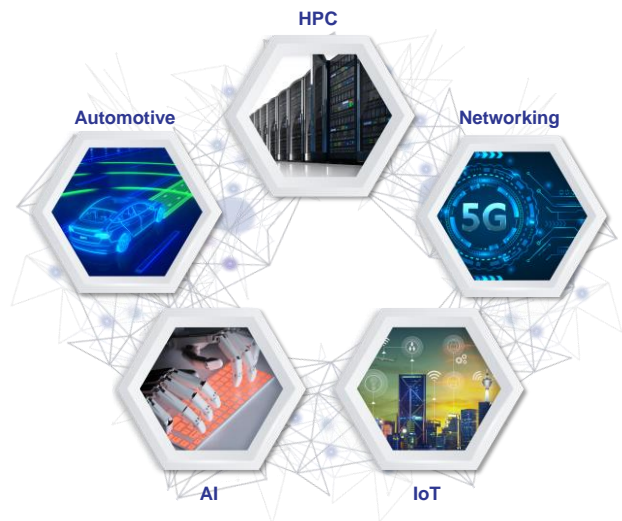


## Probe Card: Total Solution Provider

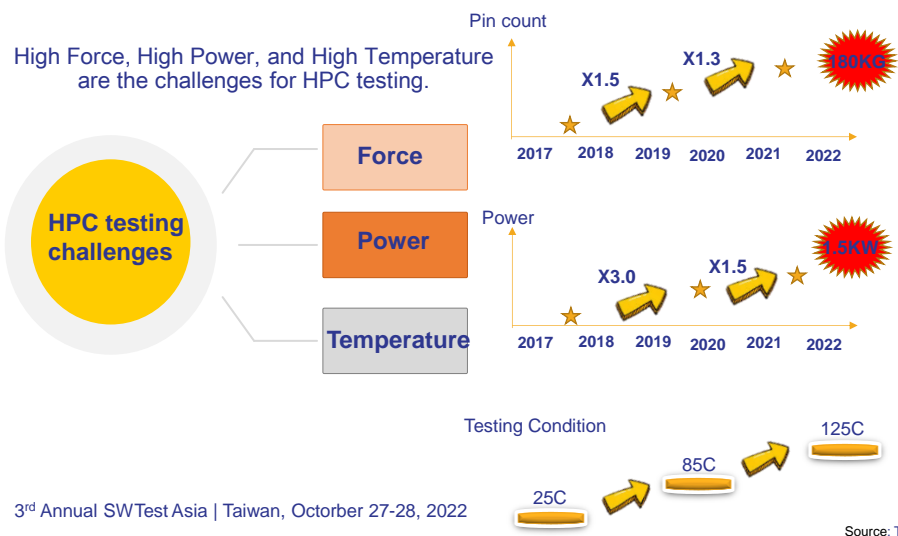
- **Comprehensive Product Range for Circuit Testing** 全方位的產品布局  
MPI provides omnidirectional products to global customers, including fine pitch CPC, high speed VPC and high pin count MEMS solutions.
- **Solid Global Clientele** 堅實的國際合作夥伴  
MPI works closely with worldwide market leaders, especially for the AI, HPC application related.
- **Complete Probe Card Solution** 完整的探針卡整合方案  
Provide probe head, substrate(MLO/MLC/MLOC) and PCB one-stop service.

# HPC Demand

The demand of HPC ( High Performance Computing ) growth rapidly.



