



Taiwan Polyimide

We know Polyimide

Kevin Chen/Paul S. C. Wu

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CONFIDENTIAL

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Company Profile

Operating Result & Application Market
2021Q1-Q3

Product Development Direction

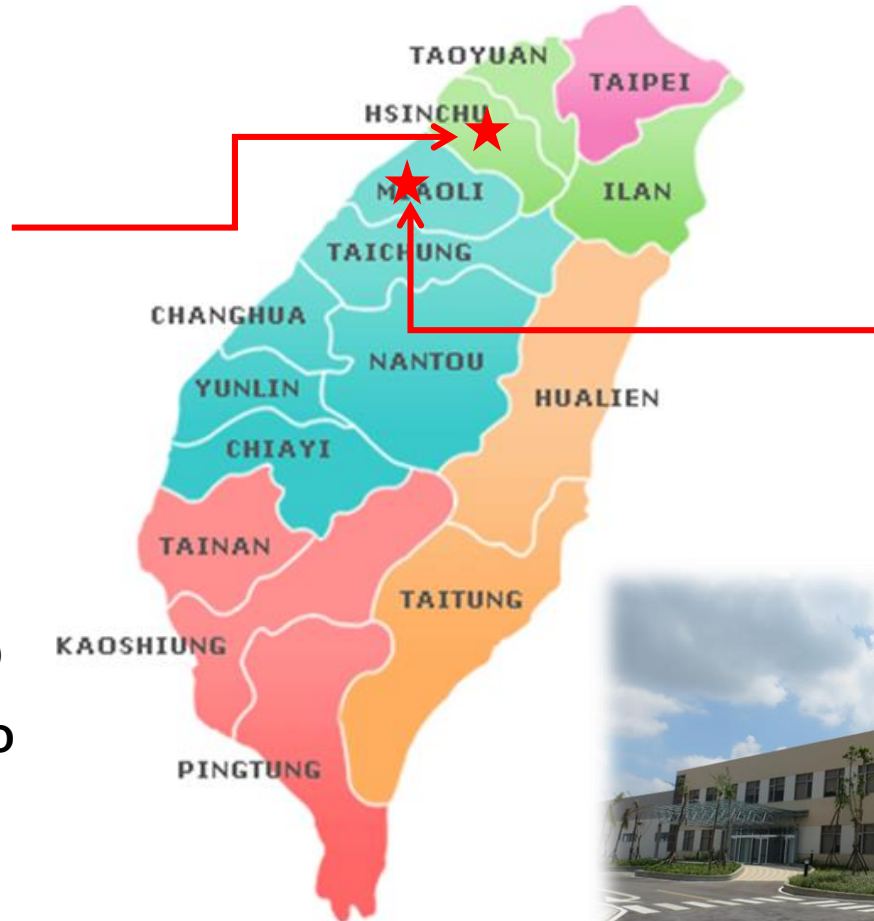
Q & A

Company Profile

Company Profile 簡介



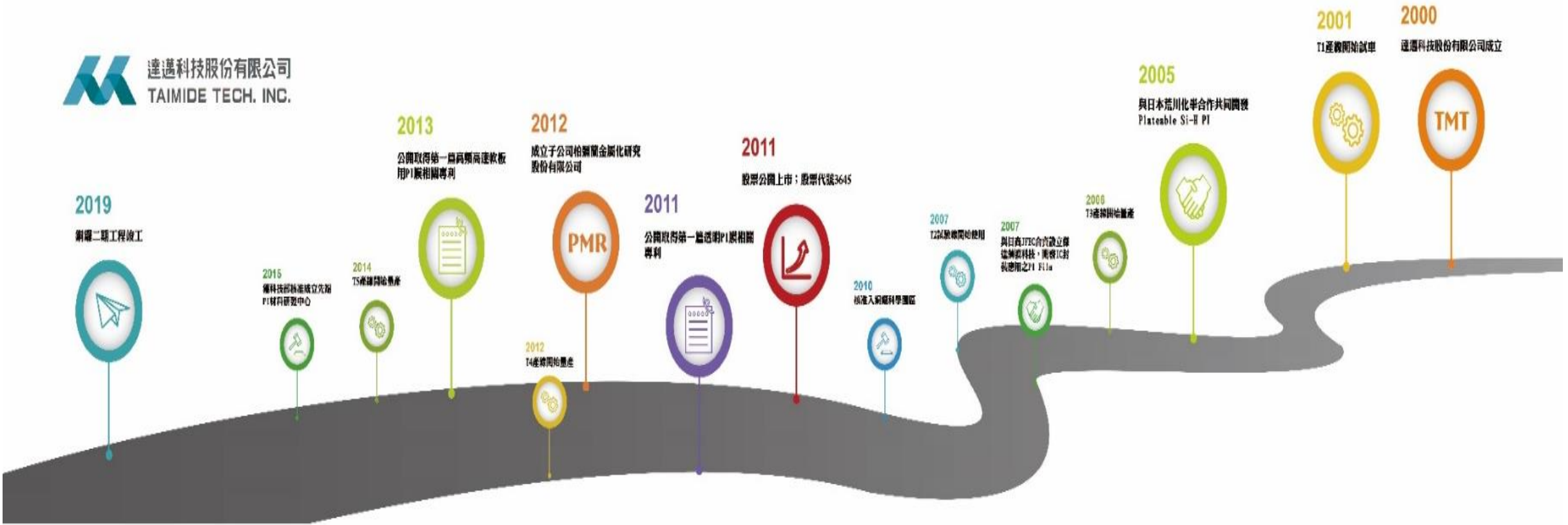
- Established: June, 2000
- Company capital: ~47M USD
- Plant sites: Hsinpu & Tongluo
- Employees: ~400
- IPO in TSE: October, 2011



Polyimide Film
Manufacturer



Milestones 大事紀



Operating Result & Application Market 2021Q1-Q3

FPC production value 軟板產值變化



註：包含後段元件組裝產值

資料來源：TPCA：工研院產科國際所 (2021/08)

軟板應用範圍擴大



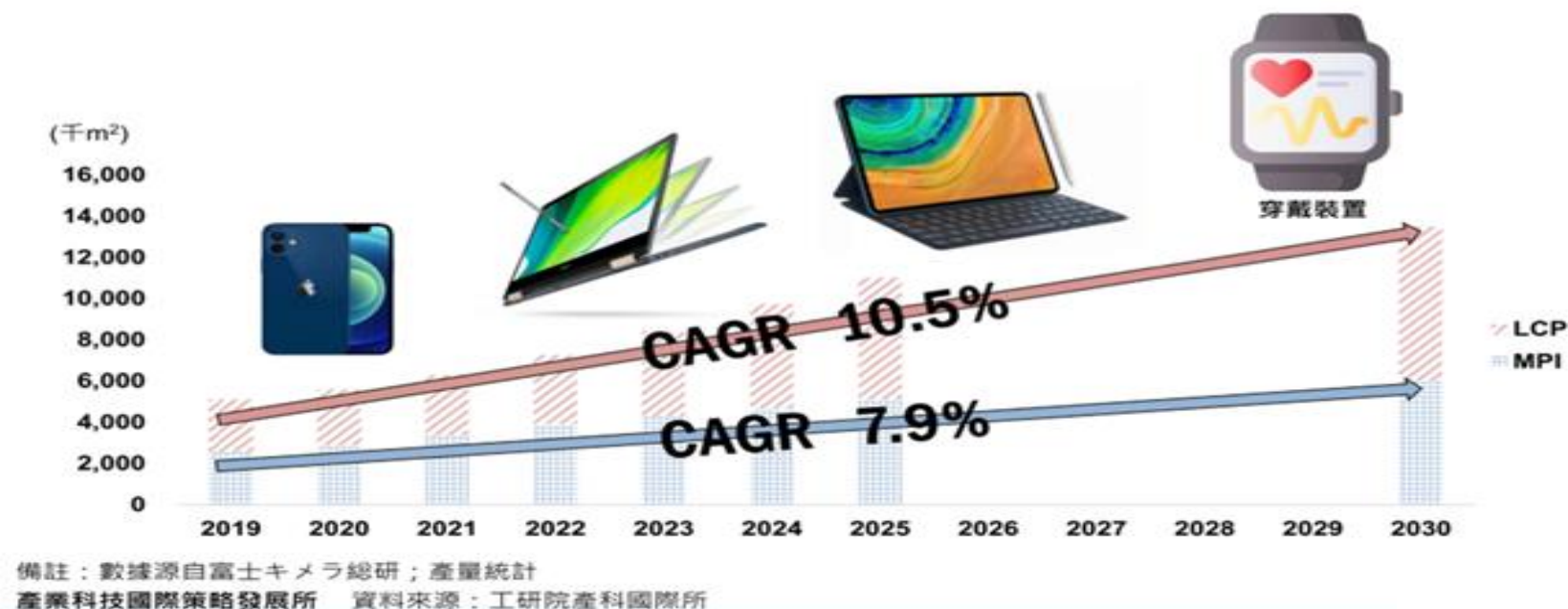
資料來源：TPCA：工研院產科國際所(2021/08)

