

Macquarie Asia TMT Conference 2024

旺矽科技股份有限公司 6223.TT

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(發言人)

READY FOR THE TEST™

免責聲明

以下資訊包含前瞻性陳述，我們基於目前對未來事件的預期和預測做出了這些前瞻性陳述。儘管我們相信這些預期和預測是合理的，但這些前瞻性陳述本質上會受到以下風險和不確定性影響，包括但不限於：半導體和LED產業與市場的激烈競爭、半導體行業的週期性特性、全球業務活動所涉及的風險、整體經濟和政治環境。

此處討論的所有財務數字均根據國際財務報告準則(IFRS)編制，所有數字將在會計審計過程完成後公布。

MPI 部門概覽



Since 1995

Probe Card



Since 2001

Photonics Automation



Since 2014

Advanced Semiconductor Test



Since 2015

Thermal Test



Since 2021

Celadon Systems

MPI 全球據點



MPI
Locations



MPI America
CA, USA (2017)

Worldwide



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)



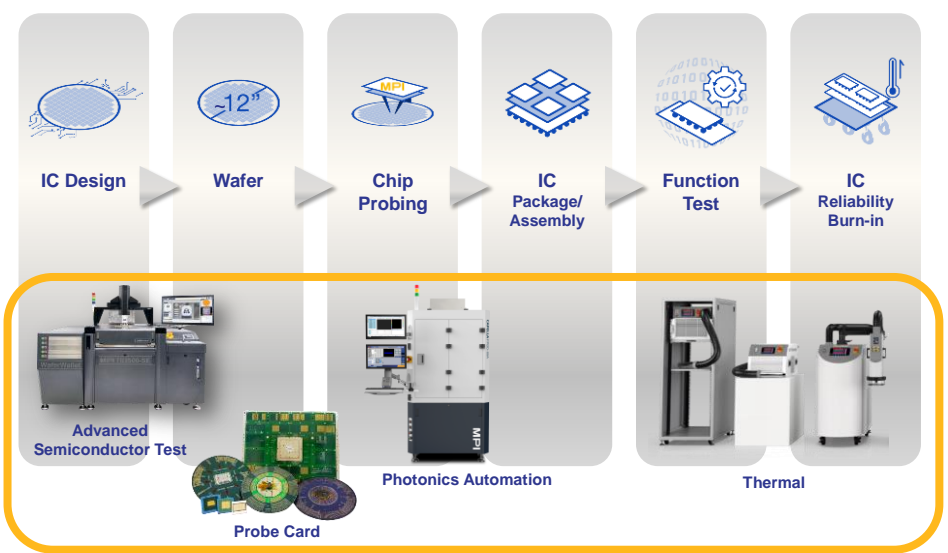
Xingpu Office
Hsinchu, TW (2014)



3rd Production Site
Hsinchu, TW (2021)

Taiwan

MPI-The Powerhouse of Testing Solutions



議程



Business Contents

- Probe Card
- Photonics Automation
- Thermal & AST



Financial Statements

MPICORPORATION

Probe Card 半導體事業部 (探針卡)

