

旺矽科技股份有限公司 6223.TT

免責聲明

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



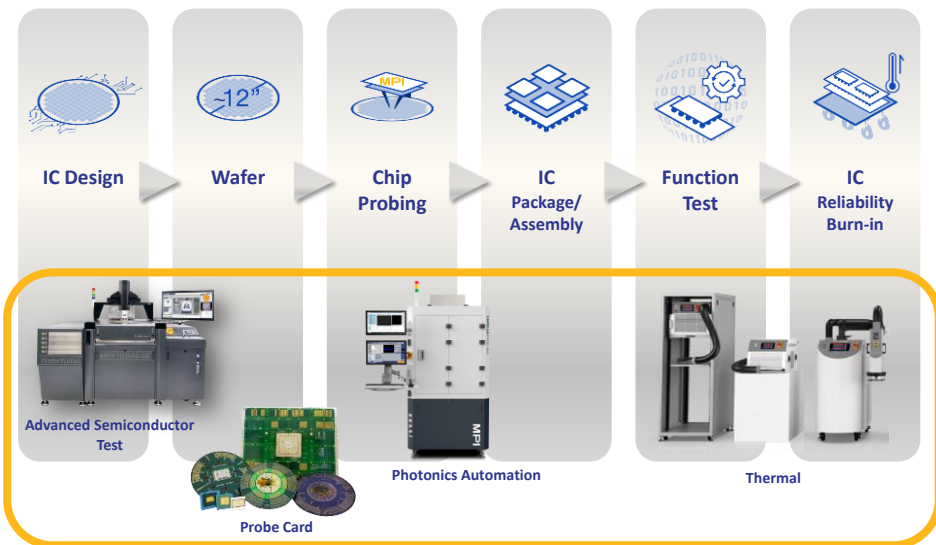
Celadon Systems

MPI Global Presence



	Worldwide			Taiwan				
MPI Locations								
	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 nd Production Site Hsinchu, TW (2012)	Xinyu Office Hsinchu, TW (2014)	3 rd Production Site Hsinchu, TW (2021)

