MPICORPORATION

MPI Corporation
6223.TT

READY FOR THE TEST™

Presentation Disclaimer

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

MPI AMERICA

MPI CELADON

MPI SUZHOU

MPI CORPORATION

- MPI Offices
- MPI Representatives

MPI Locations

Worldwide

MPI America
CA, USA (2017)

MPI Suzhou
Jiangsu, CN (2017)

Celadon Systems
MN, USA (2021)

Taiwan

Headquarters
Hsinchu, TW (2000)

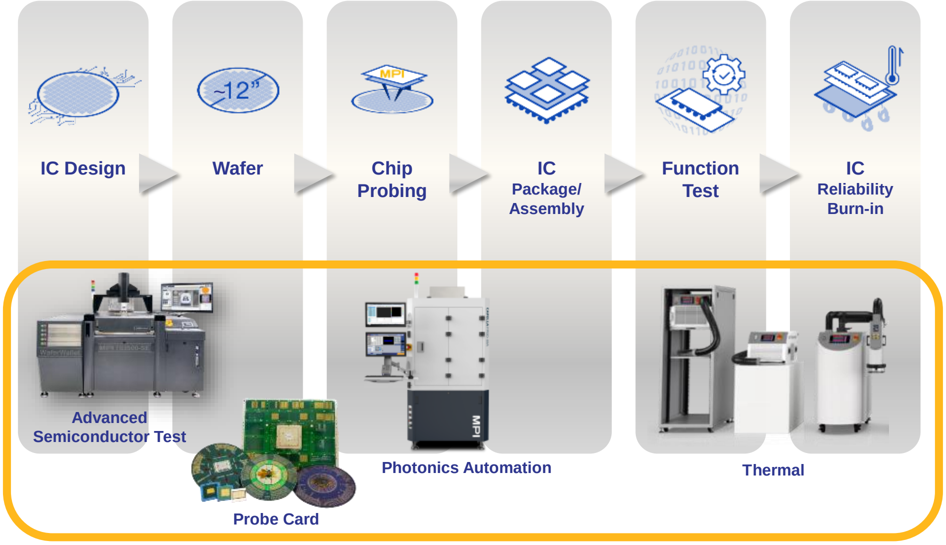
Luzhu Office
Kaohsiung, TW (2006)

2nd Production Site
Hsinchu, TW (2012)

Xinpu 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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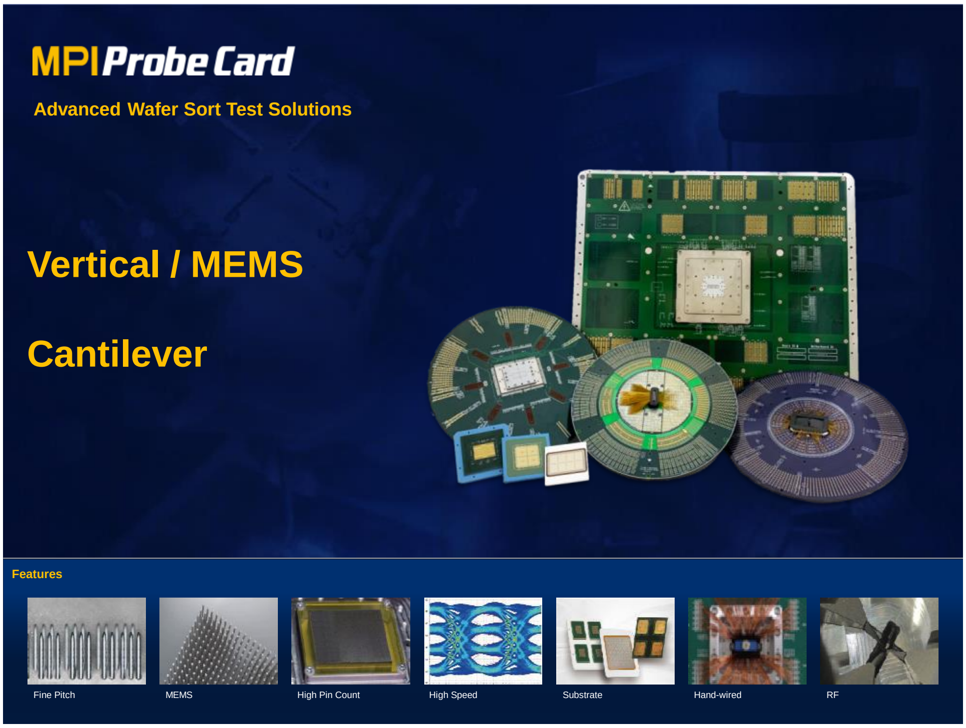


