MPI CORPORATION

旺矽科技股份有限公司
6223.TT

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

Worldwide

MPI America
CA, USA (2017)

MPI Suzhou
Jiangsu, CN (2017)

Celadon Systems
MN, USA (2021)

Taiwan

Headquarters
Hsinchu, TW (2000)

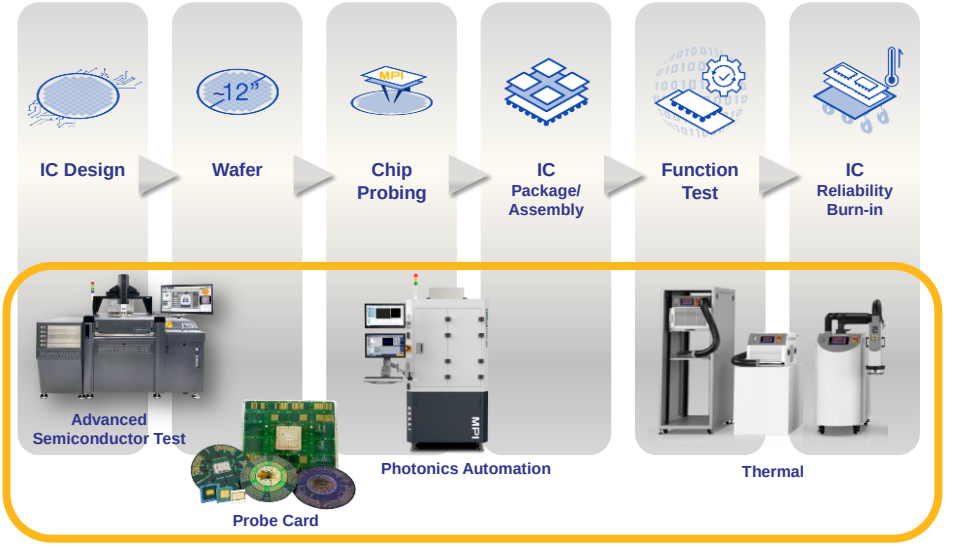
Luzhu Office
Kaohsiung, TW (2006)

2nd Production Site
Hsinchu, TW (2012)

Xinpu Office
Hsinchu, TW (2014)

3rd Production Site
Hsinchu, TW (2021)

MPI-The Powerhouse of Testing Solutions



議程

Business Contents

Probe Card

Photonics Automation

Thermal & AST

Financial Statements

MPI CORPORATION

Probe Card
半導體事業部
(探針卡)