5G、high frequency & speed of FPC Market

5G、高頻高速軟板材料市場

終端支援5G、高頻高速軟板材料市場將持續成長

- 未來智慧型手機、平板、筆電、穿戴裝置等終端產品都將5G連網。
高頻高速軟板數量增加，高頻高速軟板材料需求隨之成長。



Output value of PCB for electric vehicles 電動車用電路板產值



資料來源：工研院產科國際所

Operating Result 2021Q1-Q3

Statements of Comprehensive Income



Selected Items from Statements of Comprehensive Income

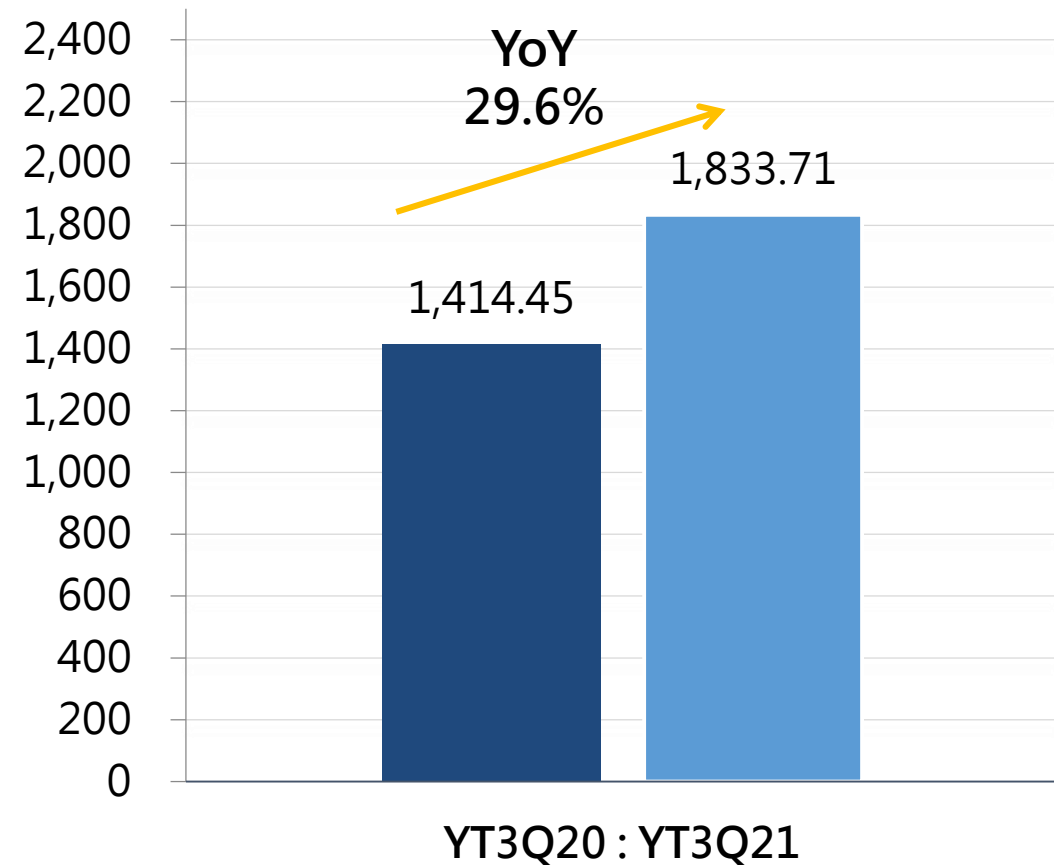
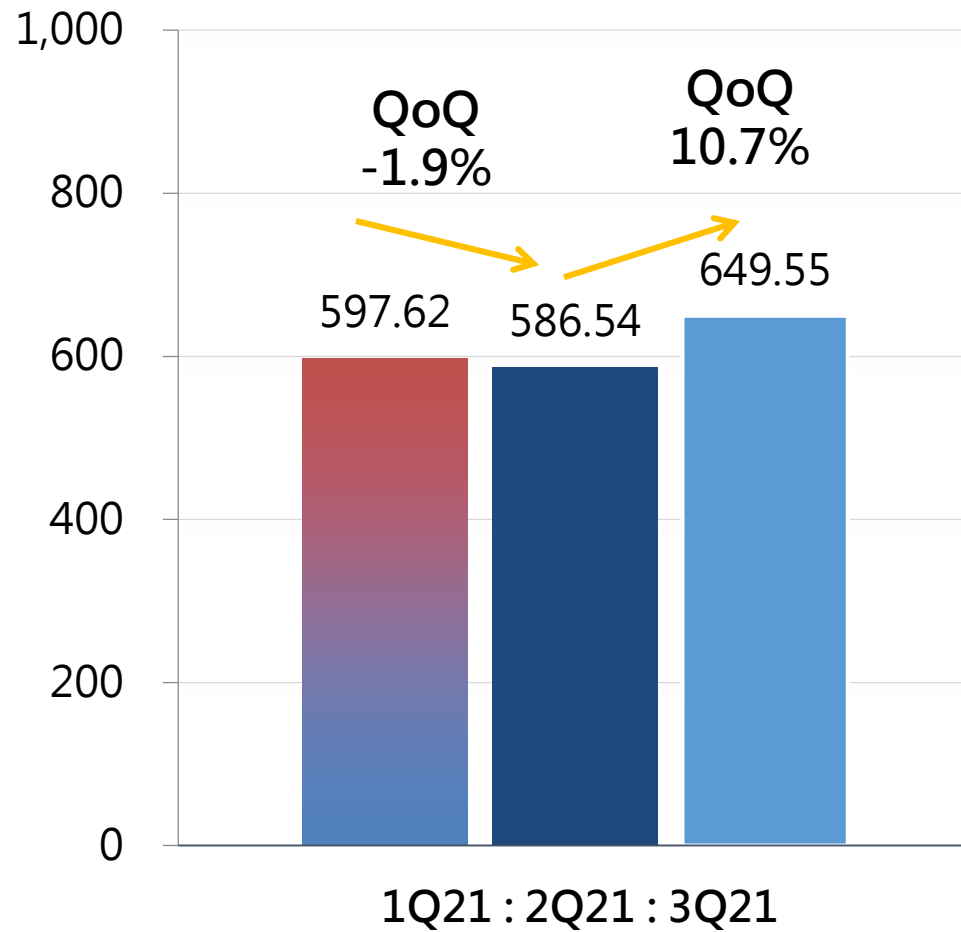
	3Q21	2Q21	YT3Q21	YT3Q20	3Q21 over 2Q21	(NT\$ million) Y2021 over Y2020
Net Revenue	649.55	586.54	1,833.71	1,414.45	10.7%	29.6%
Gross Margin	30.1%	29.5%	32.0%	37.8%	0.6ppts	-5.8ppts
Operating Expenses	92.14	88.83	273.73	236.27	3.7%	15.9%
Net Operating Income	0.16	83.99	312.36	297.82	-99.8%	4.9%
Non-Operating Items	4.67	(9.49)	(12.71)	(21.47)	-149.2%	-40.8%
Profit before tax	108.36	74.51	299.65	276.34	45.4%	8.4%
Tax Expense	27.67	0.70	56.67	12.75	3869.9%	344.4%
Consolidated Net Income	80.69	73.80	242.98	263.59	9.3%	-7.8%
Net Profit Margin	12.4%	12.6%	13.3%	18.6%	-0.2ppts	-5.3ppts
EPS(NT Dollar)	0.63	0.58	1.91	2.09	8.6%	-8.6%

CONFIDENTIAL *Diluted weighted average outstanding shares were 131 million units in 3Q21.