READY FOR THE TEST™

MPIProbe Card

Advanced Wafer Sort Test Solutions

Vertical / MEMS

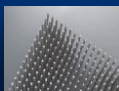
Cantilever



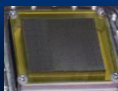
Features



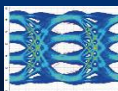
Fine Pitch



MEMS



High Pin Count



High Speed



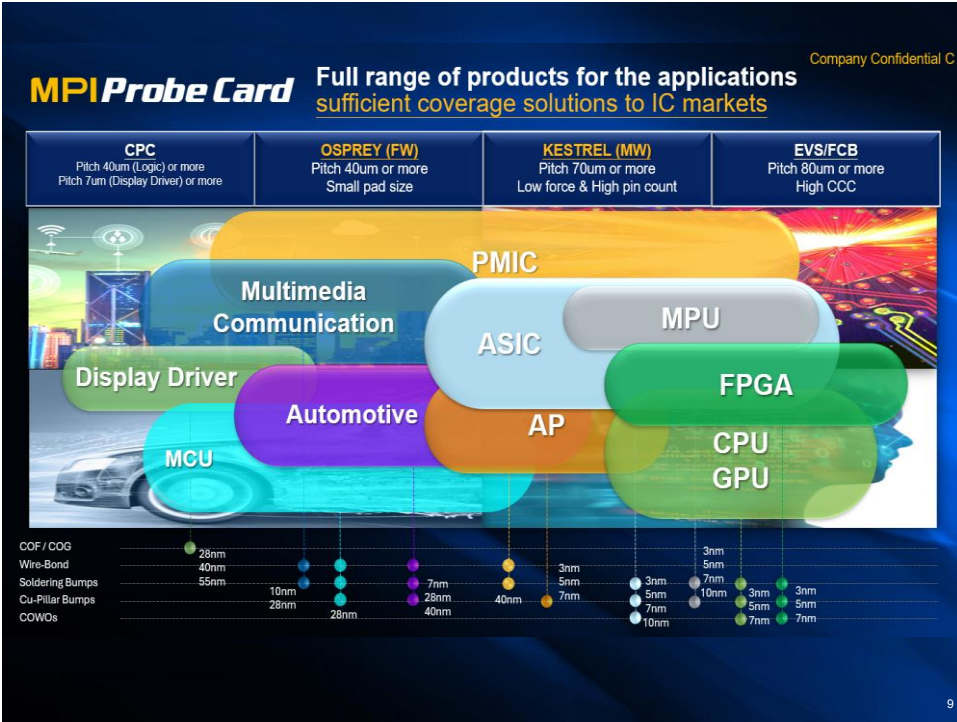
Substrate



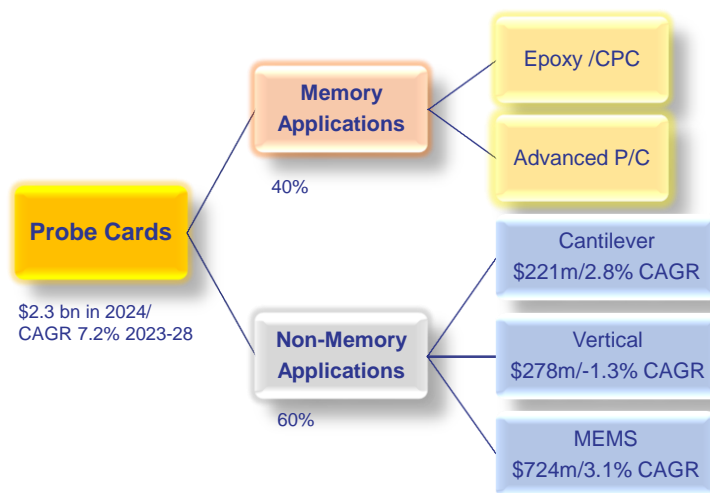
Hand-wired



RF



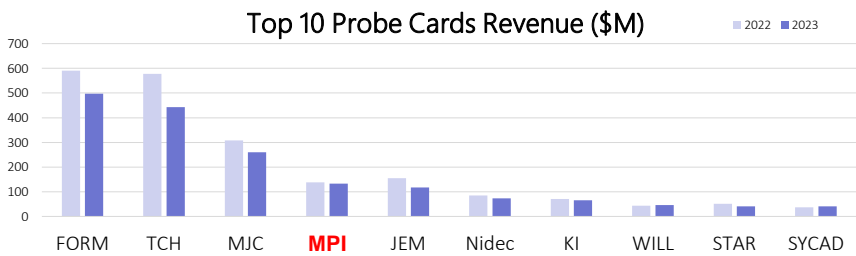
全球探針卡市場



Source: Technisights

自製IC探針卡供應商

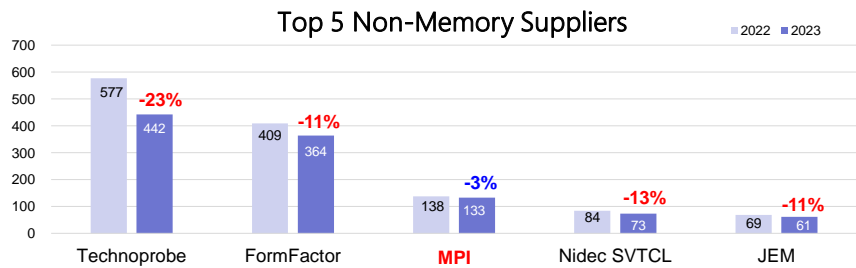
	(Rank)		2020	2021	2022	2023
FormFactor		USA	1	1	1	1
