



台灣晶技(股)有限公司 法人說明會 2025年03月

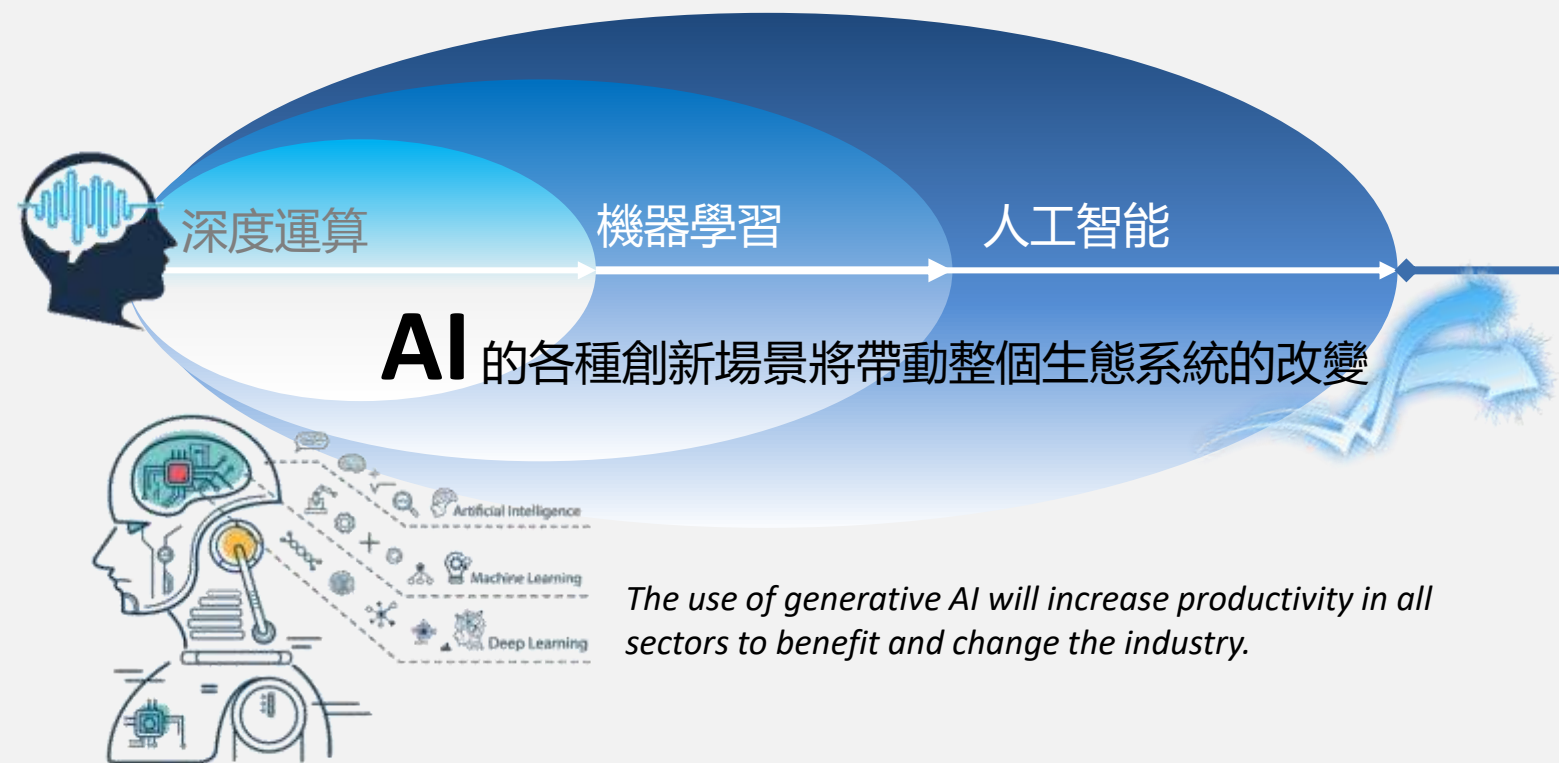
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人工智能將徹底顛覆改變我們的生活

大數據資料蒐集、訓練、推論、處理、傳輸建構AI生態系統

Diverged Purpose & Functions of AI, such as **Generative AI**, **Machine Learning**, and **Neural Language** play a very key role in future technology