Consolidated Revenue



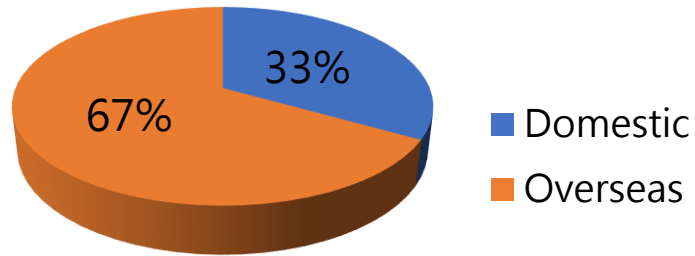
(NT\$ million)



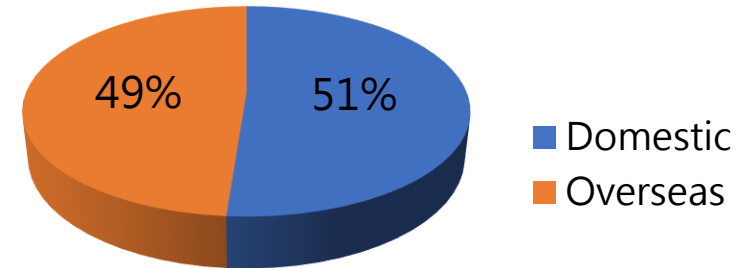
Regional Sales



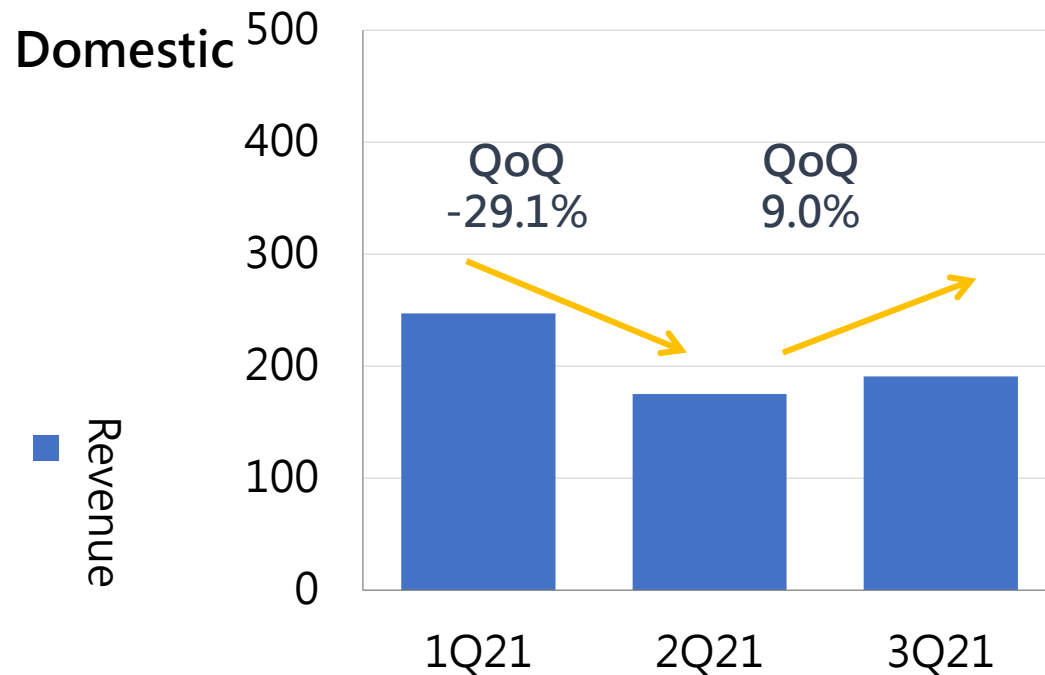
YTQ3 2021



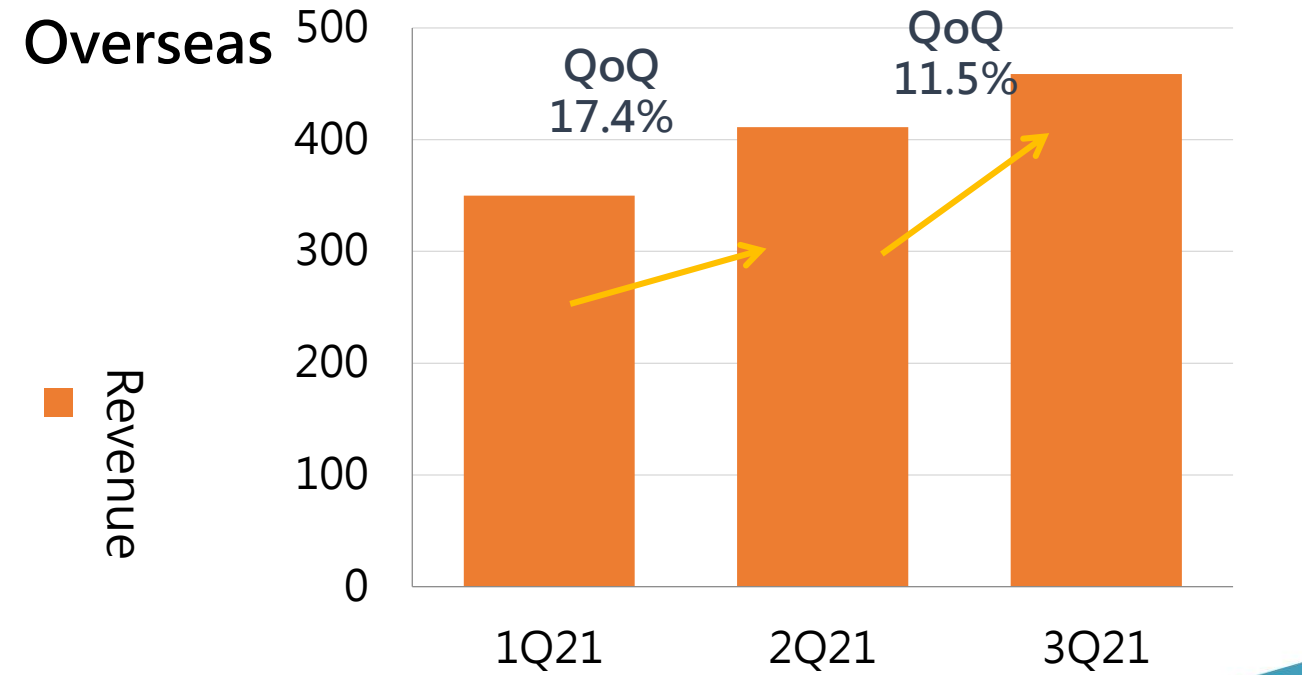
YTQ3 2020



