

Macquarie Asia TMT Conference 2024

MPI Corporation **6223.TT**

Speaker: Amanda Chiu
(Spokesperson)

READY FOR THE TEST™

Presentation Disclaimer

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



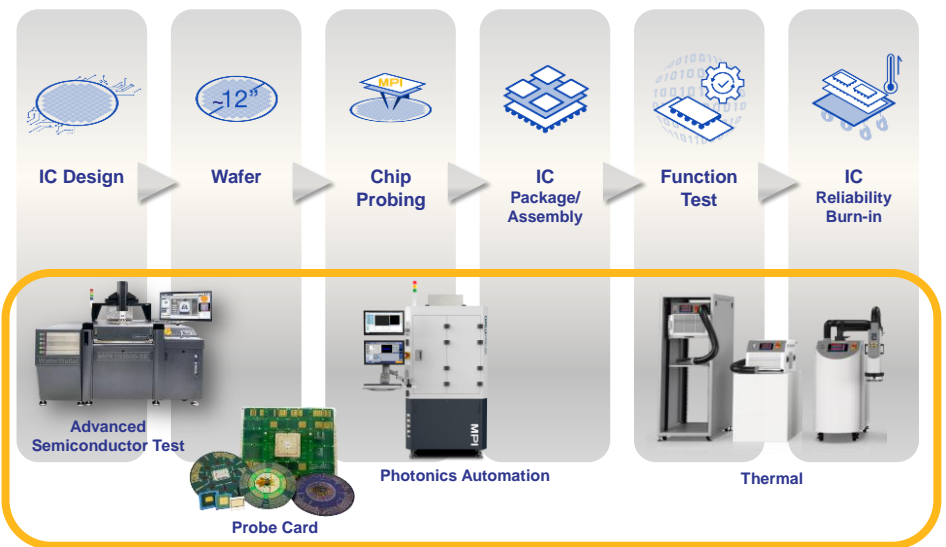
Celadon Systems

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)	2nd Production Site Hsinchu, TW (2012)	Xingpu Office Hsinchu, TW (2014)
						3rd Production Site Hsinchu, TW (2021)	