MPI Probe Card

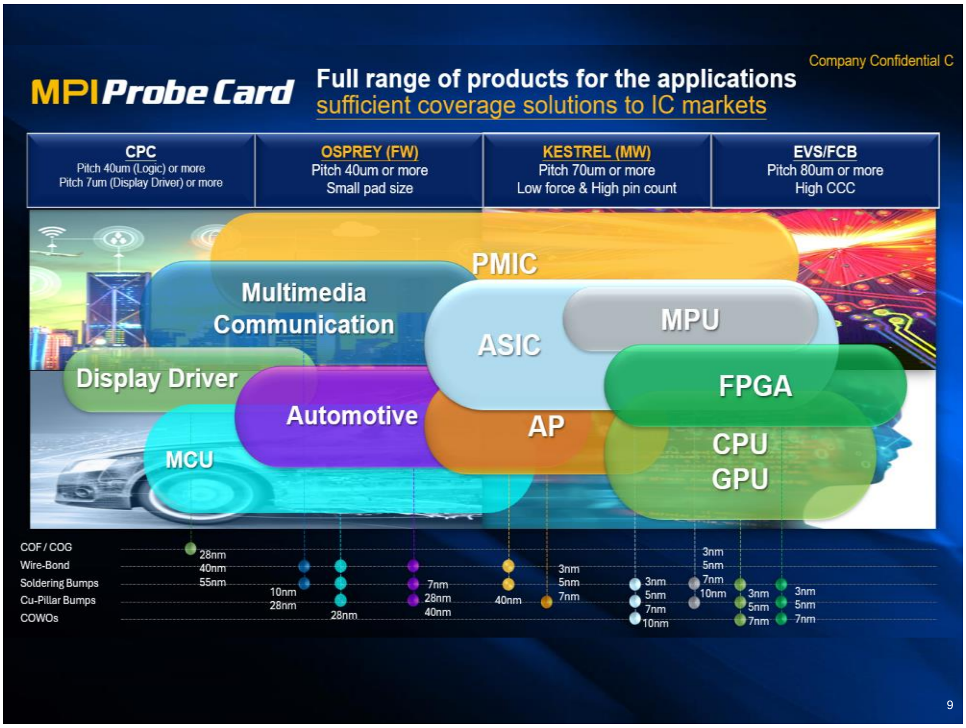
Advanced Wafer Sort Test Solutions

Vertical / MEMS

Cantilever

Features

- Fine Pitch
- MEMS
- High Pin Count
- High Speed
- Substrate
- Hand-wired
- RF



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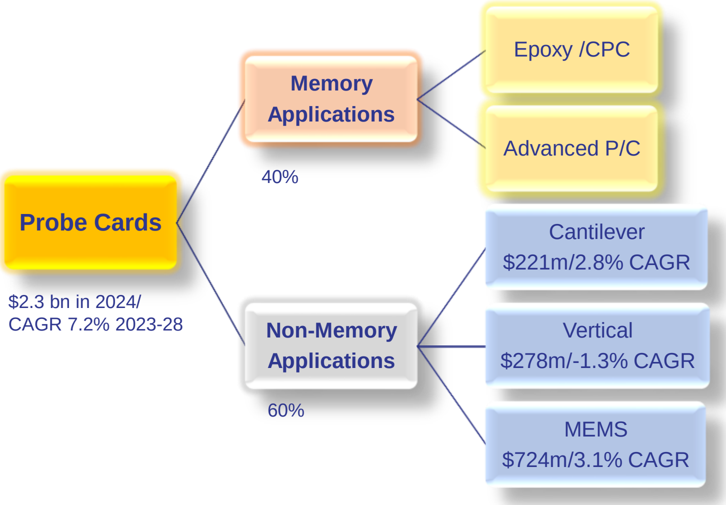
MPI Probe Card

Full range of products for the applications
sufficient coverage solutions to IC markets