Domestic

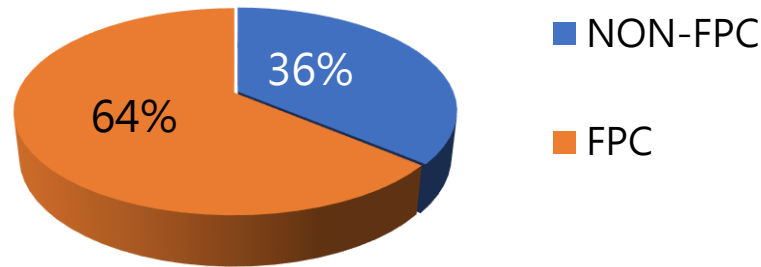


Overseas

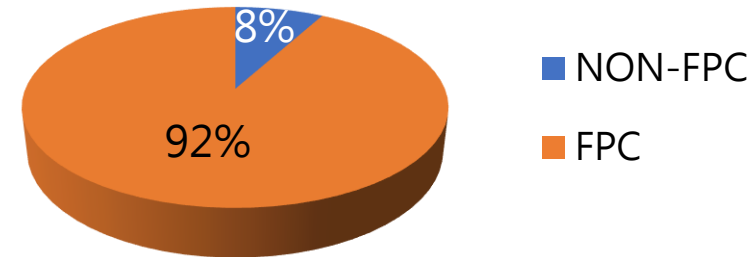


Application Analysis

YTQ3 2021

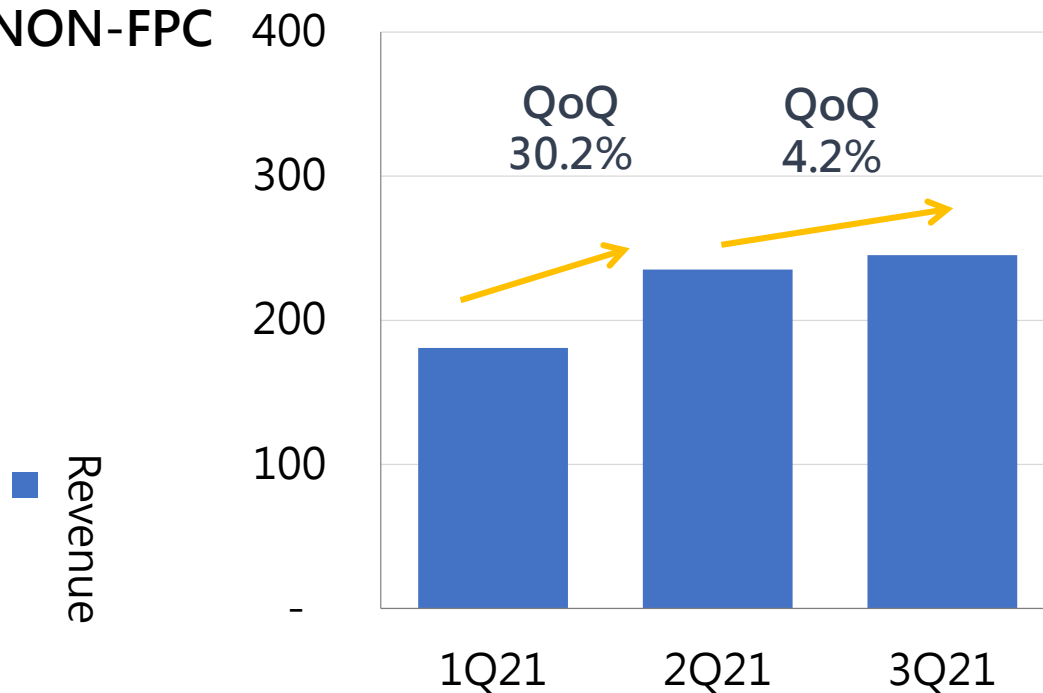


YTQ3 2020

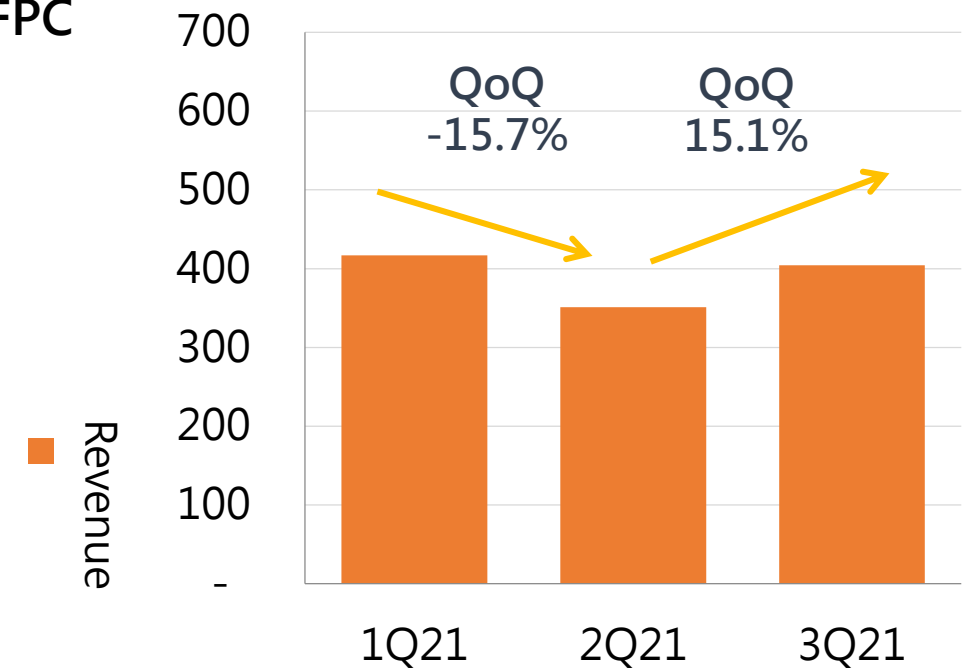


(NT\$ million)