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 Probe Card

Cantilever Probe Card



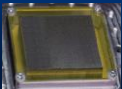
Features



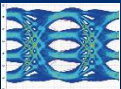
Fine Pitch



MEMS



High Pin Count



High Speed



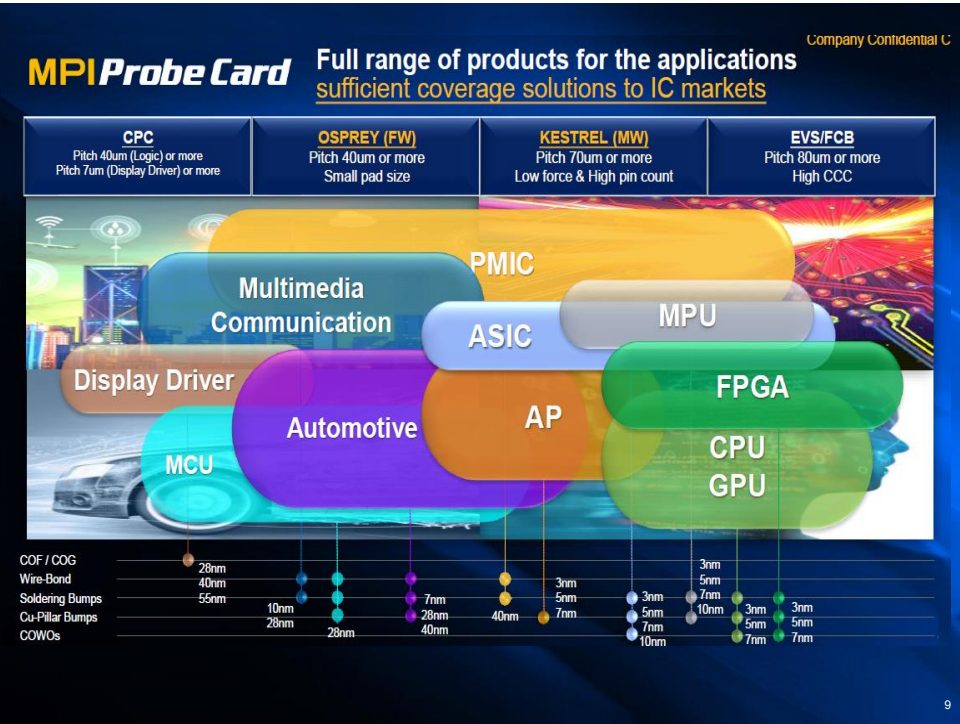
Substrate



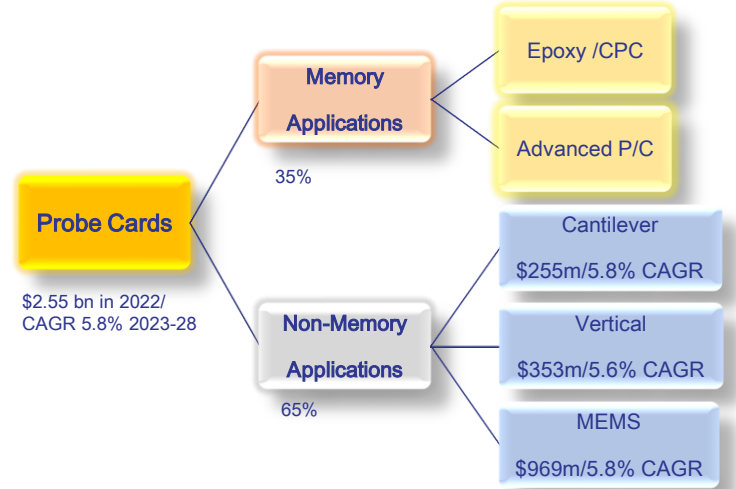
Hand-wired



RF



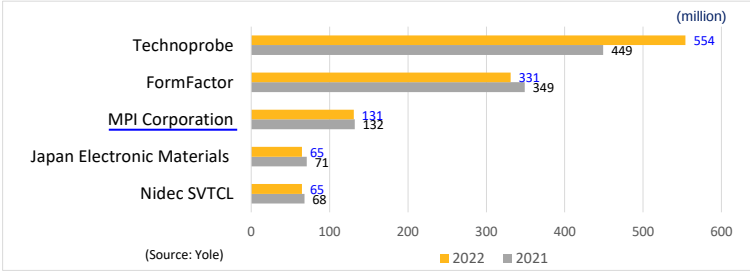
Global Probe Card Market Update



Source: Yole Insight

前五大非記憶體探針卡供應商

	(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

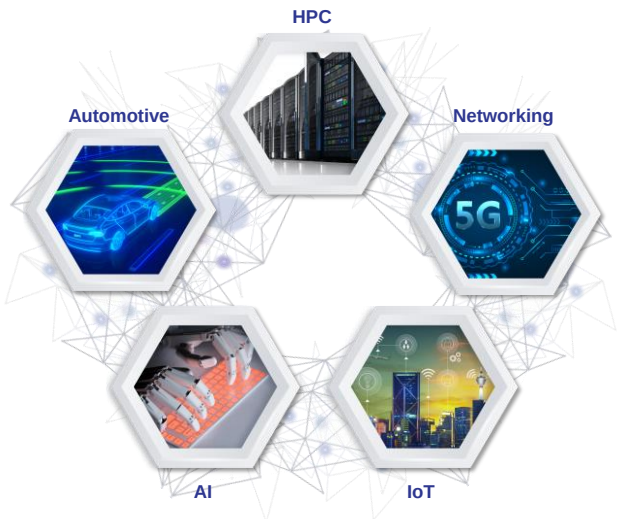


Probe Card: 提供全方位解決方案