CPC	OSPREY (FW)	KESTREL (MW)	EVS/FCB
Pitch 40um (Logic) or more Pitch 7um (Display Driver) or more	Pitch 40um or more Small pad size	Pitch 70um or more Low force & High pin count	Pitch 80um or more High CCC

Global Probe Card Market Update



Probe Cards

$2.3 bn in 2024/
CAGR 7.2% 2023-28

Memory Applications

40%

Epoxy /CPC

Advanced P/C

Non-Memory Applications

60%

Cantilever
$221m/2.8% CAGR

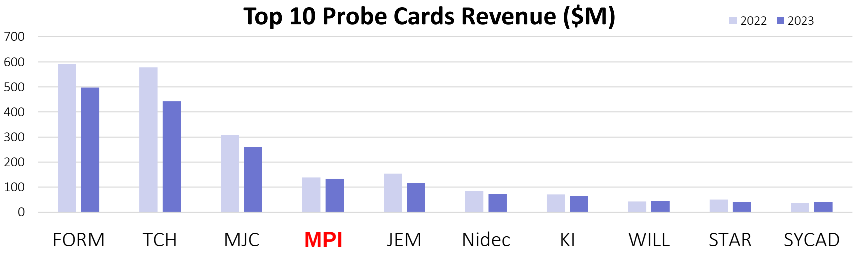
Vertical
$278m/-1.3% CAGR

MEMS
$724m/3.1% CAGR

Source: TechInsights

Total Own Make IC Probe Cards Venders

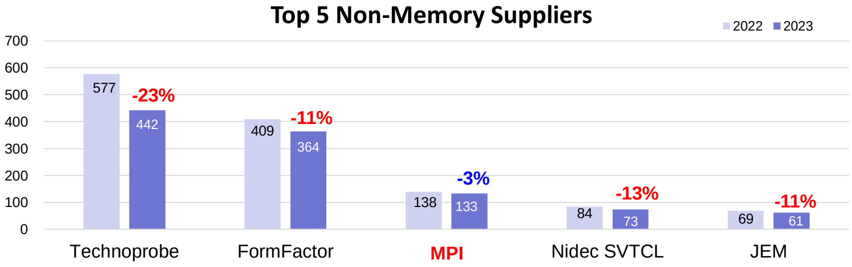
(Rank)		2020	2021	2022	2023
FormFactor	USA	1	1	1	1
Technoprobe	Italy	2	2	2	2
Micronics Japan	Japan	3	3	3	3
MPI Corporation	Taiwan	5	5	5	4
Japan Electronic Materials	Japan	4	4	4	5



Source: TechInsights

Top 5 Non-Memory Probe Card Vendors

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



Source: TechInsights

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.

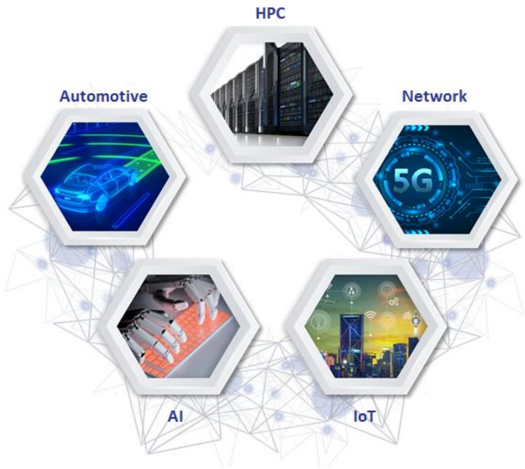
- **Solid Global Clientele 堅實的國際合作夥伴**

  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



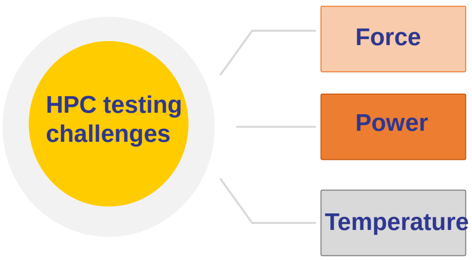
Future Trend for Probe Card

- ➢ Large size
- ➢ Hi pin count
- ➢ Hi CCC
- ➢ Hi speed
- ➢ Fine pitch
- ➢ Low force
- ➢ High/Low Temperature

Source: TSMC

HPC Challenges

High Force, High Power, and High Temperature are the challenges for HPC testing.