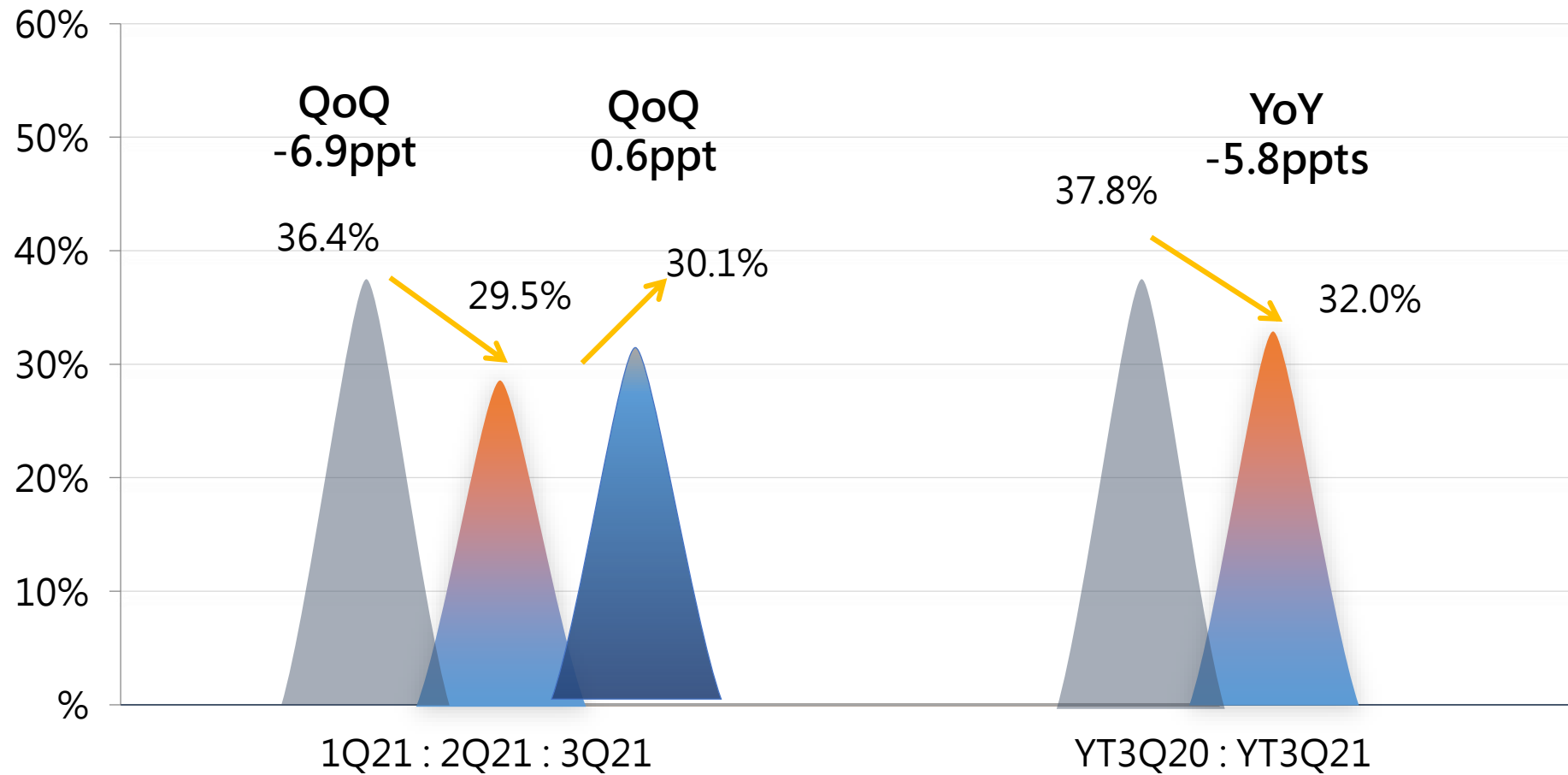
NON-FPC



FPC



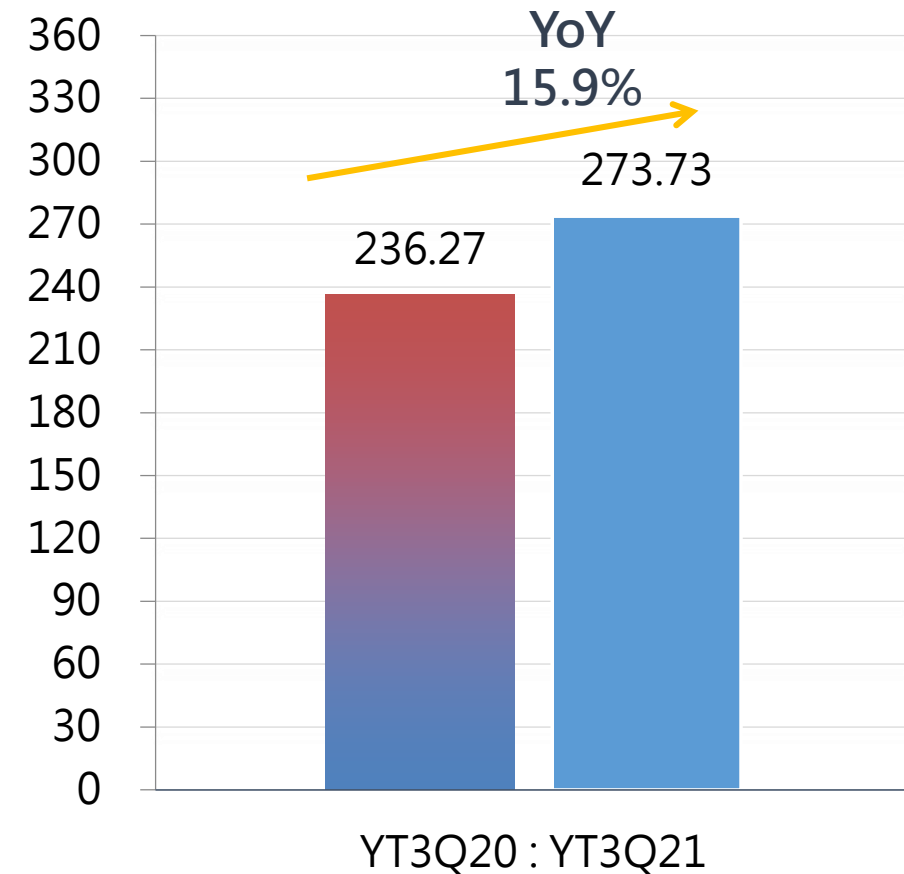
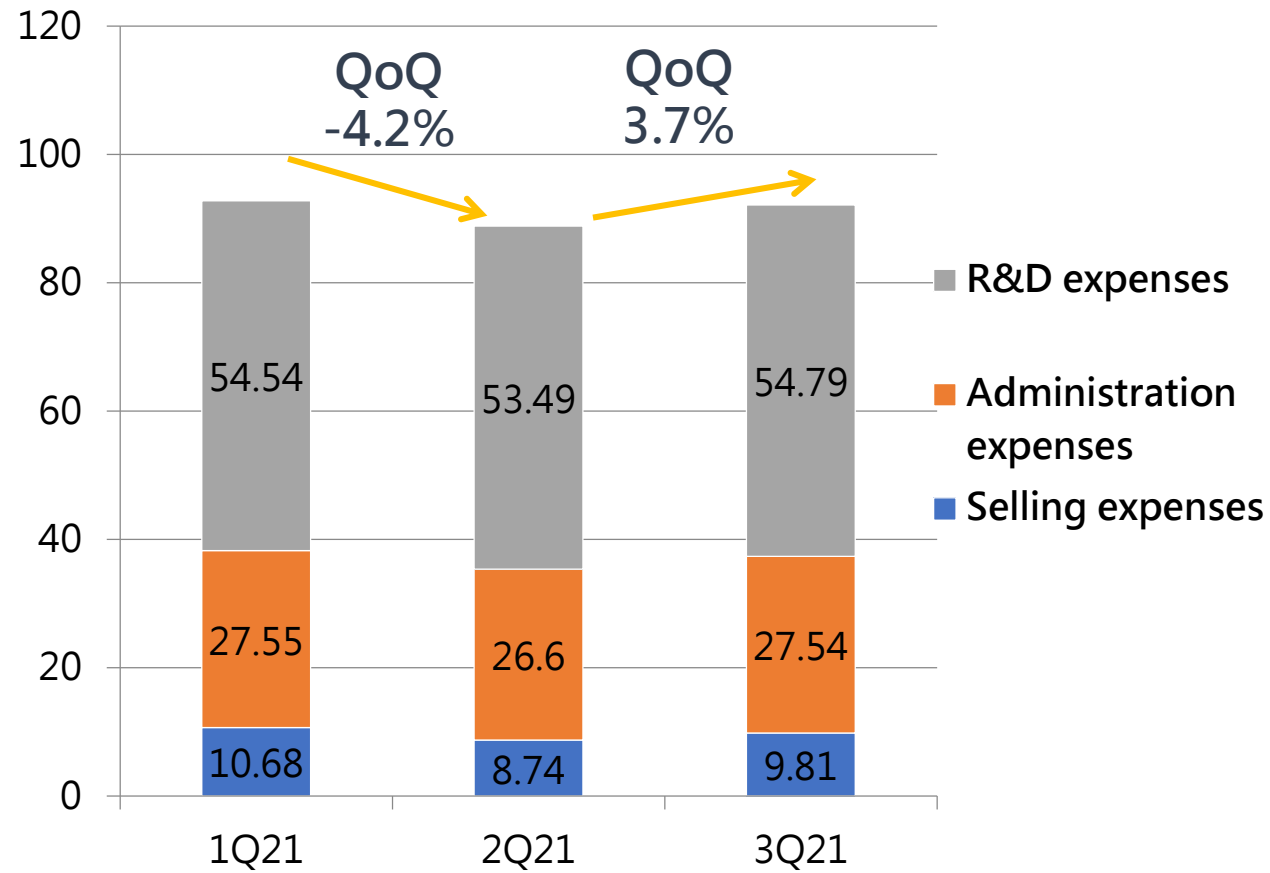
Consolidated Gross Margin