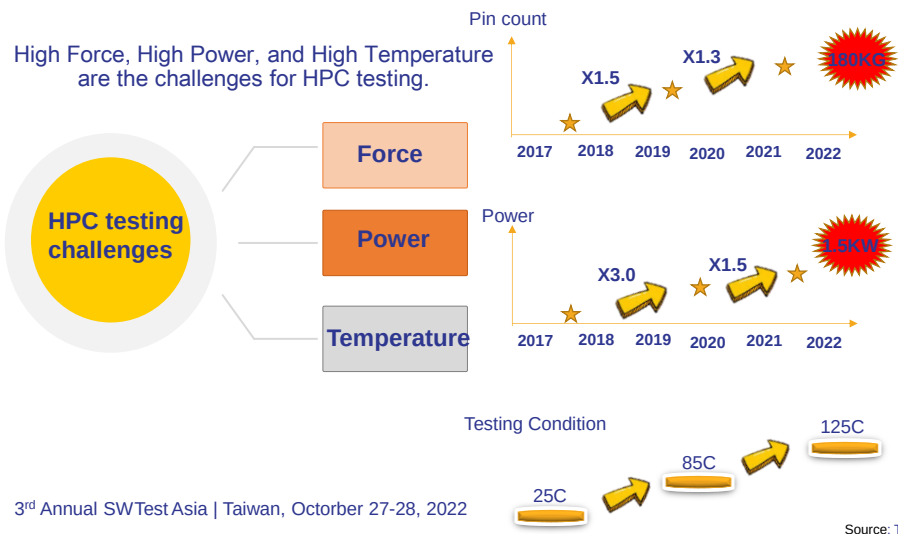
- **Comprehensive Product Range for Circuit Testing** 全方位的產品布局
MPI provides omnidirectional products to global customers, including fine pitch CPC, high speed VPC and high pin count MEMS solutions.
- **Solid Global Clientele** 堅實的國際合作夥伴
MPI works closely with worldwide market leaders, especially for 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 需求

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



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

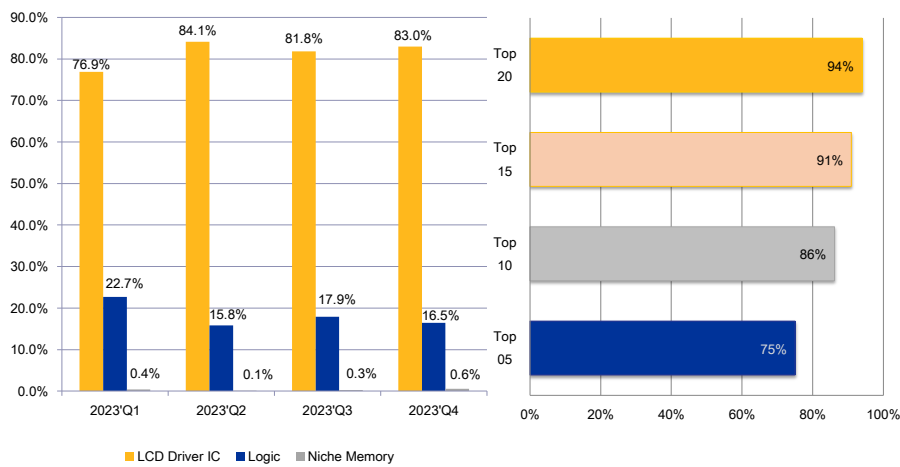
“2x4 Scaling”=2xPins, 2xPerformance, every 4 years