Pin count

Power

Testing Condition

3rd Annual SWTest Asia | Taiwan, Octorber 27-28, 2022

Source: TSMC

Interface Technical Complexity Check in

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

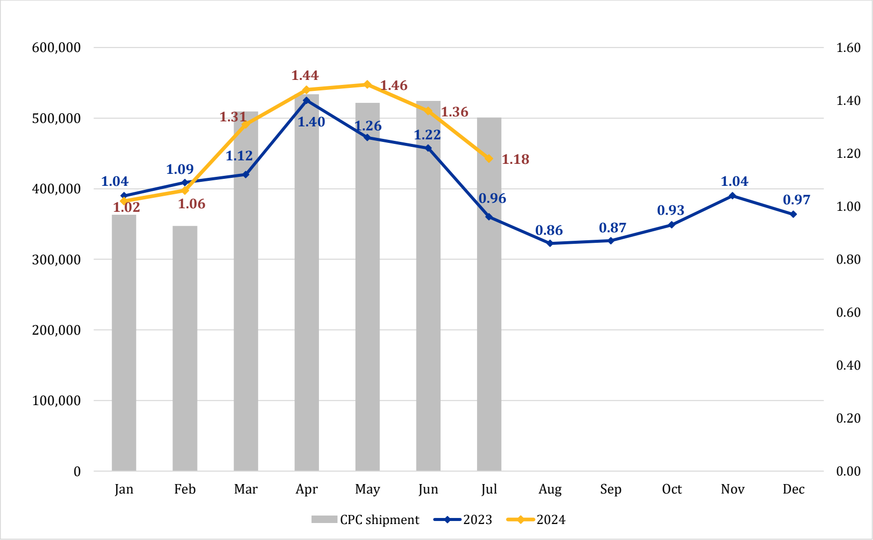

SW Test Workshop
Semiconductor Wafer Test Workshop
Device Interface Challenges of the Next Decade
Steve Ledford
Teradyne
June 3-6, 2018

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

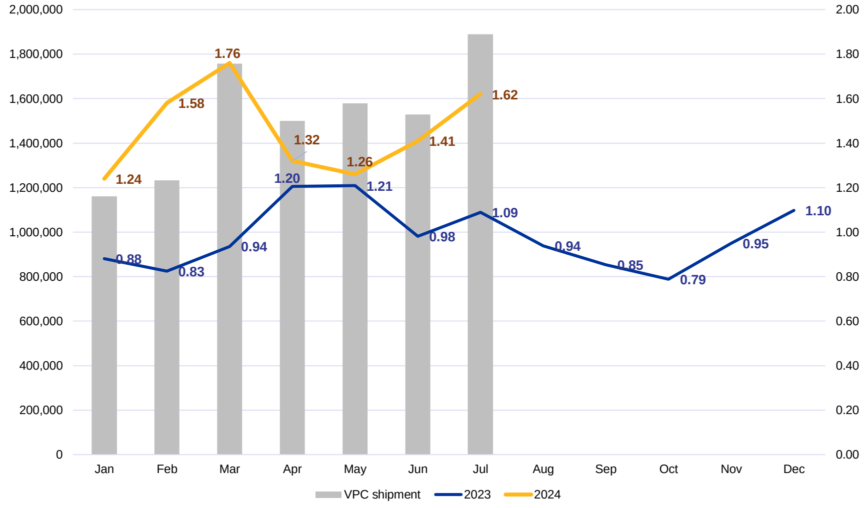
		2018	2022	2026
		Level 4	Level 5	Level 6
Pin Density	Pin Pitch	90um	70um	50um
	Total Contact Force	80kg	150kg	250kg
I/O Speed	Digital	32Gpbs	64Gpbs	128Gpbs
	RF/mmWave	< 12 GHz	29 GHz	+60 GHz
Device Power	Main Power	900 mV	750mV	625mV
	Single Rail	35A	50A	100A
	Impedance	2.2 mOhm	1.4 mOhm	0.8 mOhm
Thermal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