終端資料數據蒐集

End Devices Increase by Sensing



- Data Collection
- Preprocessing
- Prediction & Prevention

訓練模型建立與學習

AI – based Data Infrastructure



- Model Selection
- Training
- Validation and Testing

資料推論運算與傳輸

Adaptive AI Everywhere



- Continuous Learning
- Feedback Loops

以推動科技持續創新、產業永續發展為己任

全面掌握人工智能生態系發展趨勢, 重點應用技術與產品解決方案



持續創新並領先
每年8~10%創新技術研發投入

更精準的時脈元件
資通訊建設完整解決方案

高頻與小型化
滿足次世代傳輸技術



聚焦關鍵成長市場區塊

AI-Powered Ecosystem outcomes enormous opportunities

Revolutionized Technology To Accelerate and Enhance the AI-Powered Ecosystem

5G-A



人工智能



汽車電子



- ✓ 推進5G-A基礎建設發展
- ✓ 通訊網路時代升級

- ✓ 人工智能基礎設施建置
- ✓ 網絡效能疊代升級

- ✓ 汽車電子化占比持續提升
- ✓ 先進輔助駕駛系統升級

人工智能生態系統的關鍵成長要素

Define Our Targets By Focus Segments and Identify The Challenge We shall Overcome by all means as **ONE TEAM**

高效運算

高密度的運算節點

By Gathering Massive Data via process in various training model to give prompt response by intelligence inferencing.



精準同步

超低網路資料延遲

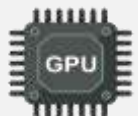
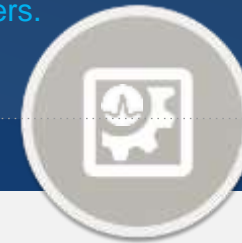
Consistency and Accuracy for Real-Time Processing with more efficient resources Utilization.



高速傳輸

大量數據傳輸

By Ensuring that data bandwidth, transfer speeds, and memory do not limit the potential of AI is leading hyper-scalers to pour billions into data centers.



(CPU/DPU/TPU/DPU)



(FPGA)

IEEE 1588 PTP
SyncE
TSN

(Protocol)



(Clock Gen/Synchronizer)

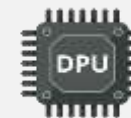
PCI EXPRESS
(PCIe)



(Smart NIC)

5G ADVANCED

NVLink™



SerDes



(Optical DSP)

WiFi™



人工智能加速智能生態系發展

各行各業將因嵌入GAI驅動內容的多場景案例而徹底變革，一個系統允許增生應用程序在多種情況下提供AI驅動的應用程序協助，大大優化了使用者的體驗

人工智能基礎建設



CAGR : 20.12% (from 2024 to 2029)



更智能化的傳輸技術

創新的技術發展驅動產業成長



- Wide Area : 5G, 5G-RedCap, NTN
- Local Area : Wi-Fi / BT / UWB / LoPWAN
- Ethernet / SerDes / Optical Network



邊緣運算裝置場景



Device set : 29.7 billion (2028)

人工智能推動數據基礎設施性能提升

高速網絡中的數據帶寬具有超低延遲，具備無限的超大規模數據網絡潛力

量產時程

2022

2024

2026

2028

2030

2032

2034

終端裝置傳輸帶寬流量升級速度



Ethernet Switch Chip Capacity

bps (bit/s) : bit per second

51.2 Tbps

102.4 Tbps

204.8 Tbps

409.6 Tbps

Optical DSP

400Gbps

800 Gbps

1.6 Tbps

3.2 Tbps

6.4 Tbps

High Speed Network Interface Card (NIC)

200/400 Gbps

800 Gbps

1.6 Tbps

3.2 Tbps

傳輸協定

SerDes

Ethernet SerDes

56/112 Gbps

224 Gbps

448 Gbps

896 Gbps

NVLink

Total Capacity, Direct GPU to GPU interconnection

NVLink4, 900 Gbps

NVLink5, 1.8 Tbps

NVLink6, 3.6 Tbps

NVLink7, 7.2 Tbps

PCI EXPRESS

PCIe Generation (Link Bandwidth)

G5, 32 Gbps

G6, 64 Gbps

G7, 128 Gbps

人工智能 基礎建設

高速傳輸及運算的基礎核心是由各類型處理器所組成的應用互相搭配，以建置更完善穩定的人工智能網絡

人工智能伺服器



Compute Tray **x18**
Computing Baseboard + Interposer

Ai/M **x16~32**
Accelerator Card

Switch Tray **x9**

(Support 8x NC maximum per tray)
(14.4TB/s support 16 Port w/400G)