Technoprobe		Italy	2	2	2	2
Micronics Japan		Japan	3	3	3	3
MPI Corporation		Taiwan	5	5	5	4
Japan Electronic Materials		Japan	4	4	4	5



Source: TechnInsights

前五大非記憶體探針卡供應商

	(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: TechnInsights

Probe Card: 提供全方位解決方案

- **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.

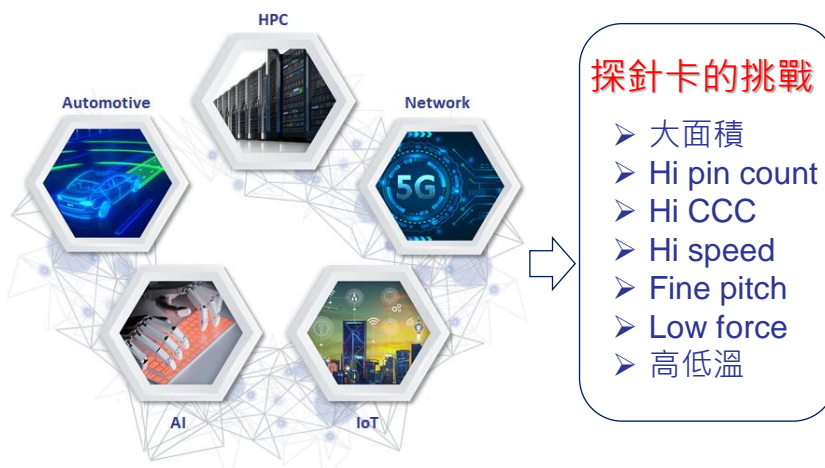
- **Solid Global Clientele** 堅實的國際合作夥伴

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

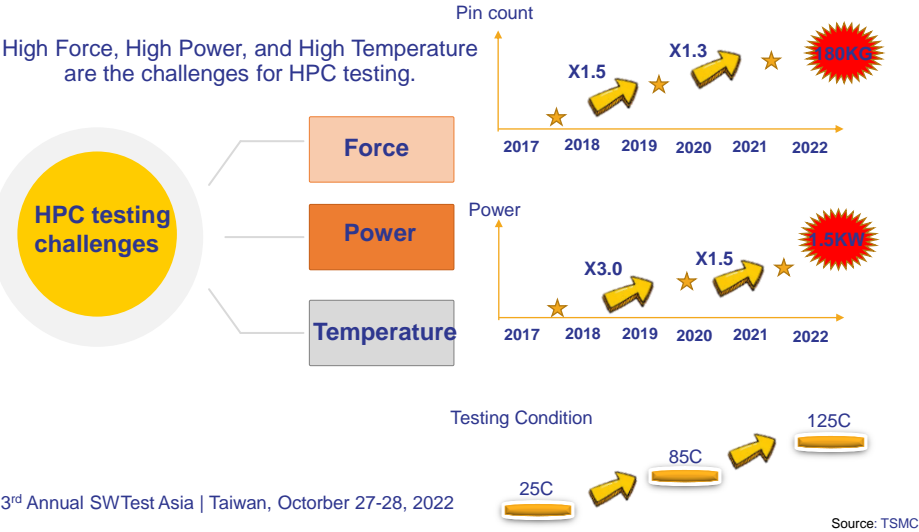
Provide probe head, substrate(MLO/MLC/MLOC) and PCB one-stop service.