# HPC Challenges





# Interface Technical Complexity Check in

Complexity Trends are on pace to be at 2022 targets( 1 Cycle) or in some cases beyond

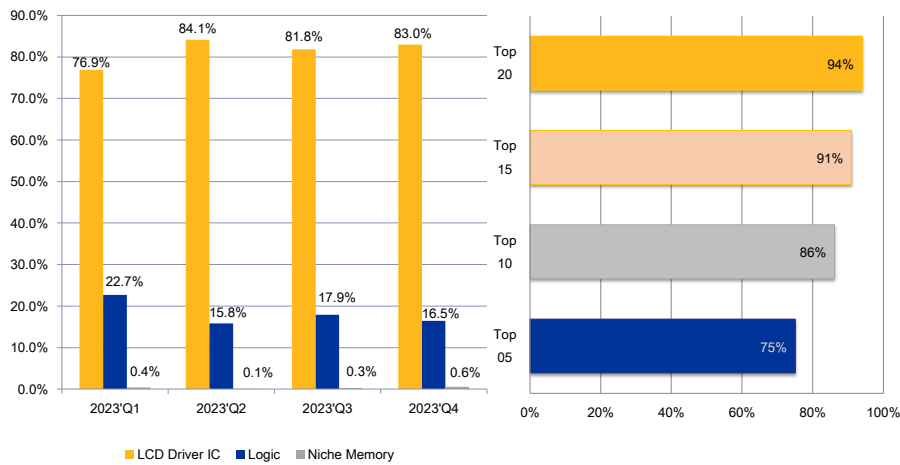
“2x4 Scaling”=2xPins, 2xPerformance, every 4 years



		2018	2022	2026
		Level 4	Level 5	Level 6
Pin Density	Pin Pitch	90um	70um	50um
	Total Contact Force	80kg	150kg	250kg
I/O Speed	Digital	32Gpbs	64Gpbs	128Gpbs
	RF/mmWave	< 12 GHz	29 GHz	+60 GHz
Device Power	Main Power	900 mV	750mV	625mV
	Single Rail	35A	50A	100A
	Impedance	2.2 mOhm	1.4 mOhm	0.8 mOhm
Thermal	Self Heating	75 W		
	Operating Range	0 to +80C	0 to +105C	-20 to +125C
Most Expensive Probe Card		\$400K*	>\$500K	>\$700K