SmartNC **x72**

◀For Network Data Security / Distribute▶

頻率元件產品趨勢

- ✓ 用量提升
- ✓ 產品群組組合優化
- ✓ 平均銷售單價提升



Advanced Oscillator Family

- ✓ Higher Frequency (~312.5MHz)
- ✓ Miniature (~2.0x1.6mm)
- ✓ Ultra-Low Jitter (~50fs)



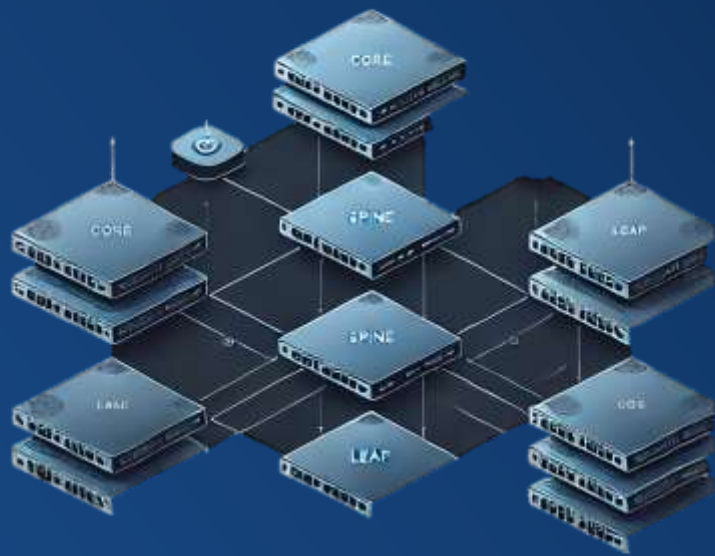
Precise Oscillator Family

- ✓ Higher Frequency (~156.25MHz)
- ✓ Ultra-Stability (~+/-10~150ppb)
- ✓ Anti-Air Flow Scenario

人工智能 基礎建設

智能網絡架構的概念可以應用於數據中心、企業和運營商網絡部署業務

智能網絡建置



Key Applications Opportunities from AI Infrastructure

Optical Module



(Maximum 64 port for 51.2T Switch)

頻率元件產品趨勢

- ✓ 產品群組組合優化
- ✓ 平均銷售單價提升

ToR/Leaf Switch



(PCIe Gen5 / 112G SerDes Support)

General-Purposed
(Required Sets determined by Network deployment)



Advanced Oscillator Family

- ✓ Higher Frequency (~625MHz)
- ✓ Miniature (~2.0x1.6mm)
- ✓ Ultra-Low Jitter (~30fs)
- ✓ Tighter Stability (+/-20ppm)

Security Firewall

(PCIe Gen5 / 112G SerDes Support)

★ (Low Latency / PTP optional) ★

Spine Switches



Precise Oscillator Family

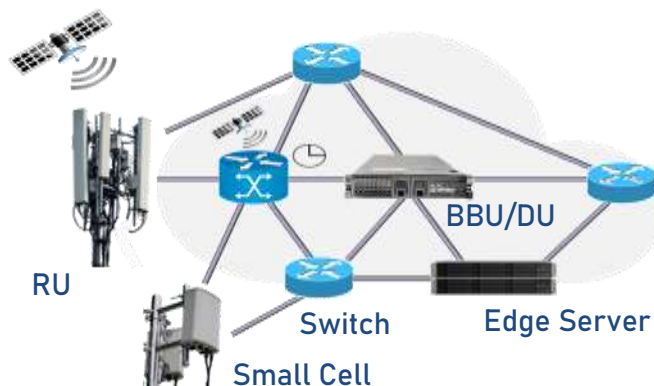
- ✓ Ultra-Stability (~+/-10~150ppb)
- ✓ Extended Holdover (~24 hrs)