快速增長的應用層面



Source: TSMC

HPC挑戰



Interface Technical Complexity Check in

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

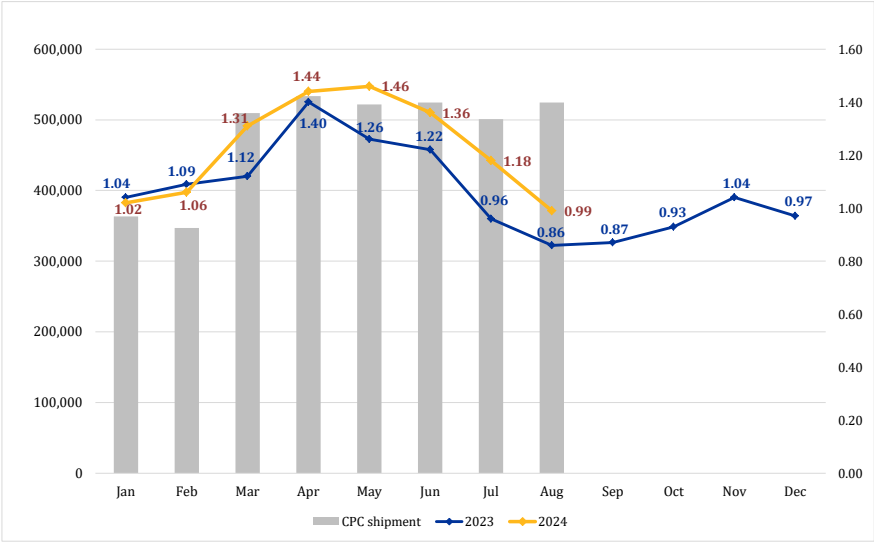
“2x4 Scaling”=2xPins, 2xPerformance, every 4 years



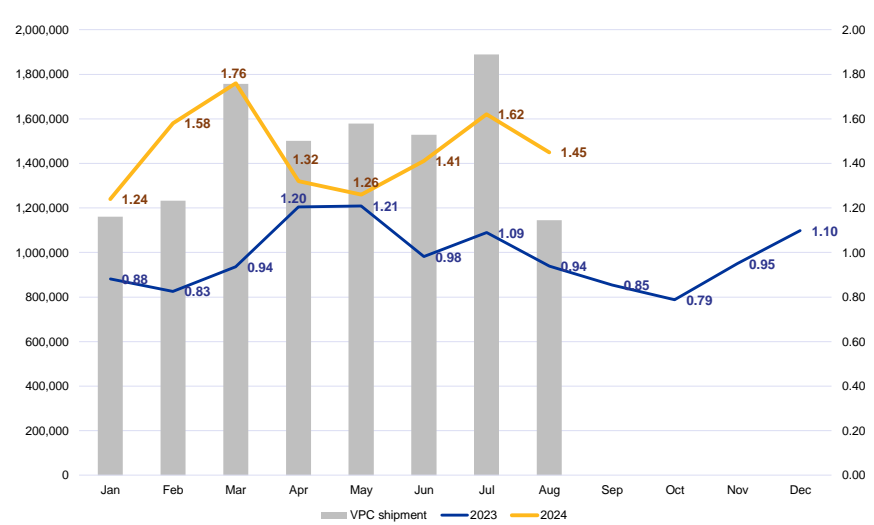
		2018	2022	2026
		Level 4	Level 5	Level 6
Pin Density	Pin Pitch	90um	70um	50um
	Total Contact Force	80kg	150kg	250kg
I/O Speed	Digital	32Gpbs	64Gpbs	128Gpbs
	RF/mmWave	< 12 GHz	29 GHz	+60 GHz
Device Power	Main Power	900 mV	750mV	625mV
	Single Rail	35A	50A	100A
	Impedance	2.2 mOhm	1.4 mOhm	0.8 mOhm
Thermal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