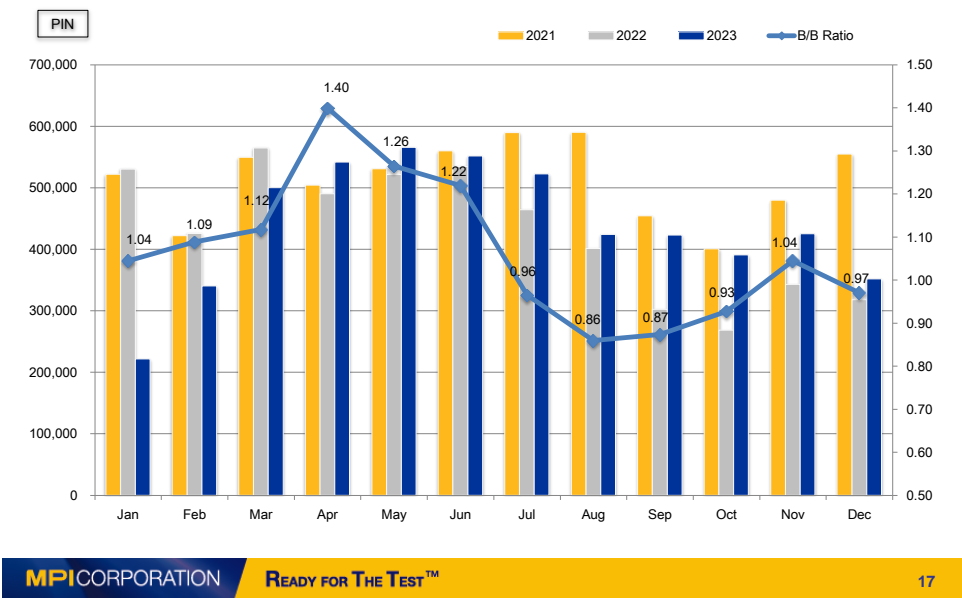
Source:Teradyne

# Product Mix of CPC (Cantilever)

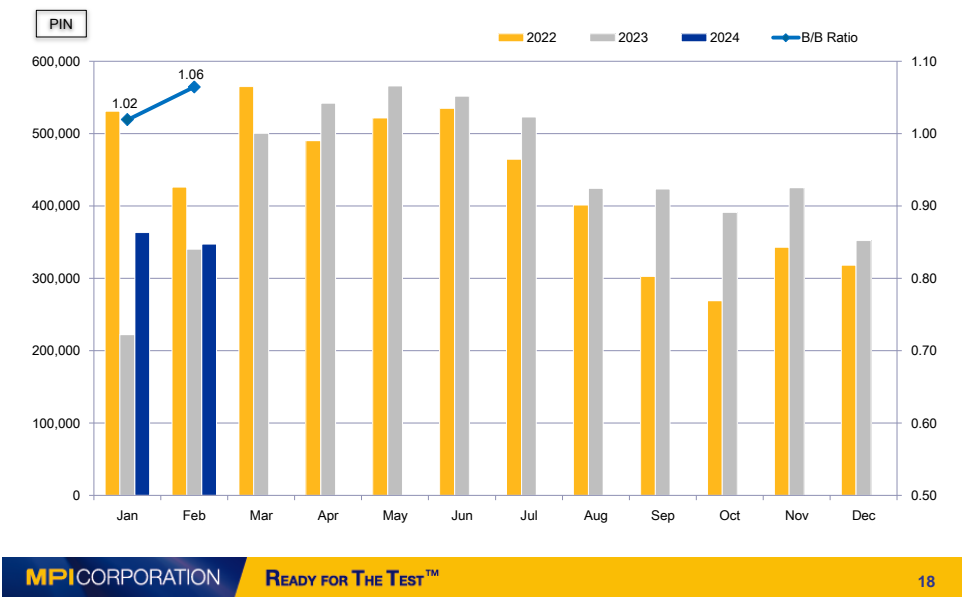




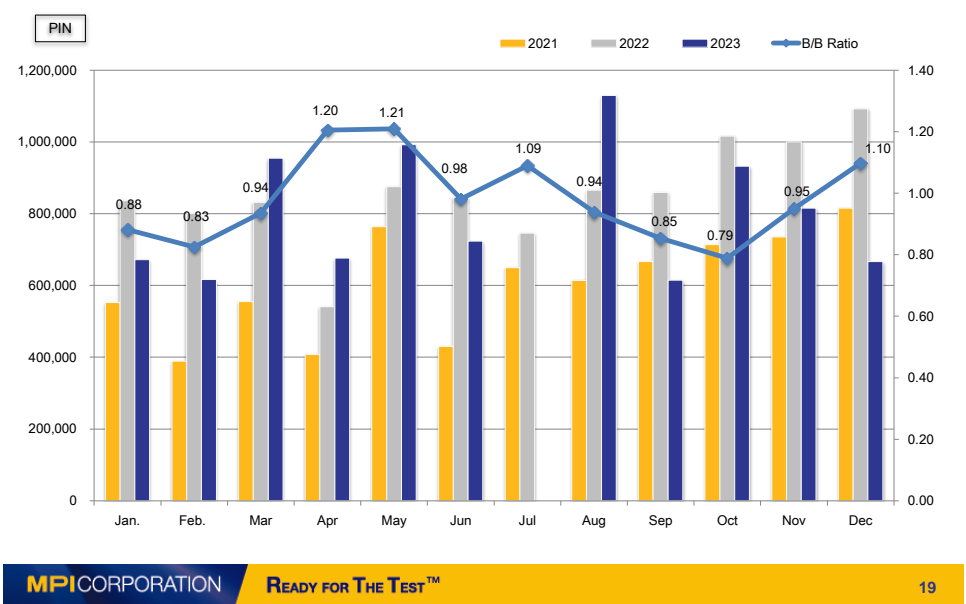
# CPC Pin-Shipment\_2023



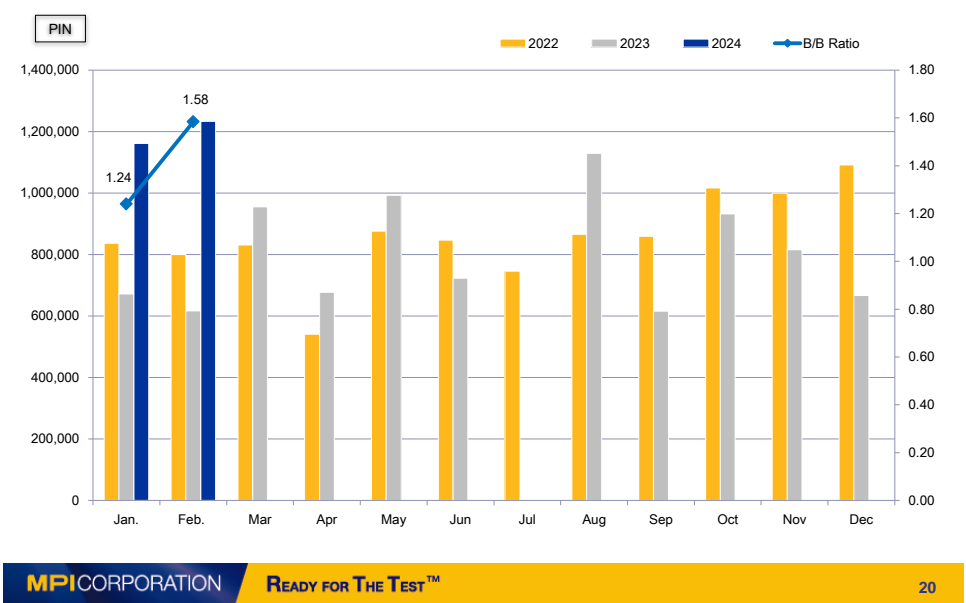