★ (PTP/IEEE1588) ★

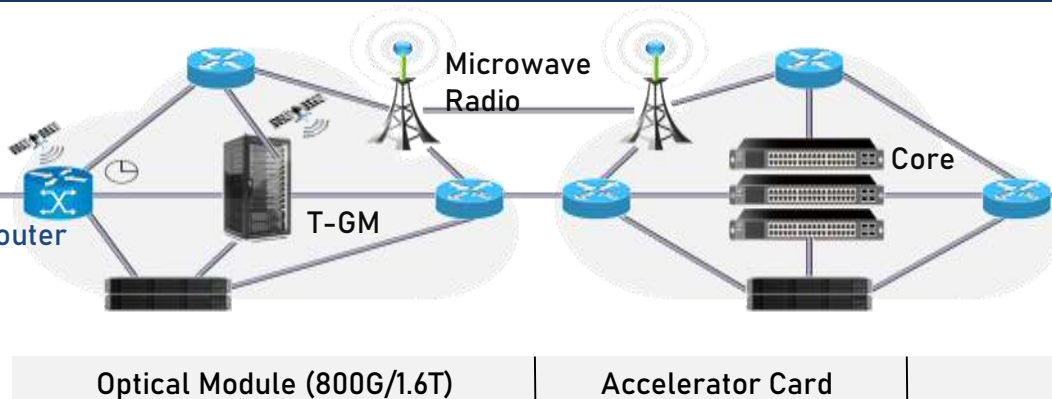
人工智能將使無線通訊傳輸網絡更為靈活

智能化的無線網路需求將帶動更多高階精準的晶體震盪器的產品需求

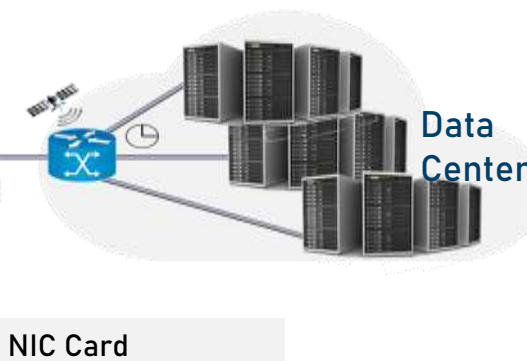
無線電智能存取網路



核心/光傳輸骨幹網



數據中心



• AI 智能化帶動低功耗需求



• 核心傳輸網 (BBU, Edge, Router)



• 高速運算強化



• 極端氣候應用場景



• 光傳輸骨幹網 (e.g., OLT)



• 資料中心實時同步需求

精準無比的頻率讓每一個**同步需求**更穩定

精準晶體震盪器提供實時校準及補償的穩定頻率給每一次的資料傳輸

ThermSym 平台™

多場景恆溫晶體震盪器

OE OG OH OK
14x9 mm 9x7 mm 7x5 mm 5x3mm



ThermSymEros

Industry smallest OCXO 5x3mm

ThermSymHecules

Industry Highest Ta up-to 105C

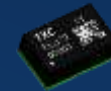
ThermSymChronos

Holdover 4~6 hours in 9x7mm

★全新恆溫晶體震盪器解決方案★

Xterniti 平台™

AI賦能恆溫晶體震盪器



Xterniti

- Resonator temperature output
- Hysteresis Compensation
- Stratum 3 performs like stratum 2
- 24 hours < 1µs in constant Ta
- 8~24 hours < 1µs in dynamic Ta



AI-ON Devices

多元高效能運算與高速傳輸場景帶動終端人工智能設備增長

提供最佳產品解決方案

Hybrid Connectivity + AI On Devices will drive multiple mobile use cases at Edge side for end users

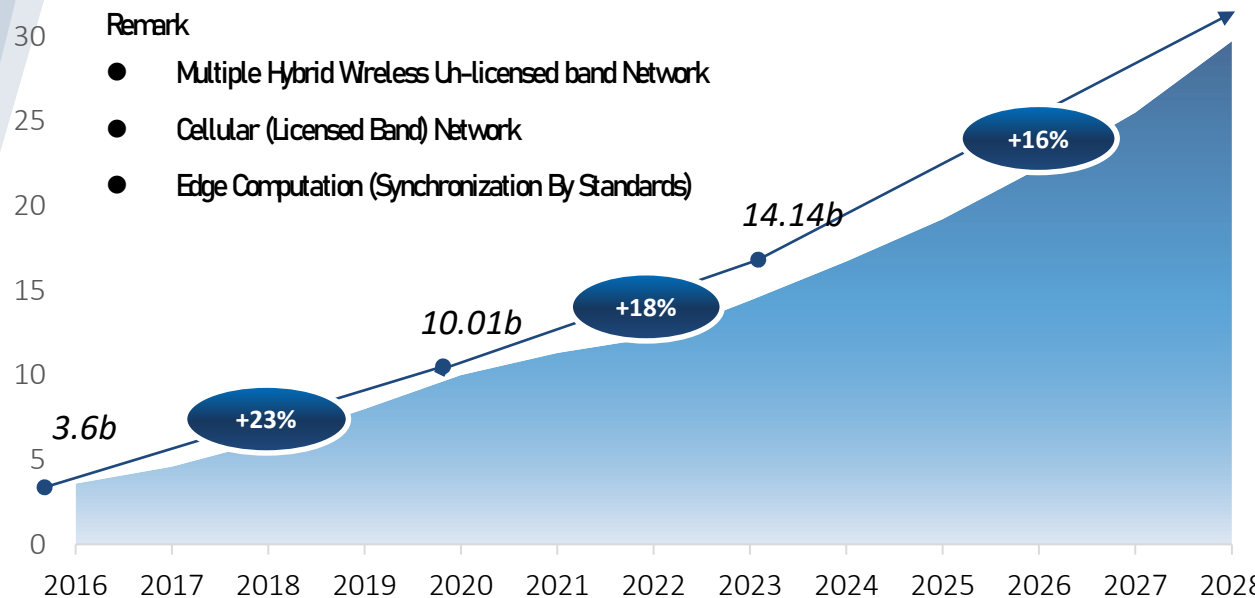
- ✓ New Generation Technology Adoption
- ✓ Usage+
- ✓ Product Matrix Diversified (Miniature + Higher Frequency)