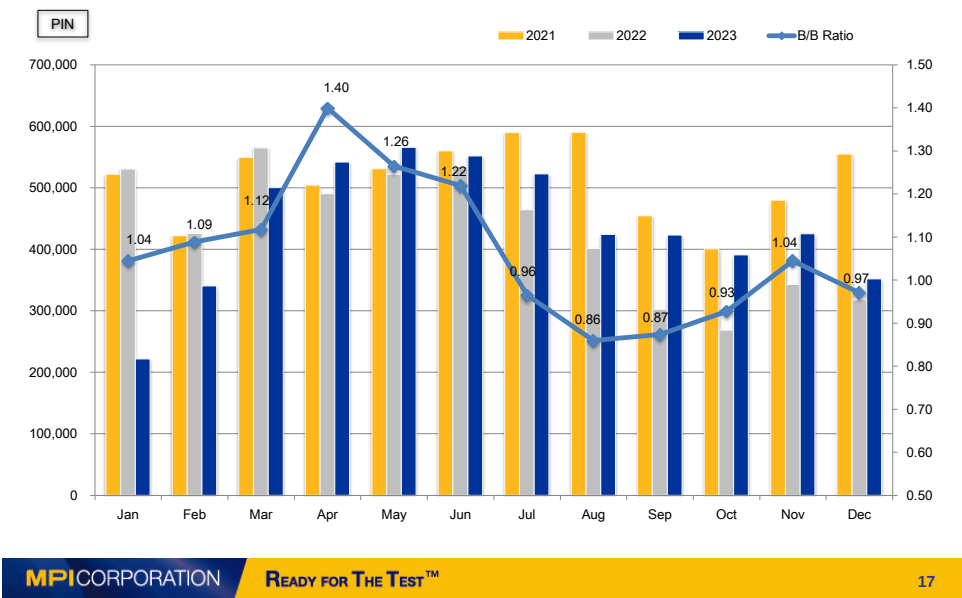
		2018	2022	2026
		Level 4	Level 5	Level 6
Pin Density	Pin Pitch	90um	70um	50um
	Total Contact Force	80kg	150kg	250kg
I/O Speed	Digital	32Gpbs	64Gpbs	128Gpbs
	RF/mmWave	< 12 GHz	29 GHz	+60 GHz
Device Power	Main Power	900 mV	750mV	625mV
	Single Rail	35A	50A	100A
	Impedance	2.2 mOhm	1.4 mOhm	0.8 mOhm
Thermal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