MPI-The Powerhouse of Testing Solutions



Agenda



Business Contents

- Probe Card
- Photonics Automation
- Thermal & AST



Financial Statements

MPICORPORATION

Probe Card

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MPI*Probe Card*

Advanced Wafer Sort Test Solutions

Vertical / MEMS

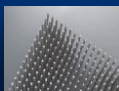
Cantilever



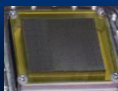
Features



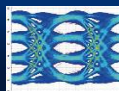
Fine Pitch



MEMS



High Pin Count



High Speed



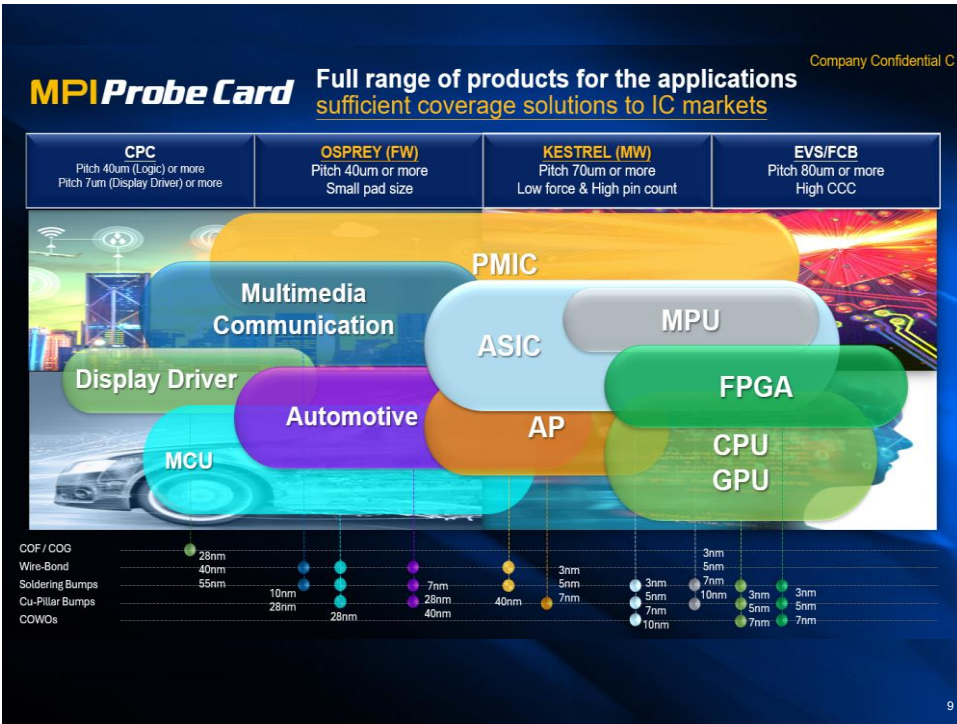
Substrate



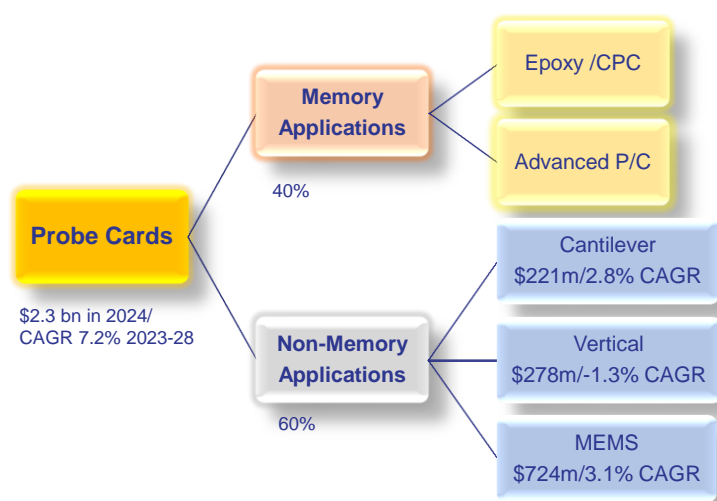
Hand-wired



RF



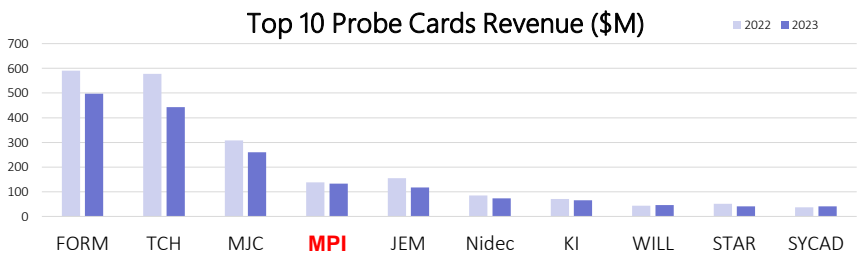
Global Probe Card Market Update



Source: Technisights

Total Own Make IC Probe Cards Venders

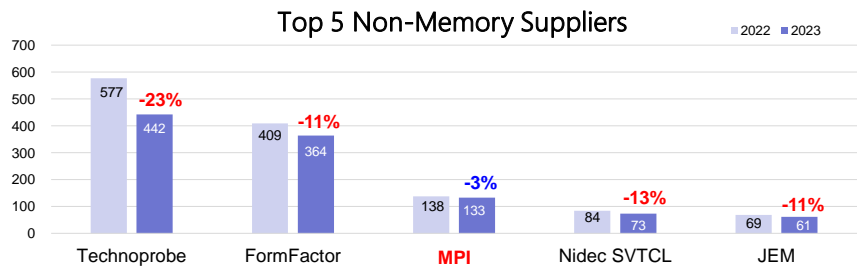
	(Rank)		2020	2021	2022	2023
FormFactor	USA	1	1	1	1	1
Technoprobe	Italy	2	2	2	2	2
Micronics Japan	Japan	3	3	3	3	3
MPI Corporation	Taiwan	5	5	5	5	4
Japan Electronic Materials	Japan	4	4	4	4	5



Source: TechnInsights

Top 5 Non-Memory Probe Card Vendors

	(Rank)		2018	2019	2020	2021	2022	2023
Technoprobe	Italy	2	2	2	2	1	1	1
FormFactor, Inc.	USA	1	1	1	1	2	2	2
MPI Corporation	Taiwan	3	3	3	3	3	3	3
Japan Electronic Materials	Japan	4	5	5	4	5	5	5
Nidec SVTCL	Singapore	5	4	4	5	4	4	4



Source: TechnInsights

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 low force MEMS solutions.