READY FOR THE TEST™

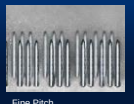
MPI Probe Card

Advanced Wafer Sort Test Solutions

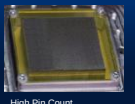
Vertical / MEMS

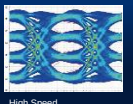
Cantilever

Features


Fine Pitch

MEMS

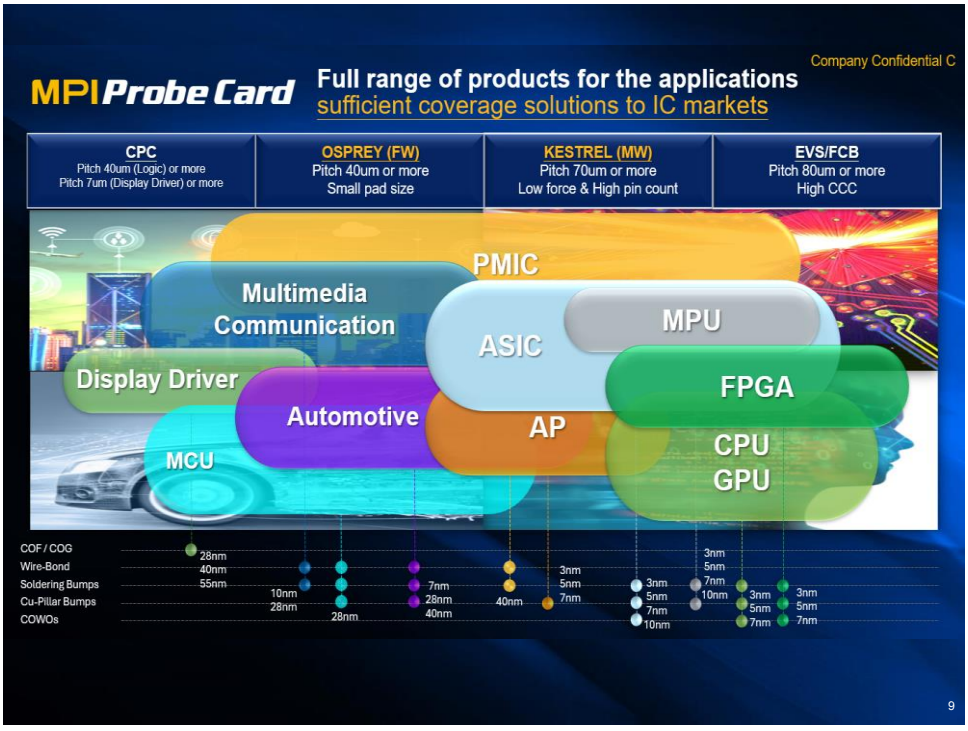

High Pin Count


High Speed

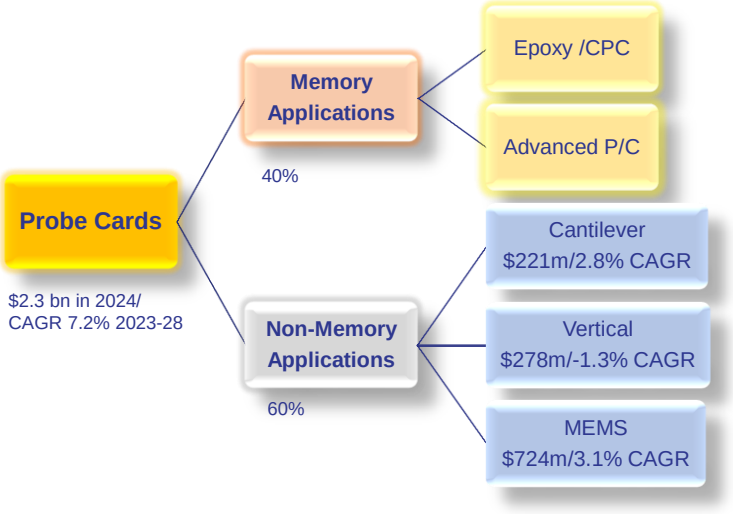
Substrate

Hand-wired

RF



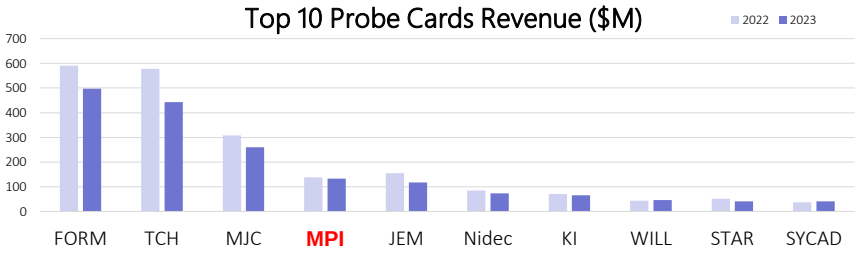
全球探針卡市場



Source: TechInsights

自製IC探針卡供應商

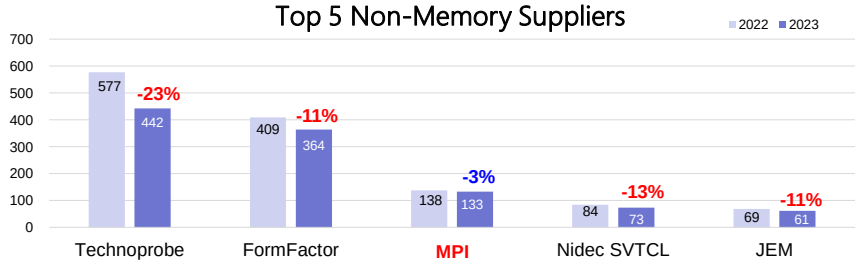
(Rank)		2020	2021	2022	2023
FormFactor	USA	1	1	1	1
Technoprobe	Italy	2	2	2	2
Micronics Japan	Japan	3	3	3	3
MPI Corporation	Taiwan	5	5	5	4
Japan Electronic Materials	Japan	4	4	4	5