Source:Teradyne

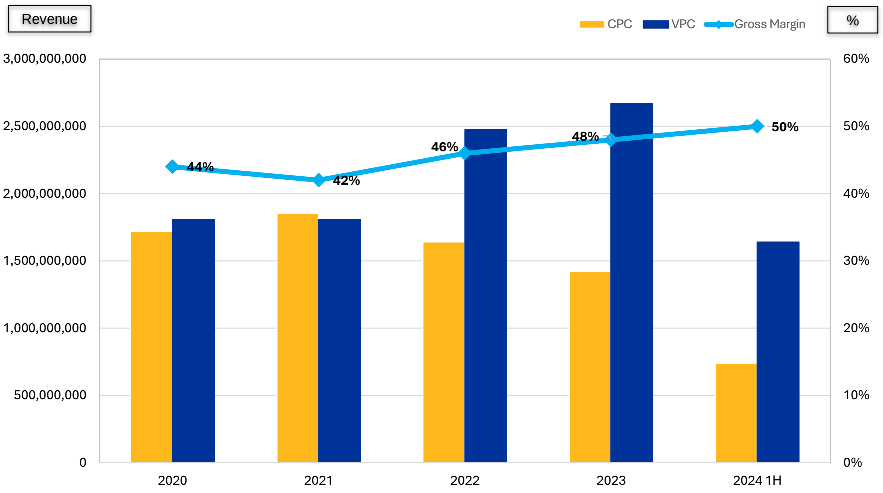
CPC Pin-Shipment & BB ratio



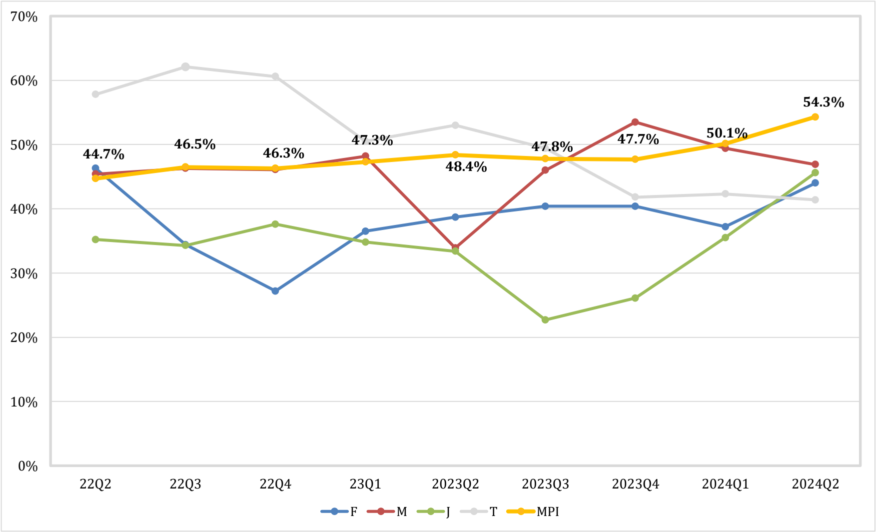
VPC Pin-Shipment & BB ratio



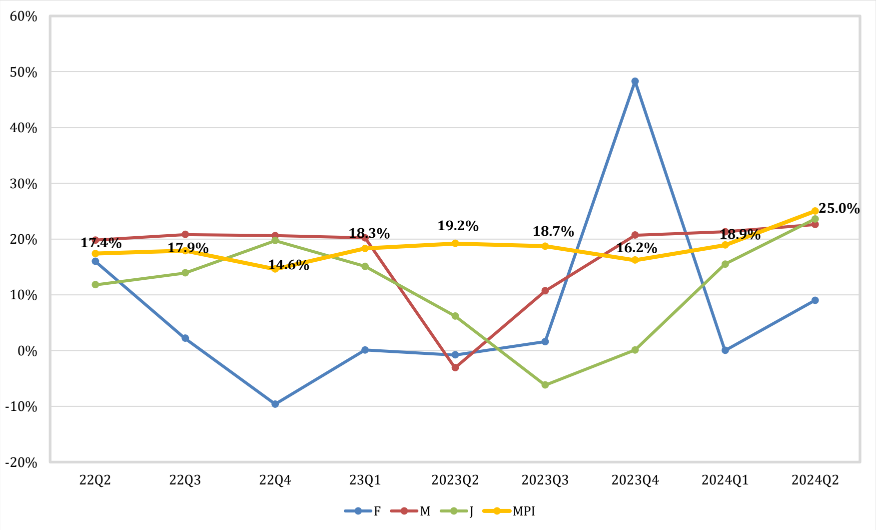
CPC and VPC Yearly Status



Gross Margin Between Global Peers



Operating Margin Between Global Peers



MPI Probe Card

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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.