全球互聯網智能裝置預估年複合成長率 (依照連接技術分類)

裝置聯網網絡種類	年複合成長率 (23 ~ 28)	傳輸技術
★ WPAN (P: Personal)	16%	Bluetooth, Zigbee, Thread, UWB
★ WLAN (L: Local)	16%	WiFi, Bluetooth
Cellular IoT (exclude 5G, LPWA)	8%	Lte
★ LPWAN (LP: Low Power)	27%	LoRa, NB-IoT, LTE-M, Sigfox, Sub-1GHz
★ Cellular 5G IoT	87%	5G, 5G Redcap
Wired IoT	10%	Ethernet, Fibers, PLC...
WNAN (N: Neighbor)	8%	Wi-SUN

Number of Global active IoT installed connections in Billions Unit

Unit : Billions



Source: IoT Analytics

車用電子 策略藍圖

目標營收占比 ~25%+

Key Growth Drivers By Applications & Scenarios

- Advancements in Autonomous Driving Technologies
- Connectivity and Infotainment System Upgrade
- Innovation in Vehicle-to-Everything

汽車電子

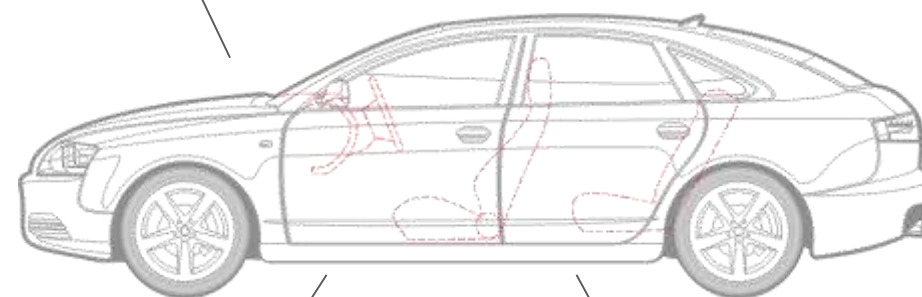


版圖擴張

汽車電子關鍵成長領域

★ 自動駕駛



智能座艙 ★



汽車安全

車身控制

重點應用與產品解決方案

- ↑ Key ADAS components for Autonomous Driving (Radar / Camera / HPC)
 *Standard Oscillators & High Frequency Advanced Oscillator*
- ↑ Key Users Experience Enhancement (Fusion of Cockpit, Cluster, & Infotainment)
 *High Frequency Crystal & TSX <Telematics + Connectivity>*
- ↑ Vehicle Electrification of Applications Giants (Global Tier 1)

布局汽車電子市場藍圖規畫帶動長期發展

以生態系角度全面鎖定關鍵目標成長客戶群

2020 - 現在

短期發展 (2025 - 2027)

中長期發展 (2027 - 2030~)

規劃, 執行, 並定期檢視策略藍圖

- Key Growth from Electric Vehicle Players
- AVL Running Change in Key Accounts
- TXC Automotive Reputation Increase

擴張策略藍圖

- Deployment of regional automotive customers
- Exploration of Tier 1 Suppliers for Automotive Brands
- Expand end customers by application
- IDH's reference design and promotion of end customers