Source: TechInsights

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: TechInsights

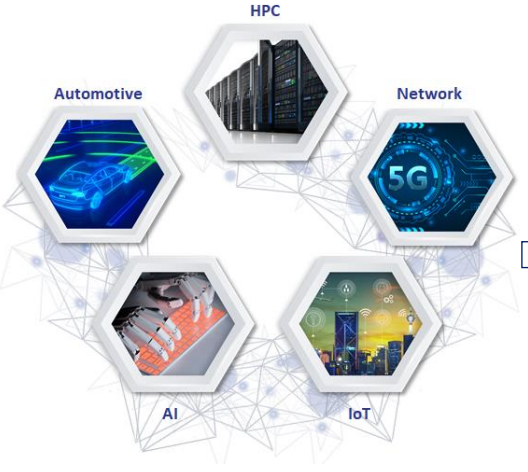
Probe Card: 提供全方位解決方案

- **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



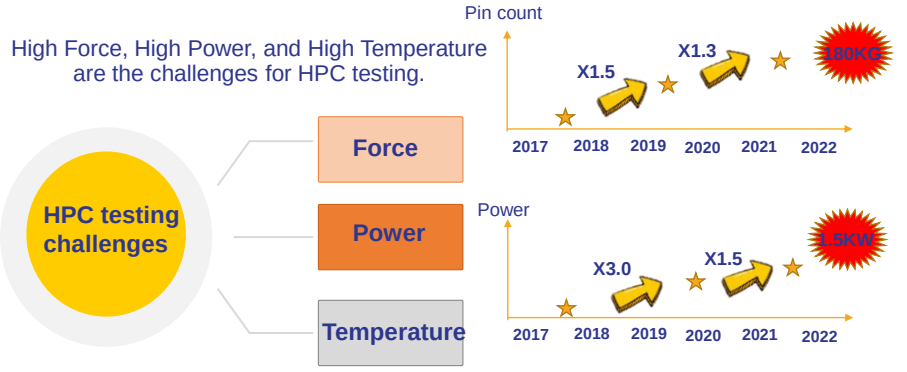
Future Trend for Probe Card

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

Source: TSMC

HPC挑戰

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



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

Source: TSMC

Interface Technical Complexity Check in

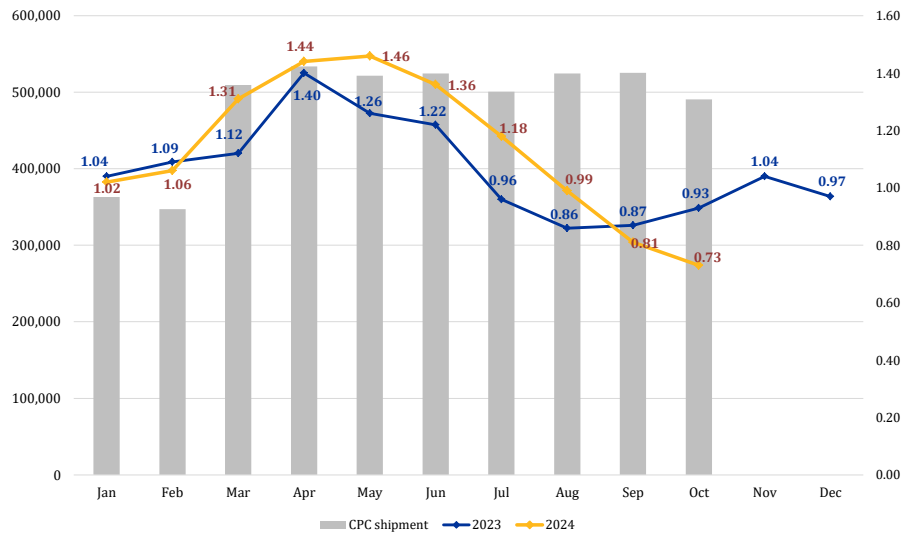
Complexity Trends are on pace to be at 2022 targets(1 Cycle) or in some cases beyond