Consolidated Operating Expenses

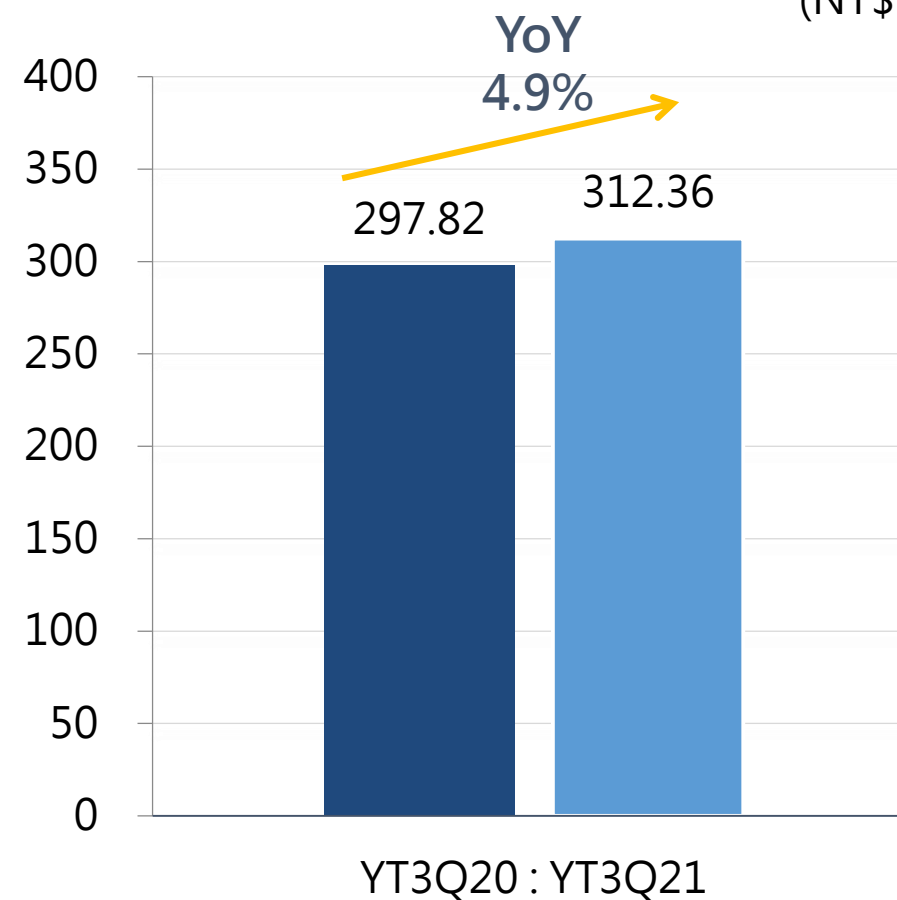
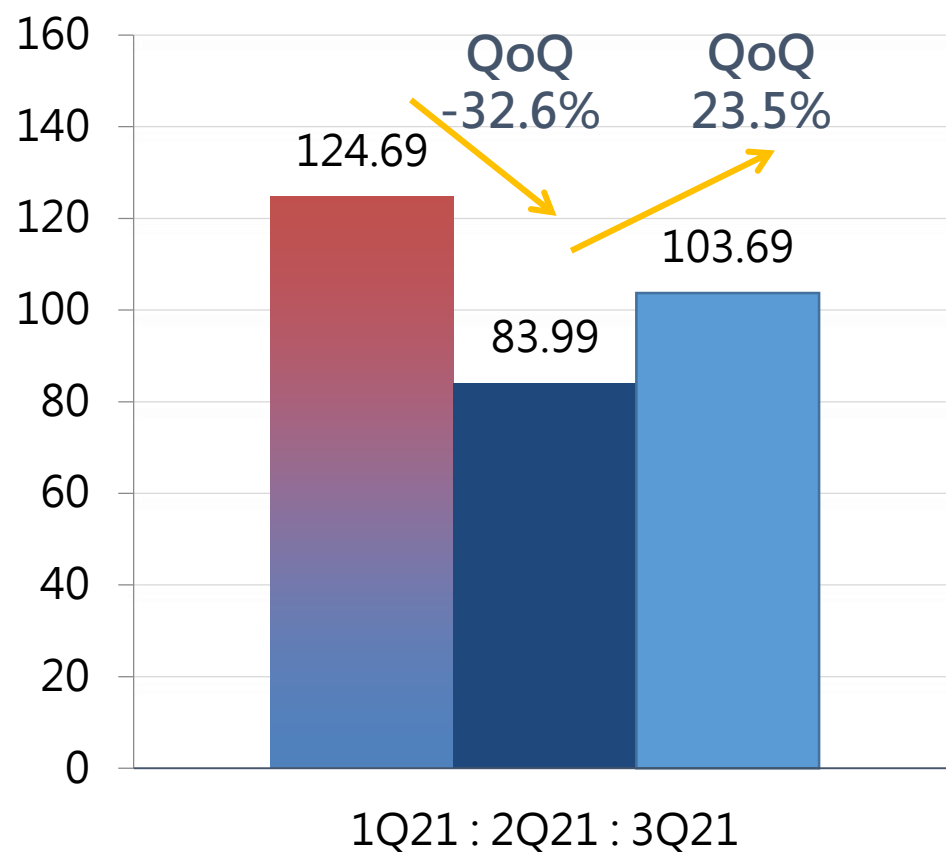


(NT\$ million)



Consolidated Operating Income

(NT\$ million)



Balance Sheets & Key Indices



Selected Items from Balance Sheets (NT\$ million)

	3Q21		2Q21		1Q21		3Q20	
	Amount	%	Amount	%	Amount	%	Amount	%
Cash & Marketable Securities	407.32	7.9%	502.62	9.6%	379.39	7.4%	337.09	6.7%
Accounts Receivable	573.17	11.1%	572.71	10.9%	598.42	11.7%	556.93	11.1%
Inventories	425.00	8.2%	415.68	7.9%	342.55	6.7%	303.76	6.0%
Net PP&E	3,398.77	65.7%	3,392.29	64.5%	3,414.30	66.9%	3,458.86	68.8%
Total Assets	5,169.53	100.0%	5,261.72	100.0%	5,104.15	100.0%	5,025.62	100.0%
Current Liabilities	937.21	18.1%	900.61	17.1%	931.24	18.2%	874.60	17.4%
Long-term Interest-bearing Debts	1,190.29	23.0%	1,204.11	22.9%	1,087.05	21.3%	1,235.12	24.6%
Total Liabilities	2,327.29	45.0%	2,309.61	43.9%	2,228.33	43.7%	2,328.78	46.3%
Total Shareholders' Equity	2,842.24	55.0%	2,952.11	56.1%	2,875.82	56.3%	2,696.84	53.7%
Key Indices								
Inventory Turnover Days	82.40		85.25		80.24		94.66	
Current Ratio (x)	1.61		1.77		1.52		1.47	
Asset Productivity (x)	0.72		0.70		0.70		0.56	

*Diluted weighted average outstanding shares were 131 million units in 3Q21.