# CPC Pin-Shipment\_2024



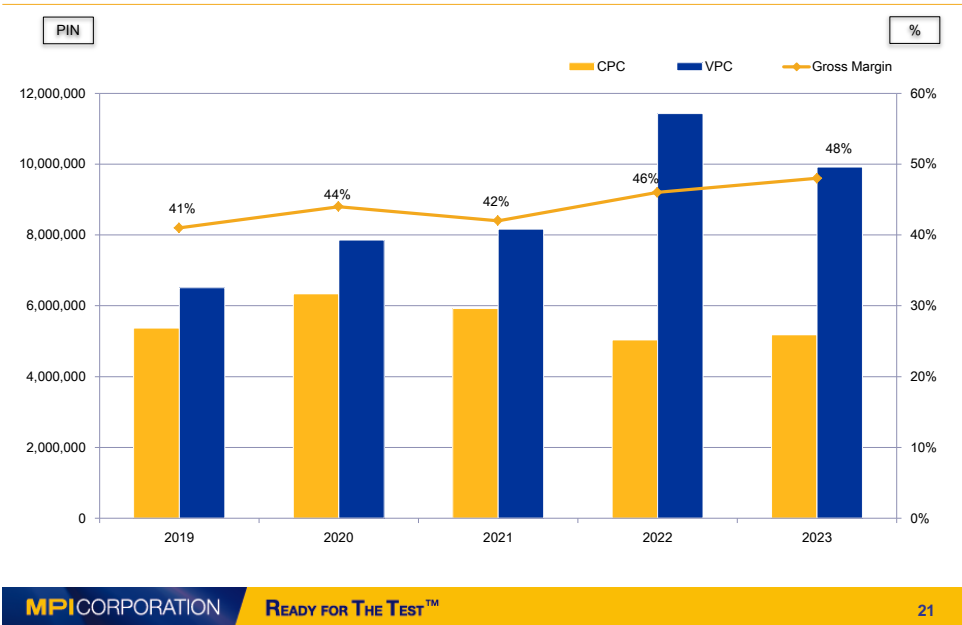
## VPC Pin-Shipment\_2023



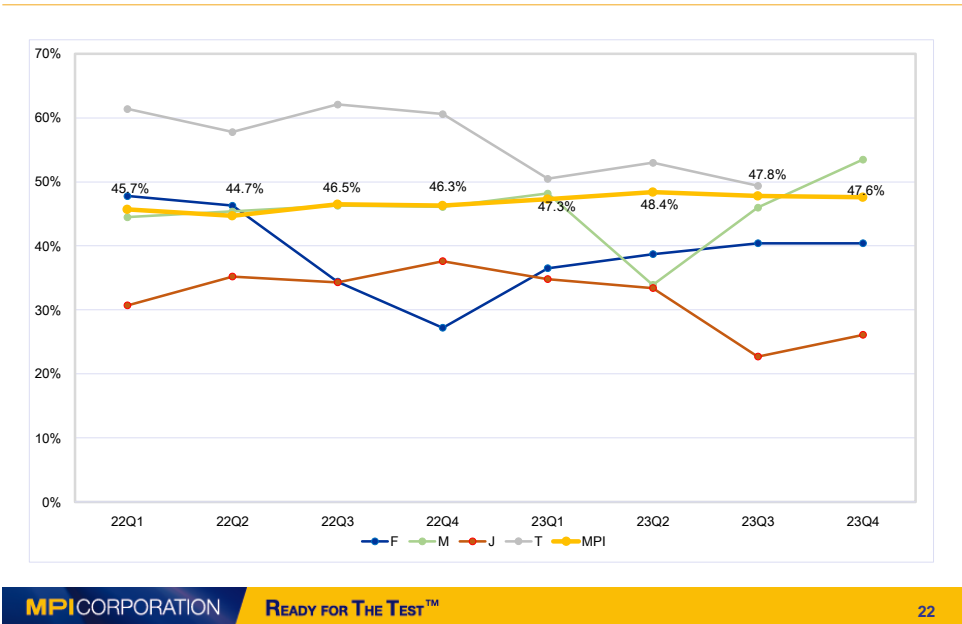
## VPC Pin-Shipment\_2024



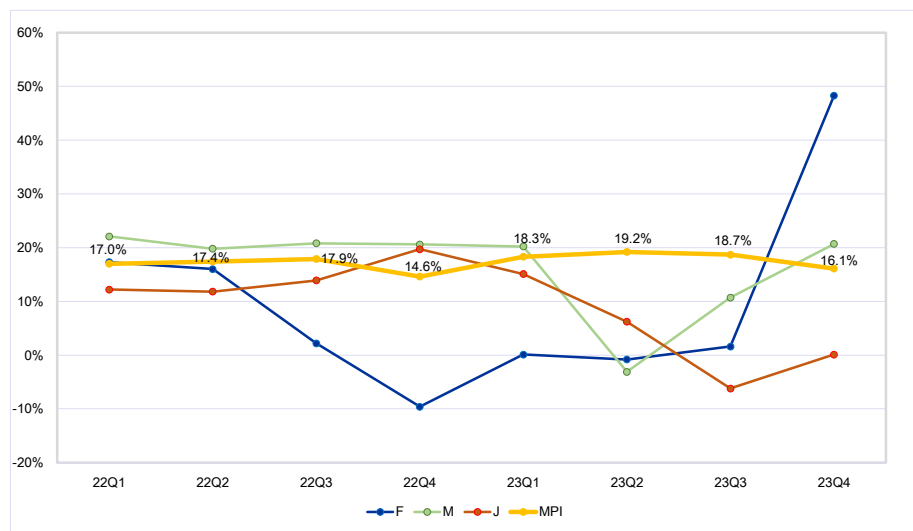
# CPC and VPC Yearly Status



# Gross Margin Between Global Peers



# Operating Margin Between Global Peers



# MPI Probe Card

Company Confidential C

Our Customer

The MPI is committing more than 800 customers globally to contribute to industrial development as well as providing testing industry advanced technology needs.