"2x4 Scaling"=2xPins, 2xPerformance, every 4 years

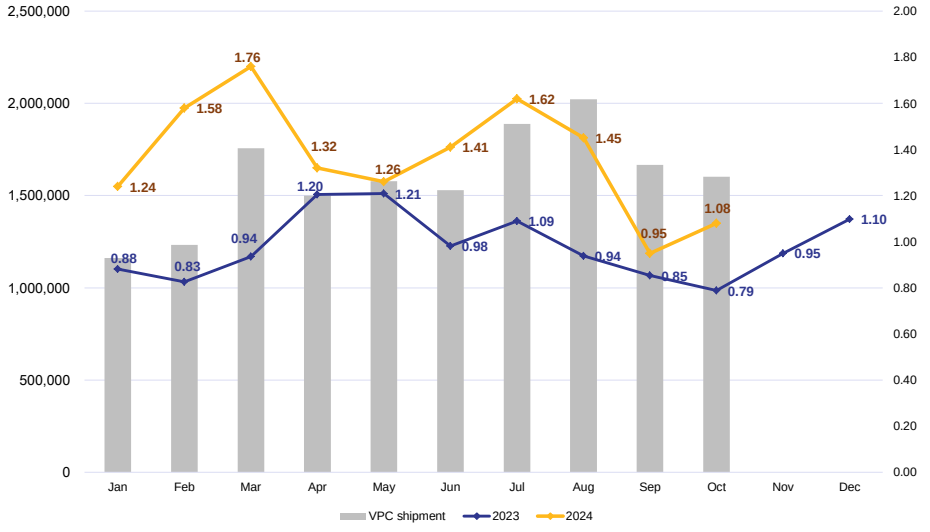
		2018	2022	2026
		Level 4	Level 5	Level 6
Pin Density	Pin Pitch	90um	70um	50um
	Total Contact Force	80kg	150kg	250kg
I/O Speed	Digital	32Gpbs	64Gpbs	128Gpbs
	RF/mmWave	< 12 GHz	29 GHz	+60 GHz
Device Power	Main Power	900 mV	750mV	625mV
	Single Rail	35A	50A	100A
	Impedance	2.2 mOhm	1.4 mOhm	0.8 mOhm
Thermal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