Source:Teradyne

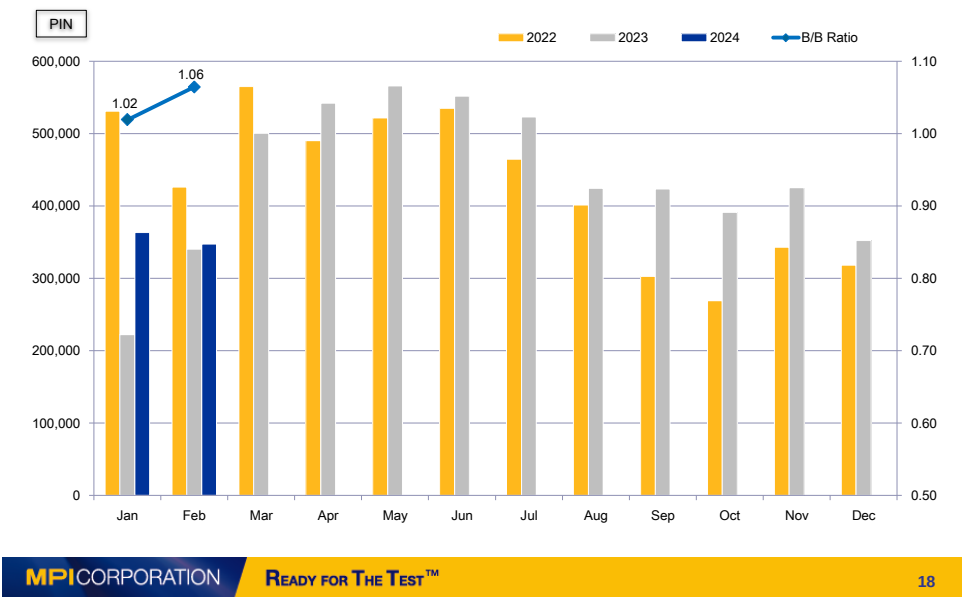
出貨產品結構及主要客戶



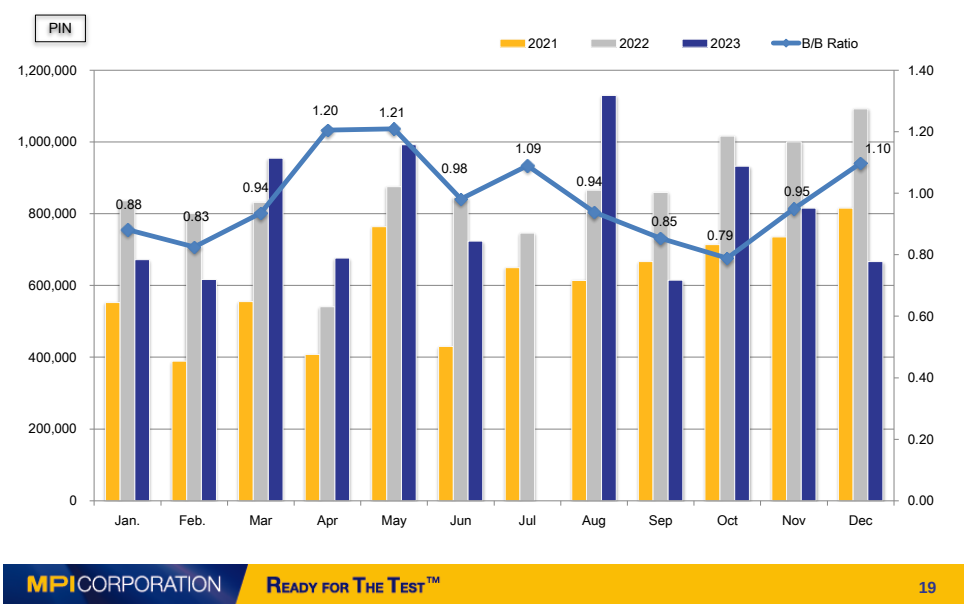
CPC月出貨針數及月接單出貨比_2023



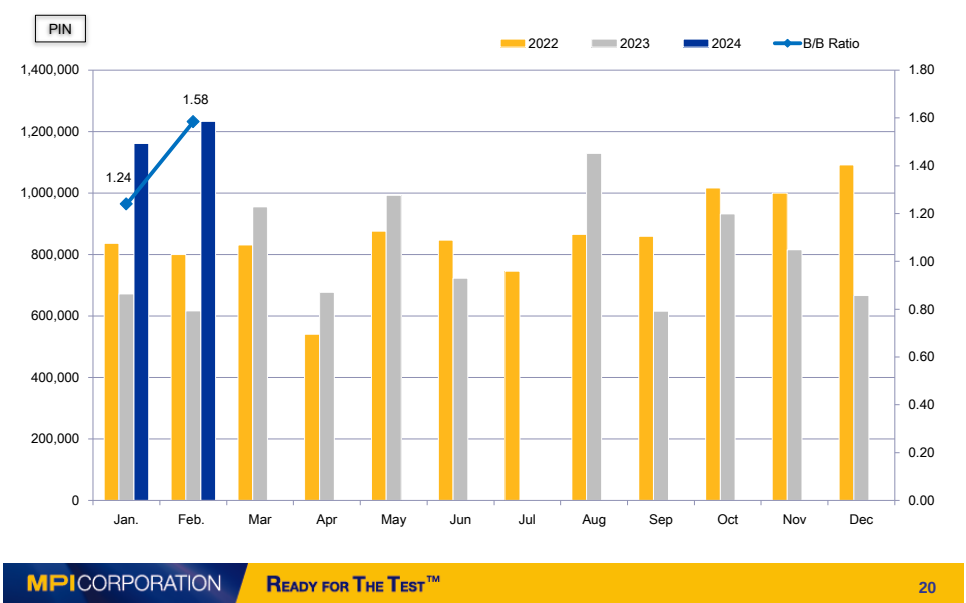
CPC月出貨針數及月接單出貨比_2024



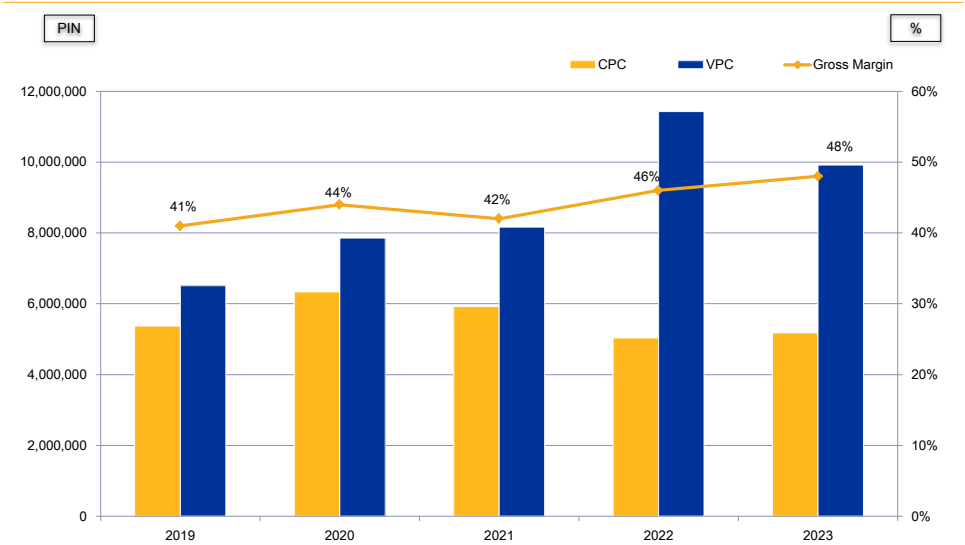
VPC月出貨針數及月接單出貨比_2023



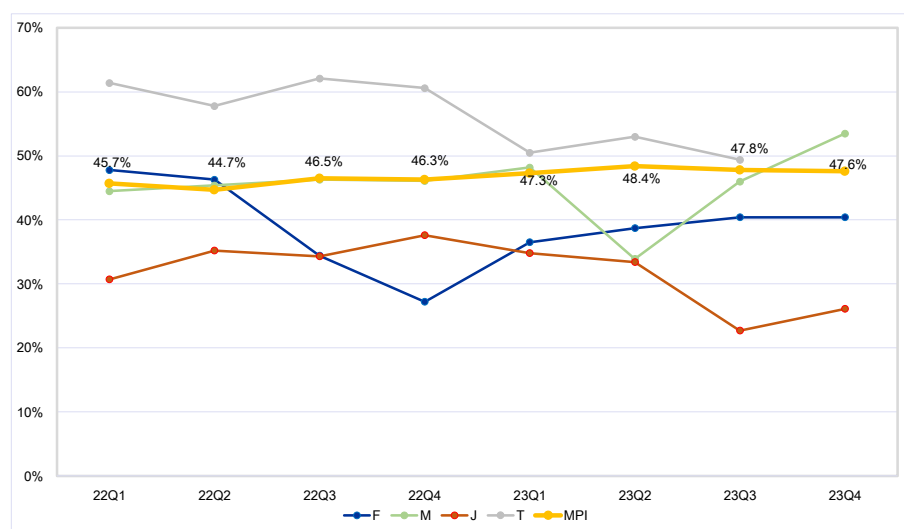
VPC月出貨針數及月接單出貨比_2024



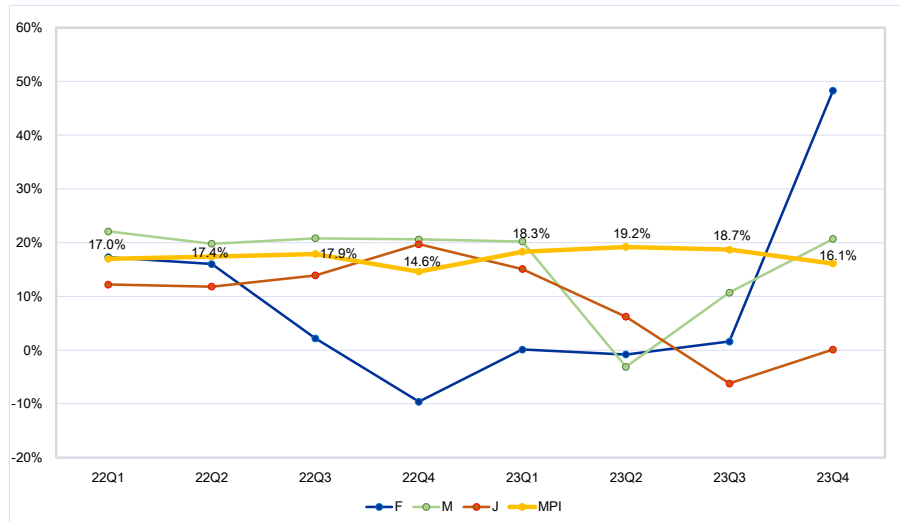
CPC及VPC成長趨勢