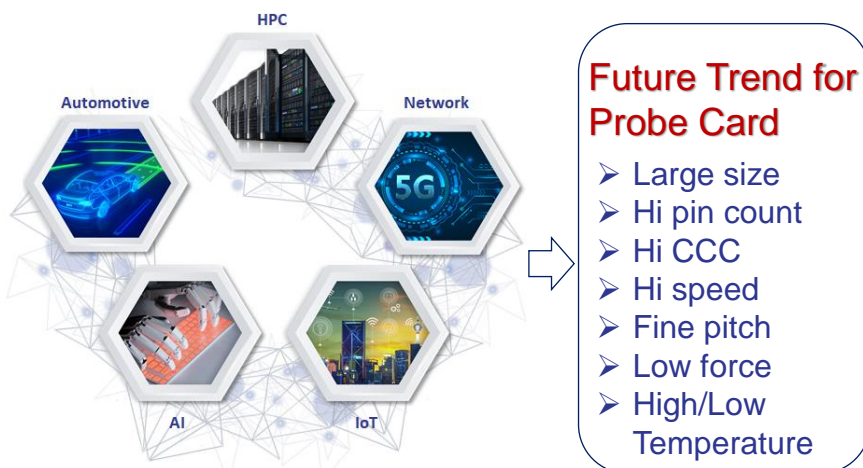
- **Solid Global Clientele** 堅實的國際合作夥伴

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

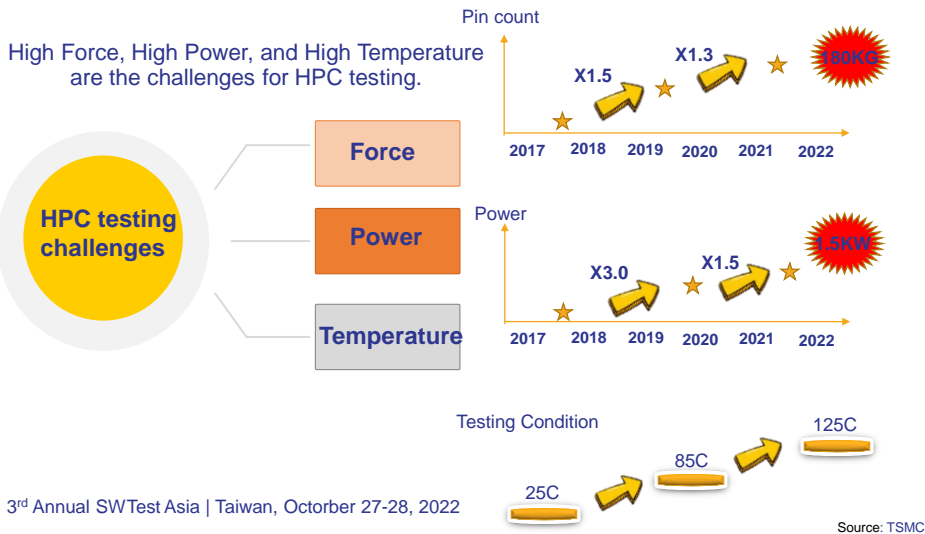
Provide probe head, substrate(MLO/MLC/MLOC) and PCB one-stop service.