Source:Teradyne

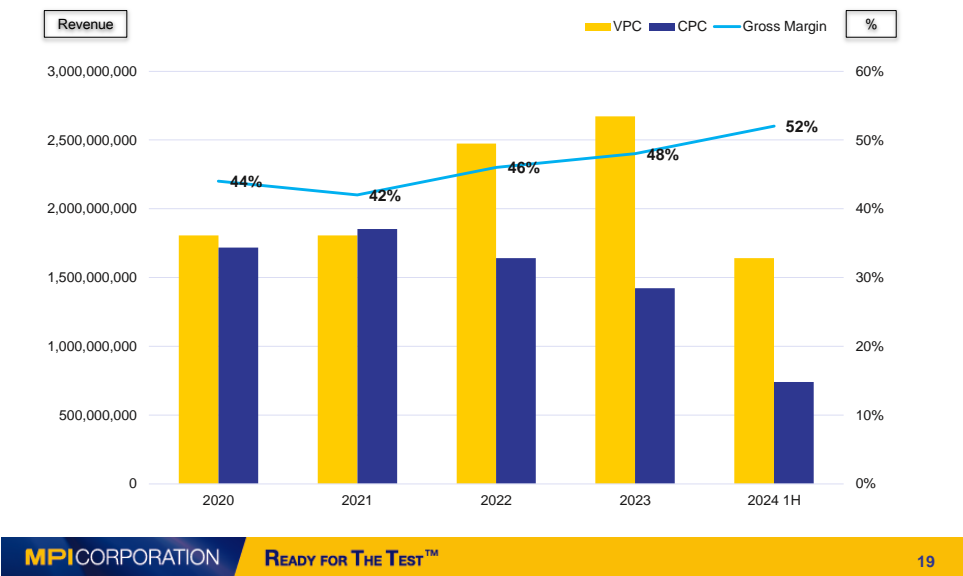
CPC月出貨針數及月接單出貨比



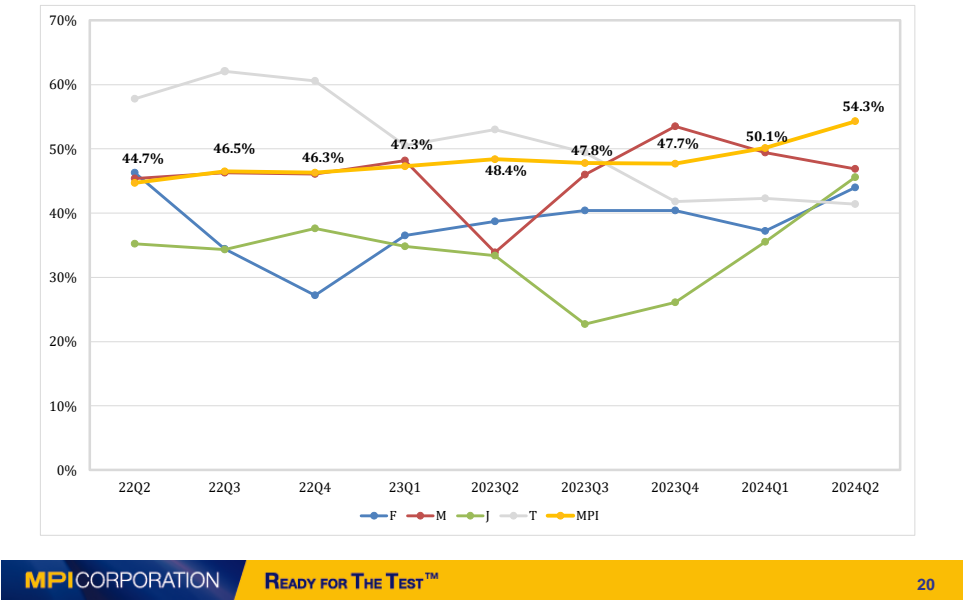
VPC月出貨針數及月接單出貨比



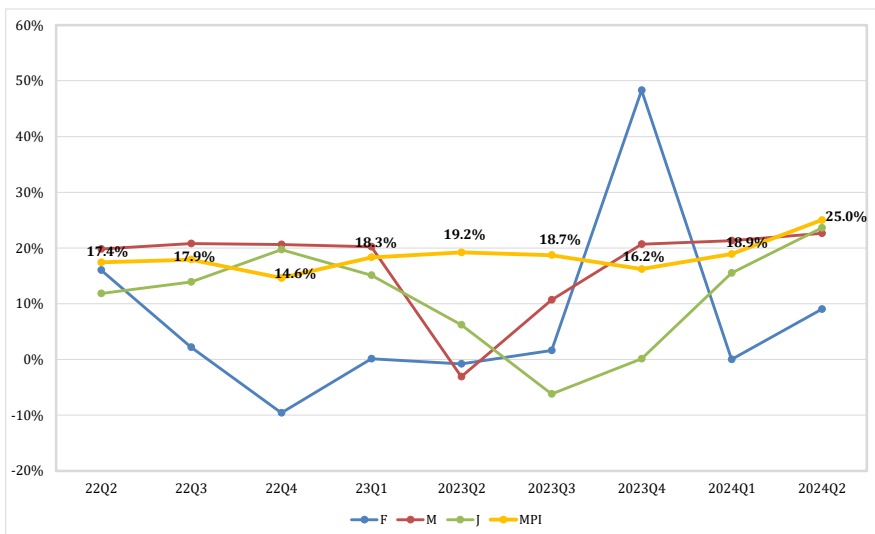
CPC及VPC成長趨勢



全球同業毛利率



全球同業營利率



MPI CORPORATION

READY FOR THE TEST™

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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.



發光二極體事業部 (LED)

READY FOR THE TEST™

產品概覽



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

發展計畫



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:與市場領導者合作

● 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: 客戶導向