**Asset Productivity = Annualized net revenue/Average net PP&E

Product Development Direction

雙十展翼、再創新局 (第二講)

A. 兩支硬翅膀的 布局

a. 第一支翅膀: Fluomide® for 5G

b. 第二支翅膀: OPI® for Foldable AMOLED

B. VCP 的發展 策略

達邁新格局: Not only PI film Manufacturer , but also a Value Chain Provider (VCP)

從近期最夯的話題談起

虛實整合的元宇宙(Mataverse)



微軟執行長 納德拉：

元宇宙的概念是，在真實世界中嵌入運算、
在運算中嵌入真實世界。



資料來源:商周第1773期





■佐伯格與奧運金牌以虛擬實境比擊劍，但元宇宙能否解決一般人的痛點？恐怕才是它能否普及的關鍵。



■不認識雅虎台灣虛擬偶像家族中的虎妮（左）、杏仁咪嚕（右），你會被小學生嘲笑落伍喔！

資料來源:商周第1773期

臉書、微軟爭元宇宙王座 台灣內容、硬體機會大



平台、遊戲與應用

- 國際大咖：臉書、微軟、PTC、Epic、Roblox、Niantic、STEAM
- 台灣公司：宏達電、Xrspace、雅虎台灣、遊戲橘子、南瓜、瓊檬、科碼新、狂點、必揚、宇萌、OURSONG



AI與底層技術

- 國際大咖：輝達、Adobe、Autodesk、Unity
- 台灣公司：訊連、光禾感知、兎鍊、iStaging、Blocto



整理：蔡顯萱

使用者終端



- 國際大咖：臉書、蘋果、索尼、微軟
- 台灣公司：宏達電、Xrspace、佐鍾



零組件與組裝



- 國際大咖：輝達、英特爾、AMD
- 台灣公司：聯發科、奇景、台積電、聯電、鴻海、和碩、廣達



資料來源：商周第1773期



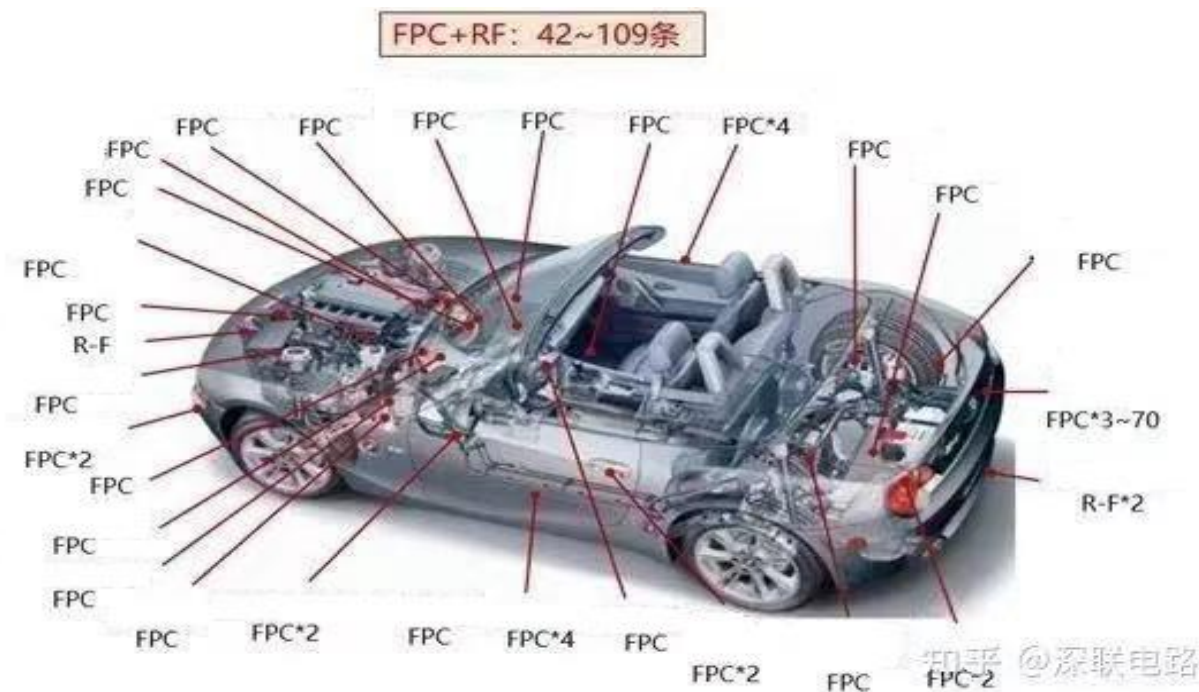
蘋果執行長 庫克：

“我寧願離流行語遠一點、稱它為AR，**我對此非常興奮、樂觀，**
預料這將能為人們省下時間，從事更多有意義的活動。”

資料來源:以上取材自商業週刊 1773 期，p80~84

近期產業最夯的話題之二

汽車變革的進行式：輔助駕駛、自動駕駛、油電車、電動車、燃料電池車....



資料來源: Google

序號⑤~⑧：執行「決策與控制」程序

- ⑤ GPS接收器
辨識車輛於地圖中位置
- ⑥ 電腦資料運算平台
透過感應器蒐集資訊
決定車輛行進動線
- ⑦ 定位感測器
監控車輛是否偏移
GPS地圖中位置
- ⑧ 電子線控
(X-by-wire)

序號①~④：執行「感測」程序

- ① 光達
360度旋轉，掃描周遭
200公尺環境並繪成3D
- ② 慣性動作感測器
因應GPS訊號微弱時，
提供航位推算功能
- ③ 攝影機
負責判讀交通號誌，
並偵測移動障礙物
- ④ 毫米波雷達
判斷車輛遠距離
物體位置與距離

資料來源: 蘇文彥 5G世代軟板高頻材料及微細線路製程簡介

FPC for Automotive

Features

- Total Cost Down
- Integration of PCB and Wiring
- Light Weight
- High Heat Resistance
- Space Saving
- 3D Wiring
- Improve Reliability
- Components Assy