Fast Growing Applications



Source: TSMC

HPC Challenges



Interface Technical Complexity Check in

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

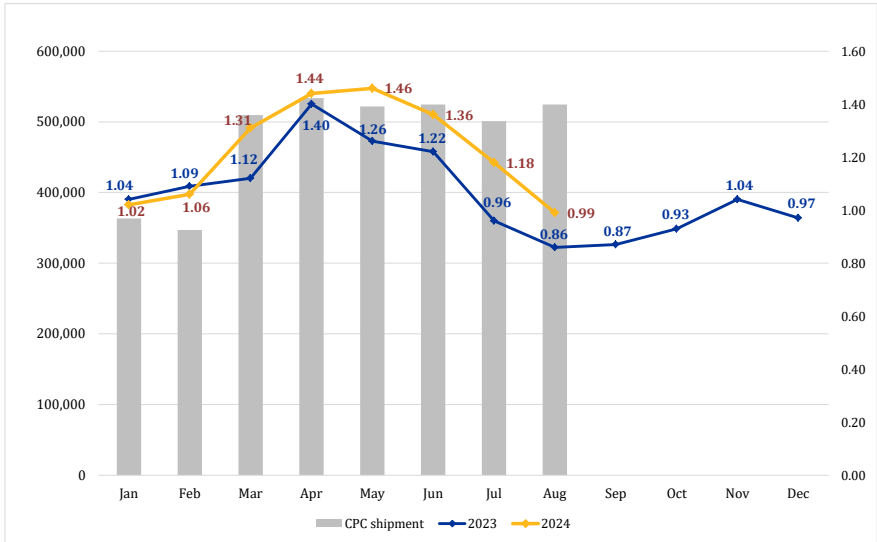
“2x4 Scaling”=2xPins, 2xPerformance, every 4 years



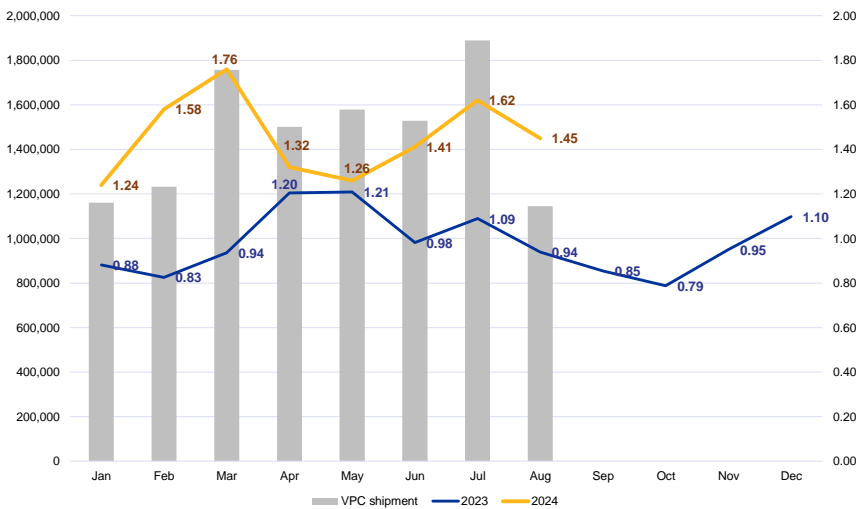
		2018	2022	2026
		Level 4	Level 5	Level 6
Pin Density	Pin Pitch	90um	70um	50um
	Total Contact Force	80kg	150kg	250kg
I/O Speed	Digital	32Gbps	64Gbps	128Gbps
	RF/mmWave	< 12 GHz	29 GHz	+60 GHz
Device Power	Main Power	900 mV	750mV	625mV
	Single Rail	35A	50A	100A
	Impedance	2.2 mOhm	1.4 mOhm	0.8 mOhm
Thermal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