- **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.

MPICORPORATION

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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:獨特的市場領導者

- **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.

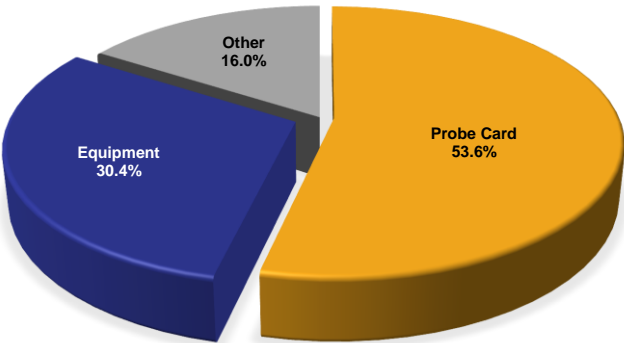
- **VOC Design** 客戶導向設計

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.

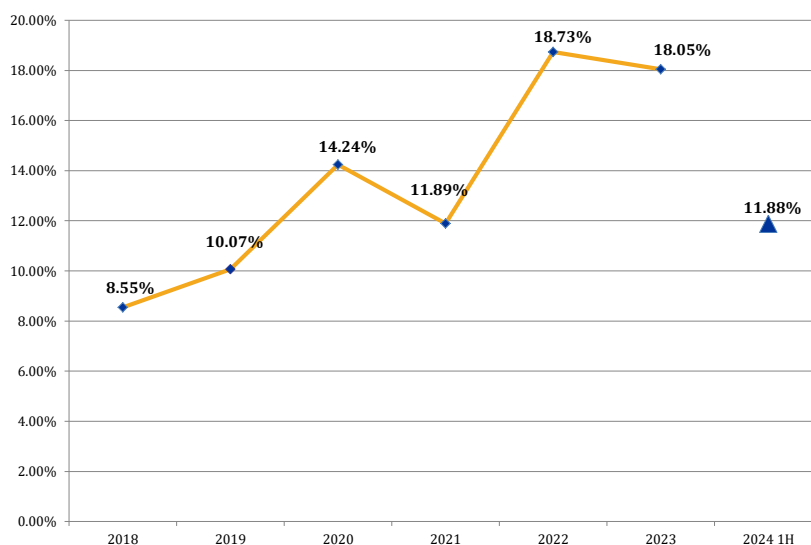
2024 1H出貨分布



營業表現



股東權益報酬率



資產負債表

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

綜合損益表

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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