15%

2023 Market Share

Source: QYR Research Jul. 2024



Timing Industry Leader

Market Share

20%+

以人工智能生態系架構, 規劃執行完整策略藍圖

5G-A



人工智能



車用電子



成長計畫

Double % Growth of Total Sales

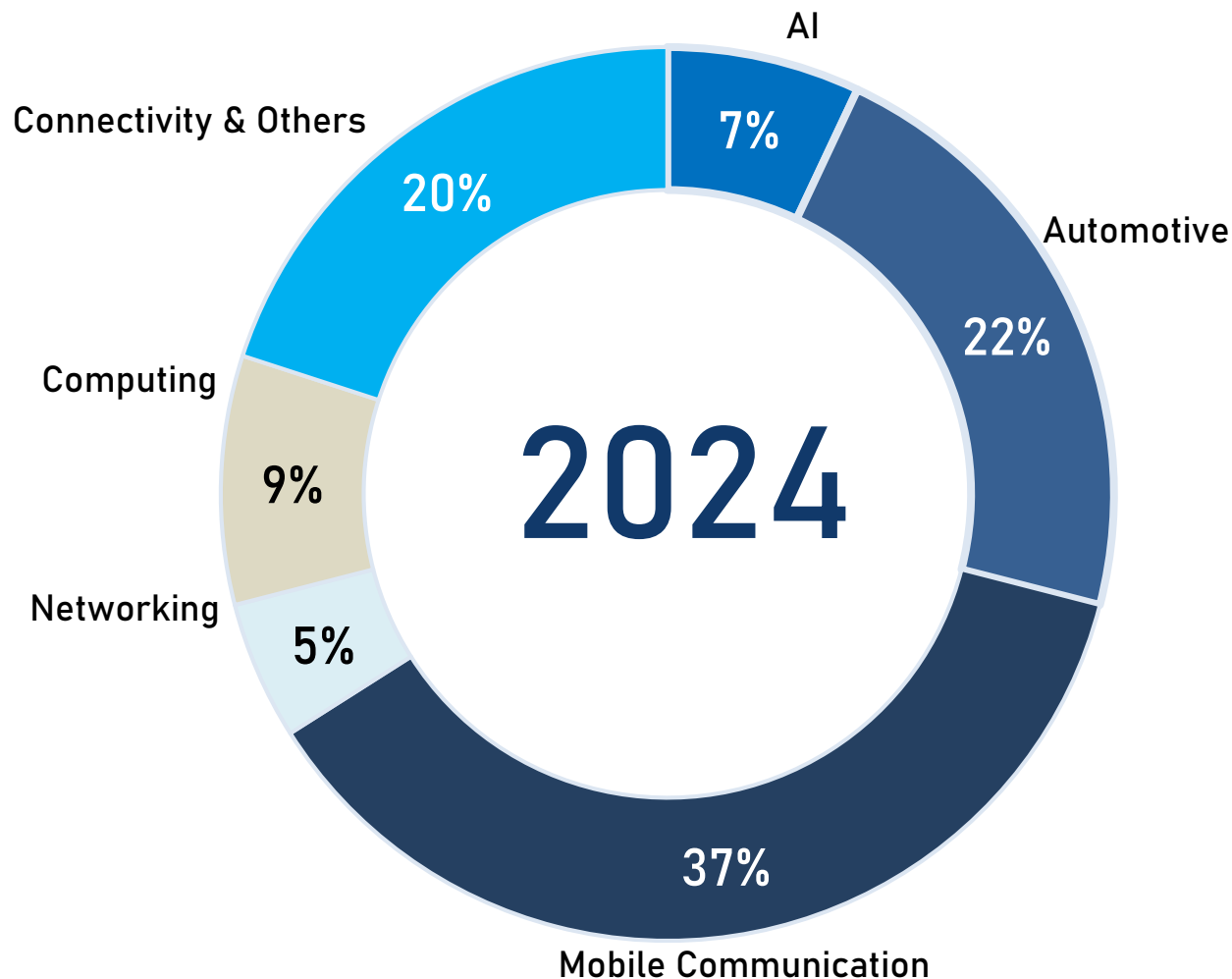
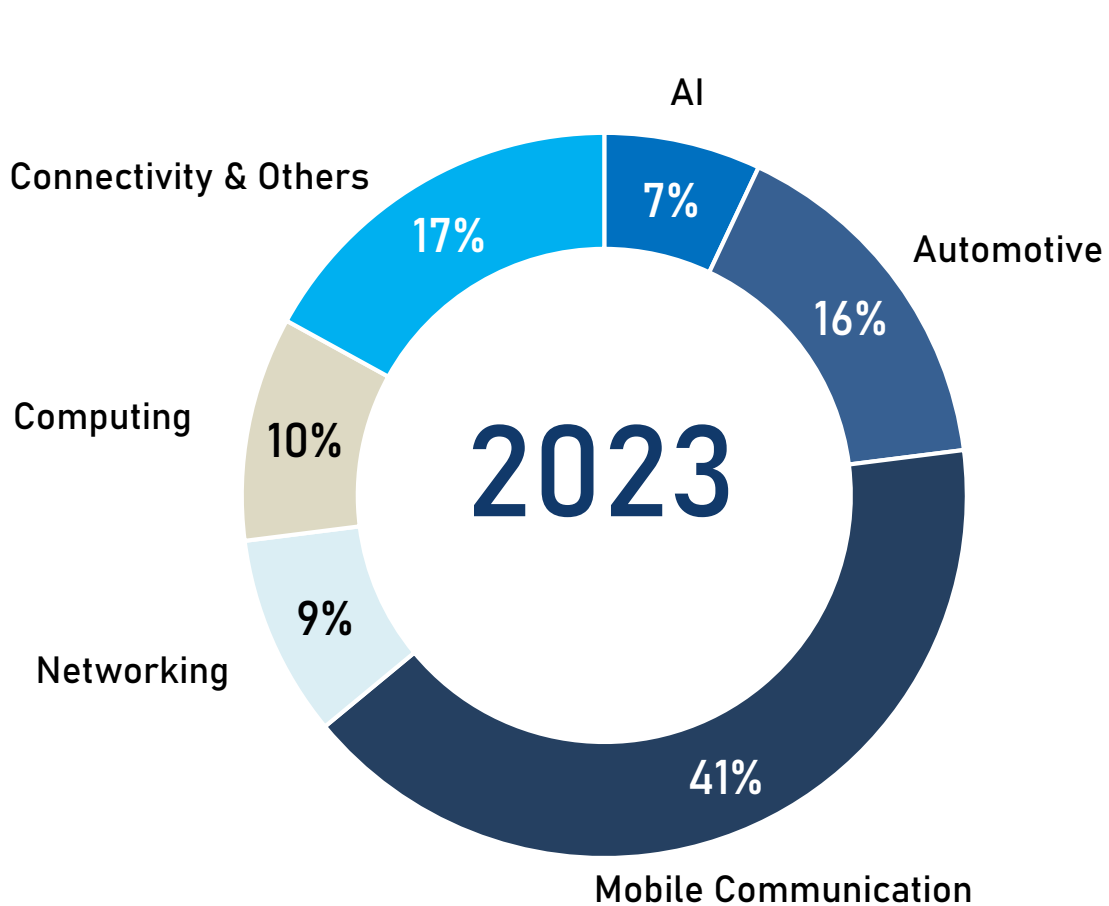
- 各高階/精準震盪器應用解決方案
- 各應用區塊重點指標客戶增長