Source:Teradyne

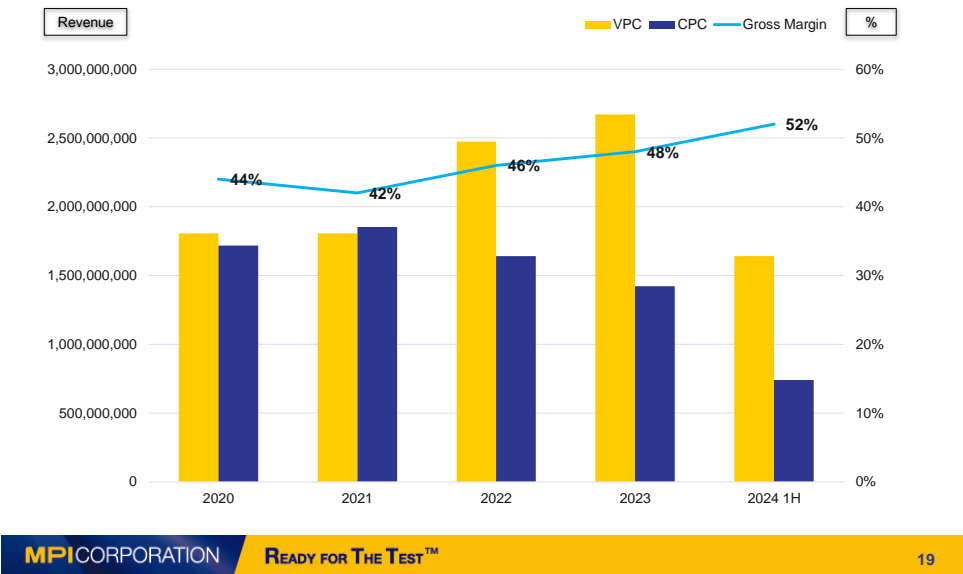
CPC Pin-Shipment & BB ratio



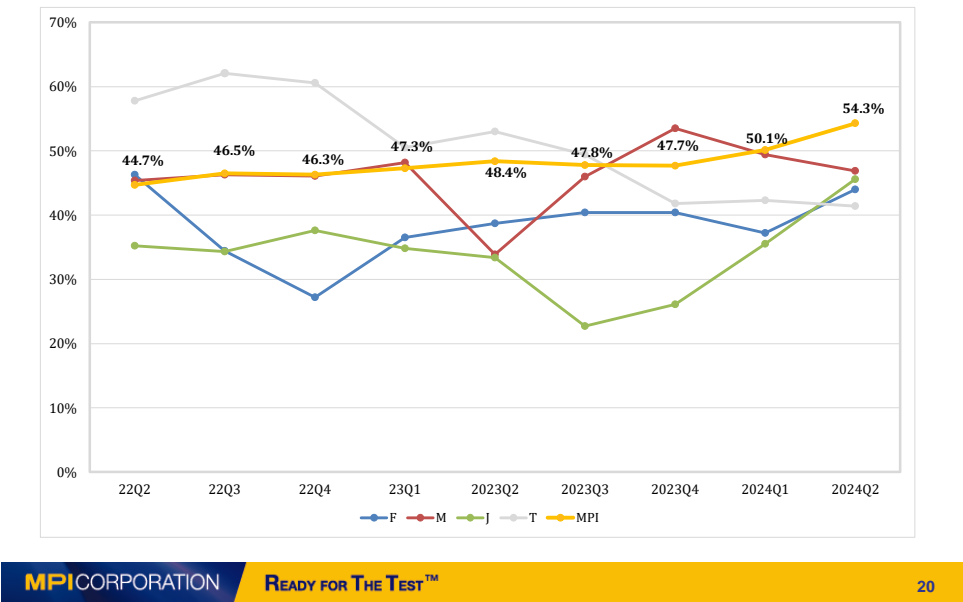
VPC Pin-Shipment & BB ratio



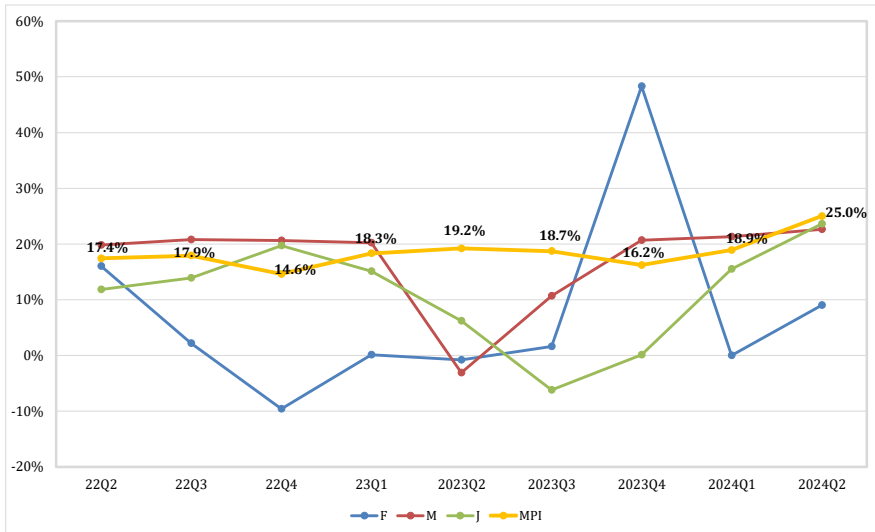
CPC and VPC Yearly Status



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.