Source:Teradyne

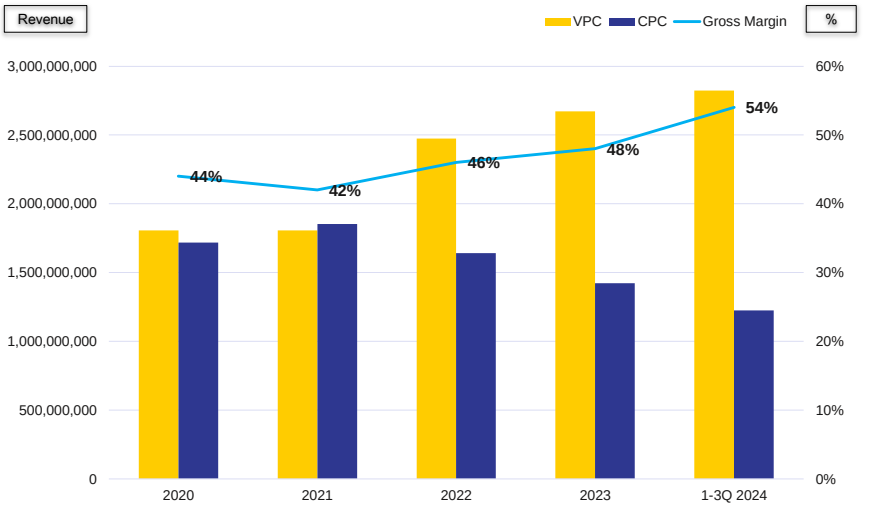
CPC月出貨針數及月接單出貨比



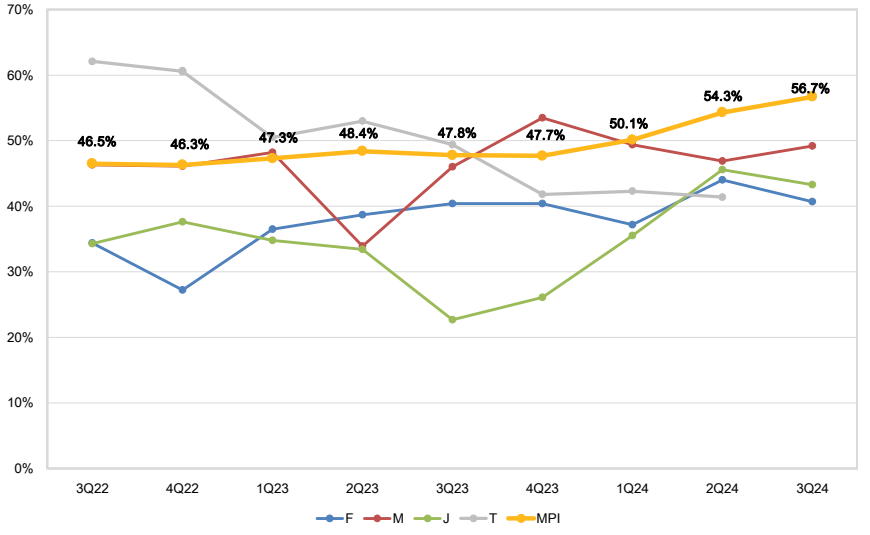
VPC月出貨針數及月接單出貨比



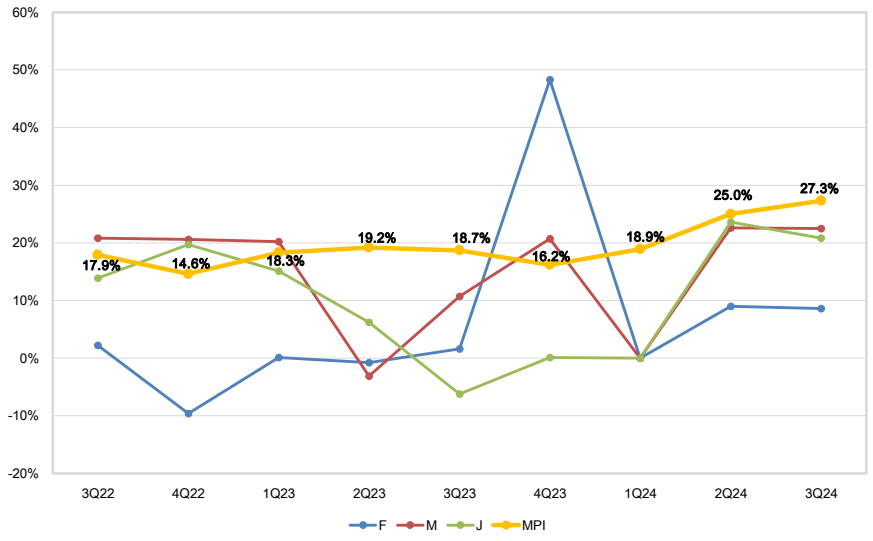
CPC及VPC成長趨勢



全球同業毛利率



全球同業營利率



MPI 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.

MPI CORPORATION

發光二極體事業部
(LED)

READY FOR THE TEST™

產品概覽

- **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
➢ 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

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.

MPI CORPORATION

Thermal/AST

READY FOR THE TEST™

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: 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.

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.

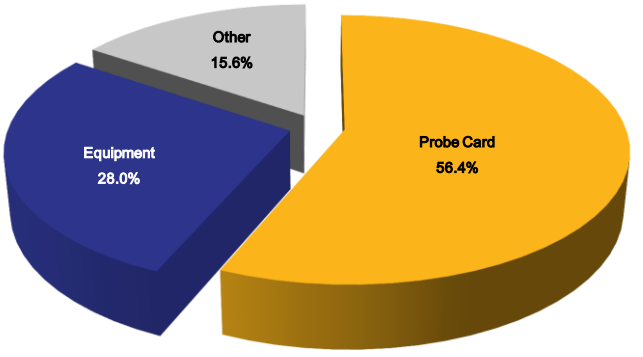
- **VOC Design 客戶導向設計**
Design based on Voice of the customer to full-fill customers' needs.