25%+ Growth of Total Sales

- 車載應用升級結合產品組合優化
- 高度電子化與自動駕駛升級帶動需求

重點產業營收占比

全面佈局關鍵產業區塊, 客戶, 挹注營收成長動能



綜合損益表

單位: 台幣百萬	Q4'24	Q3'24	QoQ	YOY	2024	2023	YOY
營業收入	3,328	3,668	-9.28%	9.45%	12,672	10,850	16.79%
營業毛利	1,132	1,282	-11.73%	-1.41%	4,487	3,860	16.25%
營業費用	660	595	11.08%	24.73%	2,351	1,991	18.07%
營業淨利	471	687	-31.46%	-23.80%	2,136	1,869	14.31%
營業外收入及支出	223	-79	-381.81%	-280.75%	438	194	125.69%
稅前淨利	694	608	14.20%	40.38%	2,575	2,063	24.80%
稅後淨利	569	514	10.73%	39.47%	2,137	1,714	24.73%
基本每股盈餘(新台幣元)	1.66	1.5	10.67%	26.72%	6.55	5.53	18.44%
營業毛利率(%)	34.00%	34.95%			35.41%	35.57%	
營業費用率(%)	19.85%	16.21%			18.55%	18.35%	
營業淨利率(%)	14.16%	18.74%			16.86%	17.23%	
稅前淨利率(%)	20.87%	16.58%			20.32%	19.02%	
純益率(%)	17.10%	14.01%			16.87%	15.79%	

資產負債表

單位: 台幣百萬 項目	Dec '24		Dec. '23	
	Amount	%	Amount	%
現金及約當現金	3,906	17.6%	4,204	22.3%
應收票據及應收帳款	3,760	17.0%	3,255	17.3%
存貨	2,825	12.7%	2,470	13.1%
流動資產	12,559	56.6%	10,812	57.4%
總資產	22,171	100.0%	18,822	100.0%
流動負債	4,199	18.9%	4,768	25.3%
非流動負債	1,527	6.9%	2,180	11.6%
總負債	5,726	25.8%	6,949	36.9%
合併股東權益	16,444	74.2%	11,874	63.1%
平均收現日數	101		115	
平均銷貨日數	118		135	
流動比率(%)	299%		227%	
負債比率(%)	25.8%		36.9%	
總資產報酬率(%)	10.7%		9.1%	
股東權益報酬率(%)	15.1%		14.1%	