Photonics Automation

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Product Portfolio and Capability



VEGA Line
Optical Sensing

AVIOR Line
Optical Communications

CAPELLA Line
LED/ Mini LED

GEMINI Line
Micro Display

➤ **High Power VCSEL Wafer Testing**
Wafer / Board Prober Development
Testing methodology Development

➤ **High Power VCSEL PKG Testing**
PKG Handler Development
Testing methodology Development

➤ **VCSEL / Photo-Detector Testing**
Wafer / Board Prober Development
Testing methodology Development

➤ **RF Character**
Wafer Level RF Testing Integration

➤ **SiPh Die/PKG Platform**
SiPh Handler Development

➤ **uLED Mass Production Methodology**
Wafer prober for large quantity die testing method

➤ **Panel testing platform development**
Panel / Panel in-process testing platform

Development Plan by Application



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

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.

MPICORPORATION

Thermal/AST

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MPIThermal

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.

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MPI Advanced Semiconductor Test

Engineering Probe Systems
and
RF Probe Products

50 – 300 mm

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

- **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.

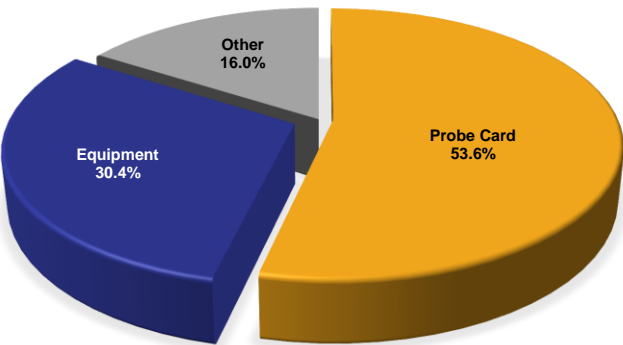
- **VOC Design** 客戶導向設計

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.

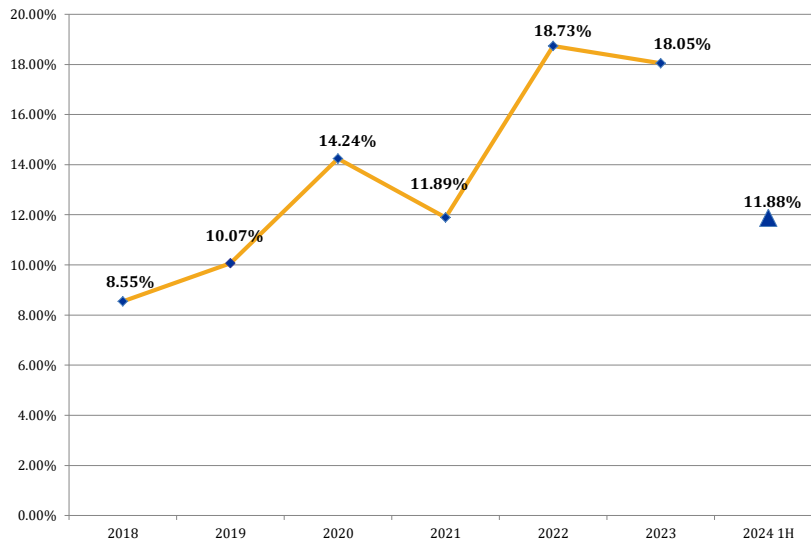
2024 1H Revenue Breakdown



Solid Performance



ROE



Balance Sheet Highlight

NT\$ Million	1H 2024		1H 2023	
Cash and Cash Equivalents	2,673	20%	1,993	17%
Fixed Assets	5,913	43%	5,396	46%
Total Assets	13,697	100%	11,765	100%
LT Debt	1,403	10%	953	8%
Shareholders' Equity	8,196	60%	6,924	59%
EBITDA	1,166	26%	739	19%

*EBITDA=operating income + depreciation & amortization expenses

P&L

NT\$000	1H 2024		1H 2023	
Net Sales	4,439,686	100%	3,796,614	100%
Cost of Goods Sold	2,113,749	48%	1,973,971	52%
Gross Profit	2,325,937	52%	1,822,643	48%
Operating Expense	1,341,566	30%	1,106,169	29%
Operating Income	984,371	22%	716,474	19%
Investment Income & Others	182,244		22,557	
Net Income (after tax)	935,601	21%	622,676	16%
EPS (after tax)	9.94		6.62	

MPI CORPORATION

Thank You

<http://www.mpi-corporation.com>

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