A collection of logos for various semiconductor and technology companies, including Samsung, Intel, Qualcomm, NVIDIA, AMD, Xilinx, and many others, arranged in a grid-like fashion.

# Photonics Automation

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## Product Portfolio and Capability



- **High Power VCSEL Wafer Testing**  
Wafer / Board Prober Development  
Testing methodology Development
- **VCSEL / Photo-Detector Testing**  
Wafer / Board Prober Development  
Testing methodology Development
- **uLED Mass Production Methodology**  
Wafer prober for large quantity die testing method
- **High Power VCSEL PKG Testing**  
PKG Handler Development  
Testing methodology Development
- **RF Character**  
Wafer Level RF Testing Integration
- **Panel testing platform development**  
Panel / Panel in-process testing platform
- **SiPh Die/PKG Platform**  
SiPh Handler Development

# Development Plan by Application



Optical Sensing	Optical Communications	Micro Display
<ul style="list-style-type: none"><li>➤ Focus on Sensing VCSEL Testing</li><li>➤ Production Wafer Prober in Low Temperature</li><li>➤ High Power Measurement Tool and Technology Development</li><li>➤ Flip Chip Wafer VCSEL testing Solution</li><li>➤ Package / Hybrid Device testing tool</li></ul>	<ul style="list-style-type: none"><li>➤ Focus on VCSEL/Photodetector Testing</li><li>➤ Wafer Prober for Dark / Responsivity / Capacity measurement</li><li>➤ RF Measurement Capability Development</li><li>➤ SiPh package testing approaching</li></ul>	<ul style="list-style-type: none"><li>➤ Lab and production wafer testing tool development</li><li>➤ Contacting Accuracy Improvement</li><li>➤ Innovative testing methodology</li><li>➤ Optical measurement in production methodology</li></ul>

## PA: Work With Market Leaders

● Value Enhanced Product Lines 客戶價值導向的產品線規劃

MPI’s experienced RD team comes across lighting and electrical fields with automation core technology that enables us to develop leading market solutions ie VCSEL & Micro LED.

● Solid Global Clientele 穩固的全球客戶群

MPI works closely with market leaders and international brand names for most advanced testing solutions.

● Continuous Product Innovation 持續的產品創新

Non stop RD investments helps MPI to provide high value added products that tackles clients’ testing bottleneck.

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# Thermal/AST

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**MPI**Thermal

Hot and Cold Air Flow  
Environmental Temperature Test

-100°C  +300°C  
**ThermalAir Series**  
Temperature Testing Systems



Applications & Industry Segments



Semiconductor



Automotive



Aerospace



Telecommunications



Fiber Optic



Electronics



Sensors



Advanced Technology



# Thermal: Customer Focus

- **Innovational Temperature System 創新的溫度測試系統**

Ongoing R&D investments in platforms and improvements leads MPI to meet customer demands. Thermal systems have a number of patents to provide efficient energy saving products that helps clients to fulfill ESG responsibility.

- **Top Skillful RD Team 頂尖優秀專業的研發團隊**

MPI's thermal solutions are developed by industry veterans with over 100 years of combined experience.

- **Deep Cooperation with Leading Customers for Engineering and Production demand**

與世界領導級大廠深度合作, 提供工程及量產需求

Product application expands to automotive , 5G/RF communication , fiber optic , and sensing fields.