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.



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
- 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

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.

MPI Advanced Semiconductor Test

Engineering Probe Systems
and
RF Probe Products

50 – 300 mm

26 – 110 GHz

Applications & Industry Segments

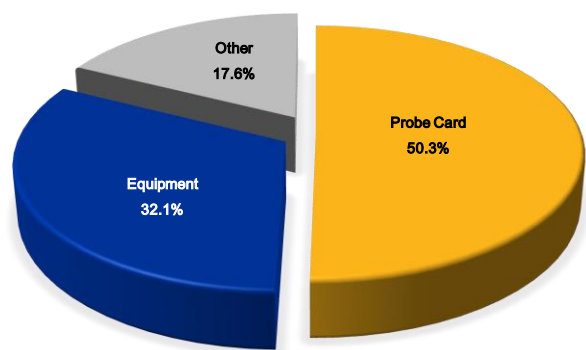
- Device Characterization
- High Power
- RF & mmW
- Design Validation
- Failure Analysis
- Wafer Level Reliability
- Silicon Photonics
- Laser Cutter

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.



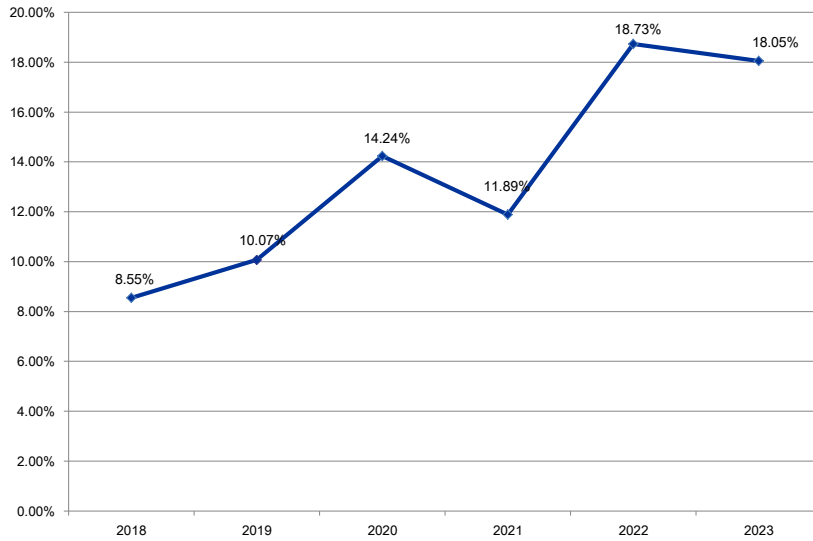
2023出貨分布



營業表現



股東權益報酬率



資產負債表

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

綜合損益表

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	