2025 資本支出計畫

強化核心技術, 智能工廠建置, 海外生產據點

A+ Enhancements

- ✓ Core Technology
- ✓ Advanced Process
- ✓ Innovation Capability

4.0 Smart Factory

AI meets IOT

- ✓ Smart Manufacturing
- ✓ Automation and Robotics
- ✓ Data Analytics and AI

N+1 New Factory

- ✓ Indonesia
- ✓ Japan
- ✓ Asia

ESG Sustainability

ZERO EMISSION

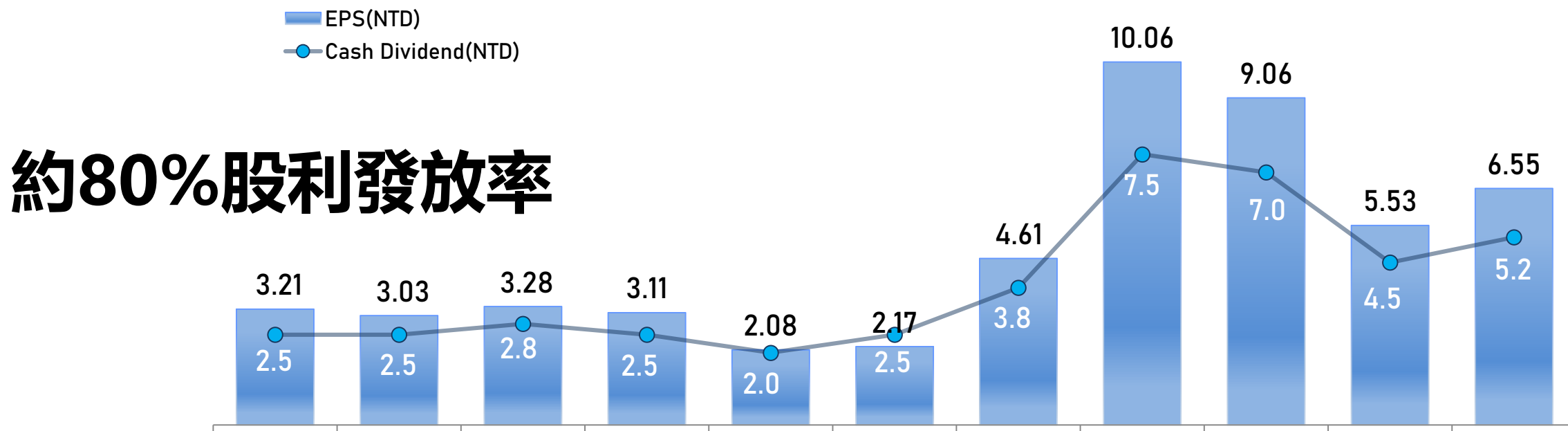
- ✓ Environment
- ✓ Social Responsibility
- ✓ Governance

Unit: NT\$ Million



每股盈餘與現金股利

穩定殖利率與高配息



年度	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
股價	39.9	41.1	44.5	39.0	36.0	44.0	99.8	98.0	89.4	105.5	100.5
股利發放率(%)	77.9%	82.5%	85.4%	80.4%	96.2%	115.2%	82.4%	74.6%	77.3%	81.4%	81.4%
每股盈餘(NTD)	3.21	3.03	3.28	3.11	2.08	2.17	4.61	10.06	9.06	5.53	6.55
現金股利(NTD)	2.5	2.5	2.8	2.5	2.0	2.5	3.8	7.5	7.0	4.5	5.2

環境生態, 永續經營, 公司治理

我們關注並致力於每一份承諾
多元價值帶動企業持續性成長

2024 RE%
6 % (On Schedule)

零碳排時程

RE 30 By 2030

RE100 By 2050

MORNINGSTAR SUSTAINALYTICS

ESG Risk Rating

17.7 pts (Low Risk)



榮獲「112年度公司治理評鑑」獲得上市公司排名前6%~20%之肯定



“【外資精選台灣100強】”



榮獲天下雜誌“符合《巴黎協定》1.5 °C 溫控目標”之企業



通過 ISO14064 / ISO14067 / ISO 50001



Q&A Section

Thank You