- **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.

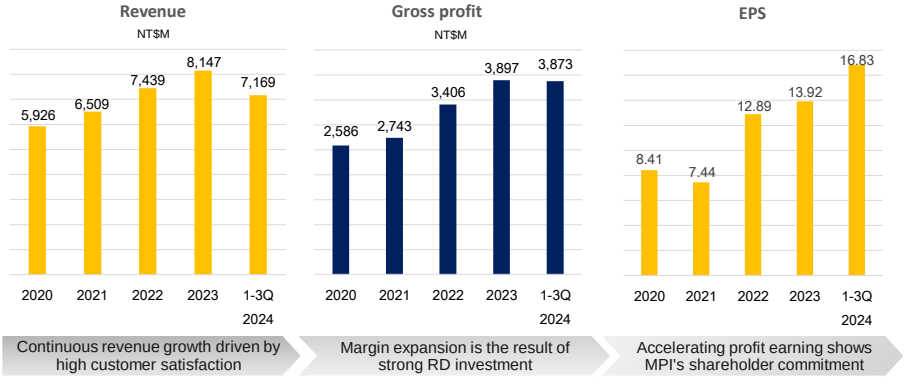
MPI CORPORATION

財務報表

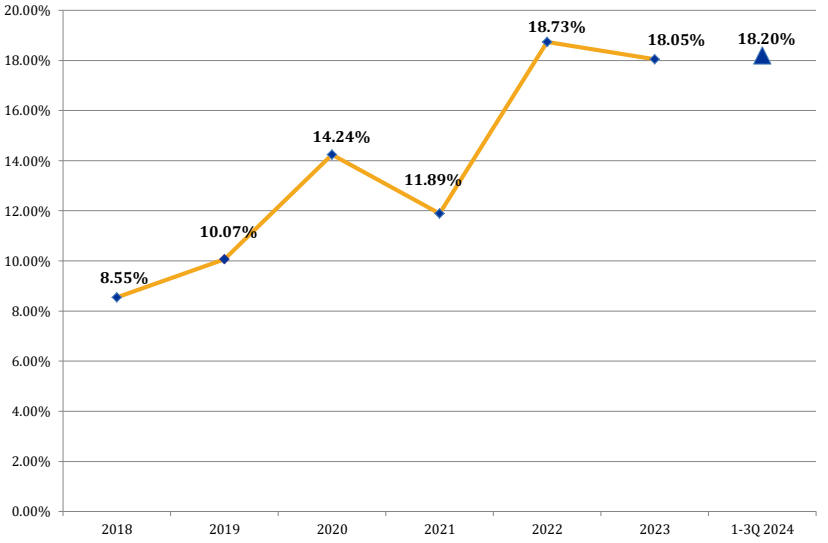
1-3Q 2024出貨分布



營業表現



股東權益報酬率



資產負債表

NT$M	1-3Q 2024		1-3Q 2023	
Cash and Cash Equivalents	2,754	19%	2,087	18%
Fixed Assets	5,954	42%	5,370	45%
Total Assets	14,290	100%	11,896	100%
LT Debt	1,354	9%	1,564	13%
Shareholders' Equity	8,709	61%	7,337	62%
EBITDA	1,938	27%	1,245	21%

*EBITDA=operating income + depreciation & amortization expenses

綜合損益表

NT$000	1-3Q 2024		1-3Q 2023	
Net Sales	7,169,036	100%	5,950,742	100%
Cost of Goods Sold	3,295,826	46%	3,098,662	52%
Gross Profit	3,873,210	54%	2,852,080	48%
Operating Expense	2,143,738	30%	1,733,664	29%
Operating Income	1,729,472	24%	1,118,416	19%
Investment Income & Others	208,915		126,842	
Net Income (after tax)	1,584,880	22%	1,034,895	18%
EPS (after tax)	16.83		11.00	