MPI

Advanced Semiconductor Test

Engineering Probe Systems  
and  
RF Probe Products

50 – 300 mm

Water/Wafer

MPI TS3000-SE

26 – 110 GHz

Applications & Industry Segments

Device Characterization

High Power

RF & mmW

Design Validation

Failure Analysis

Wafer Level Reliability

Silicon Photonics

Laser Cutter

## AST: Unique Market Leader

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- **Unique Global Position 全球獨特的市場地位**

Combining Analytical probing solution and RF measurement core technology , MPI is top solution provider for full range hi-frequency response measurement.

- **VOC Design 客戶導向設計**

Design based on Voice of the customer to full-fill customers' needs.

- **Complete Solution 提供完整的解決方案**

Various series of products to cover wide range applications include Device Modeling, RF & mmW, WLR, High-Power, Failure Analysis, Extreme temperature test ...etc.

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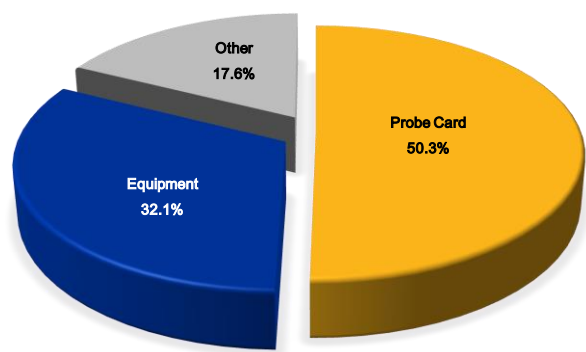
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# Financial Statements

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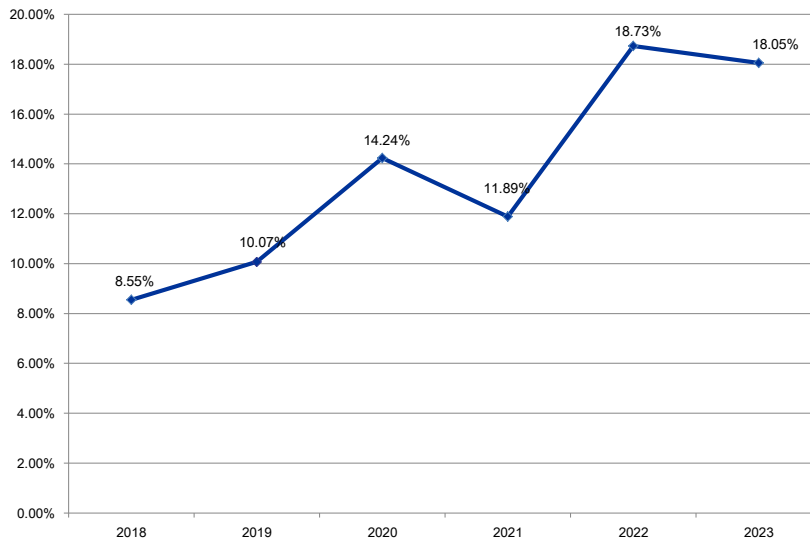
# 2023 Revenue Breakdown



# Solid Performance



## ROE



## Balance Sheet Highlight

NT\$ Million	2023		2022	
Cash and Cash Equivalents	2,579	21%	2,382	22%
Fixed Assets	5,535	45%	4,494	41%
Total Assets	12,439	100%	10,902	100%
LT Debt	1,511	12%	1,038	10%
Shareholders' Equity	7,620	61%	6,893	63%
EBITDA	1,582	19%	1,445	19%

\*EBITDA=operating income + depreciation & amortization expenses

# P&L

NT\$Million	2023		2022	
Net Sales	8,147,112	100%	7,411,929	100%
Cost of Goods Sold	4,250,049	52%	4,005,548	54%
Gross Profit	3,897,063	48%	3,406,381	46%
Operating Expense	2,425,698	30%	2,156,089	29%
Operating Income	1,471,365	18%	1,250,292	17%
Investment Income & Others	110,930		195,703	
Net Income (after tax)	1,309,575	16%	1,212,262	16%
EPS (after tax)	13.92		12.89	