MPI CORPORATION

Photonics Automation

READY FOR THE TEST™

Product Portfolio and Capability

- **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
➢ 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	➢ Focus on VCSEL/Photodetector Testing ➢ Wafer Prober for Dark / Responsivity / Capacity measurement ➢ RF Measurement Capability Development ➢ SiPh package testing approaching	➢ Lab and production wafer testing tool development ➢ Contacting Accuracy Improvement ➢ Innovative testing methodology ➢ Optical measurement in production methodology

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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

READY FOR THE TEST™

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.

MPI Advanced Semiconductor Test

Engineering Probe Systems
and
RF Probe Products

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.

MPICORPORATION

Financial Statements

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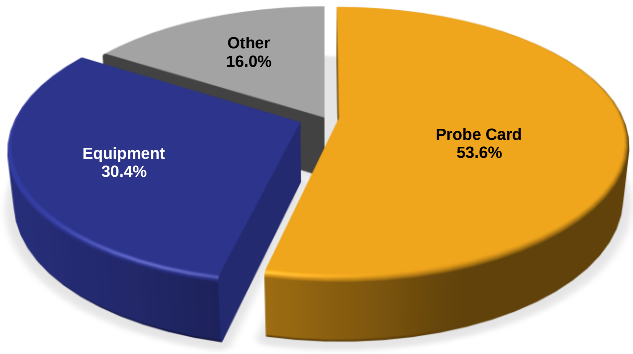
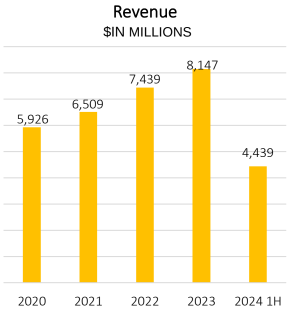
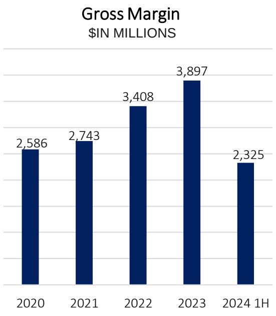
2024 1H Revenue Breakdown



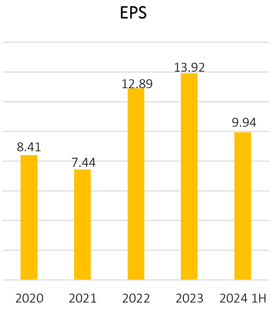
Solid Performance



Continuous revenue growth driven by high customer satisfaction

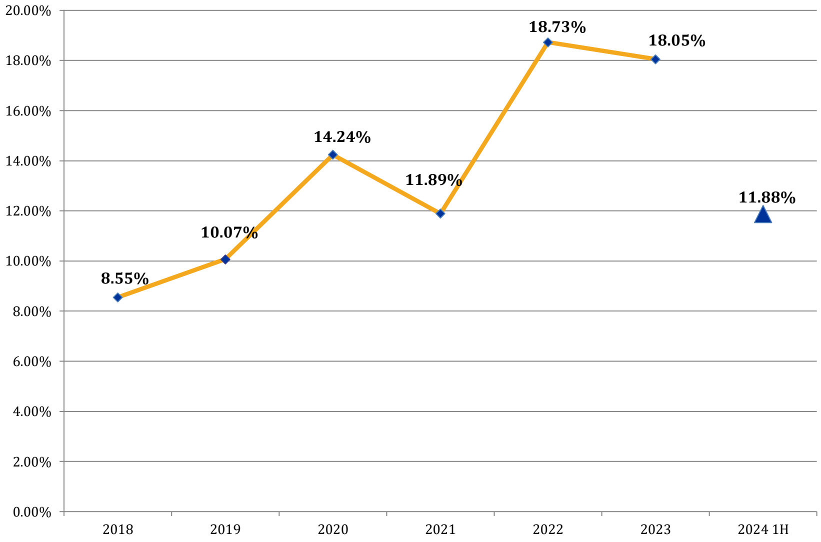


Margin expansion is the result of strong RD investment



Accelerating profit earning shows MPI's shareholder commitment

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$Million	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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