LCD



Daytime Running Light



Gearbox Control Unit



LI-B Management System



Window Connector

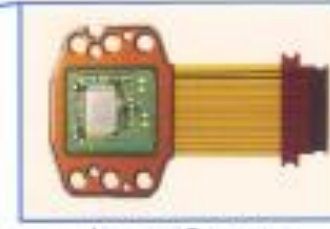


Image Sensor



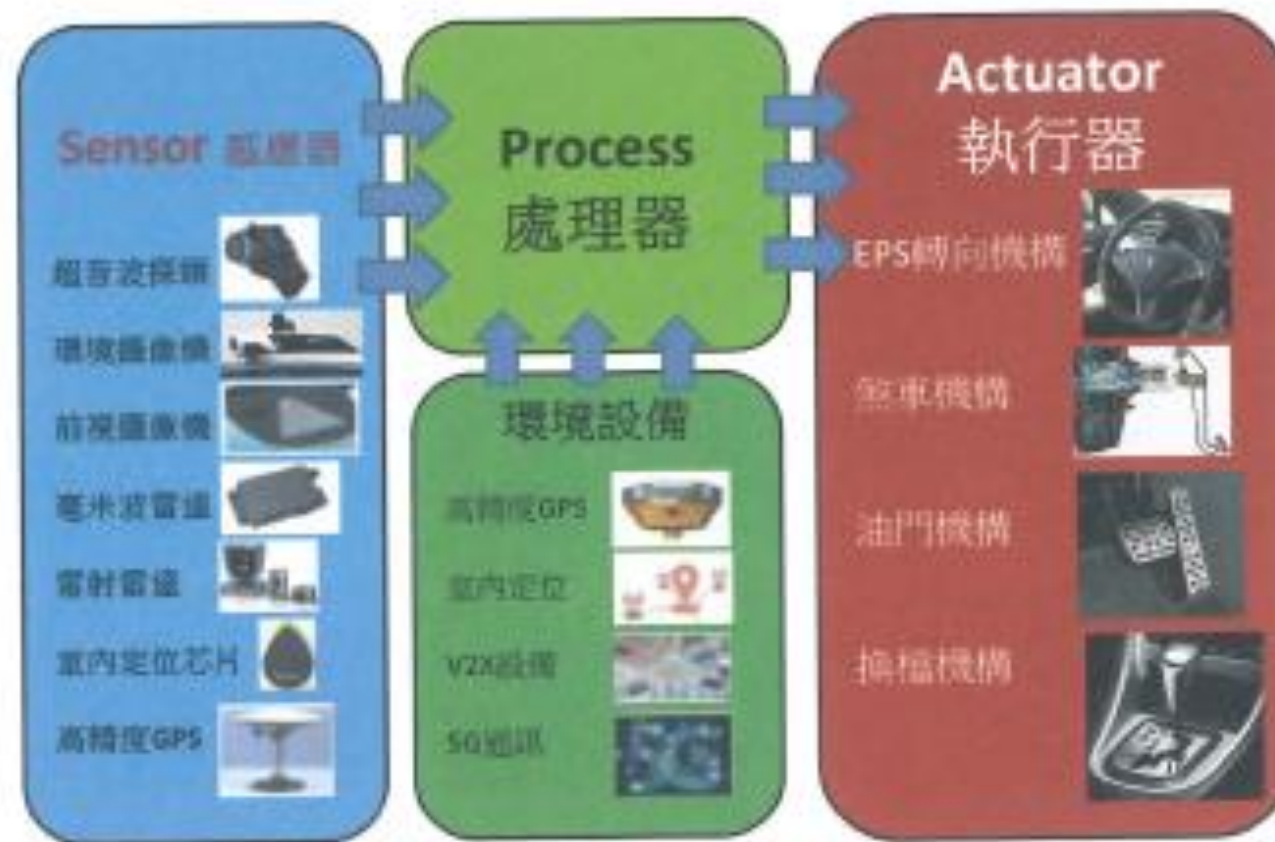
Column Switch



Camera Heater

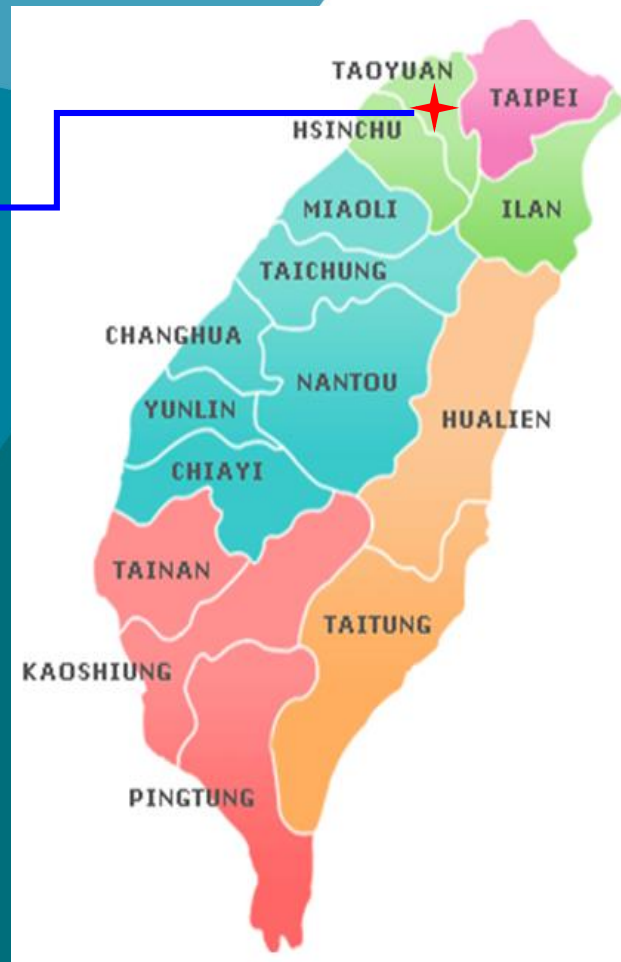
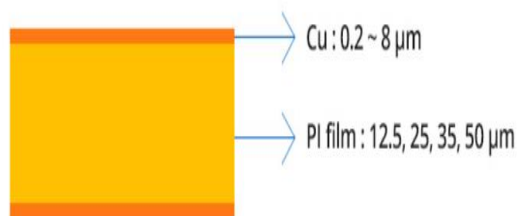


Sensor、Process、Actuator的關係



資料來源:蘇文彥 5G世代軟板高頻材料及微細線路製程簡介

柏彌蘭金屬化研究(PMR)公司簡介



PMR發展歷程

- 成立於：2012.6
- 資本額：2.2億元
- 公司位置：桃園平鎮
- 核心技術：RTR PI濕式金屬化
- 主要產品：軟性超薄銅箔基板、微細線路軟板
- 專利件數：申請45篇，已核准29篇

2016 開發RTR PI pre-drilled技術與設立PI金屬化量產線

2018 開發FOG成為三合一方案

2019 王牌公司(客戶代號)成為首家採用PMR三合一方案
開發AR眼鏡

2020 國際醫療大廠評估採用，建立FOG製程產線





PI 薄膜 (*POMIRAN®*)



RTR 雷射預鑽孔
(*Laser pre-drill*)



RTR 化學鍍鎳
(*Metal-seed plating*)



RTR 電解電鍍銅
(*Conductor plating*)



RTS FPC製作
(*RTS MSAP FPC
Processing*)



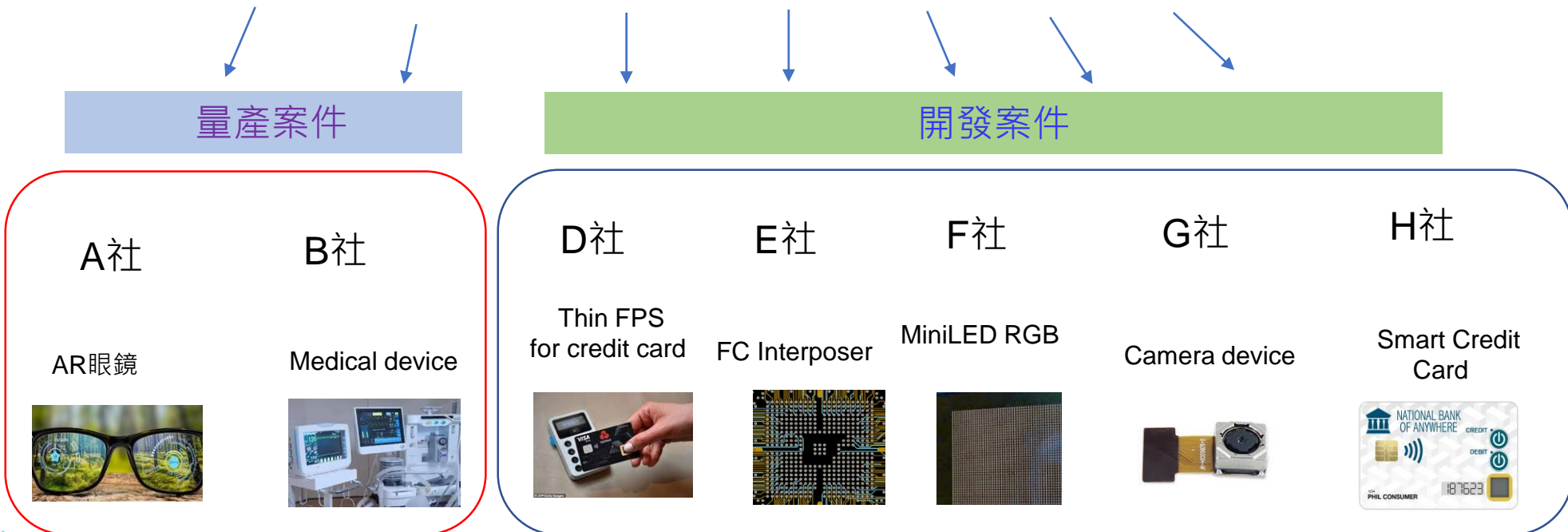
協力廠商

PMR三合一方案

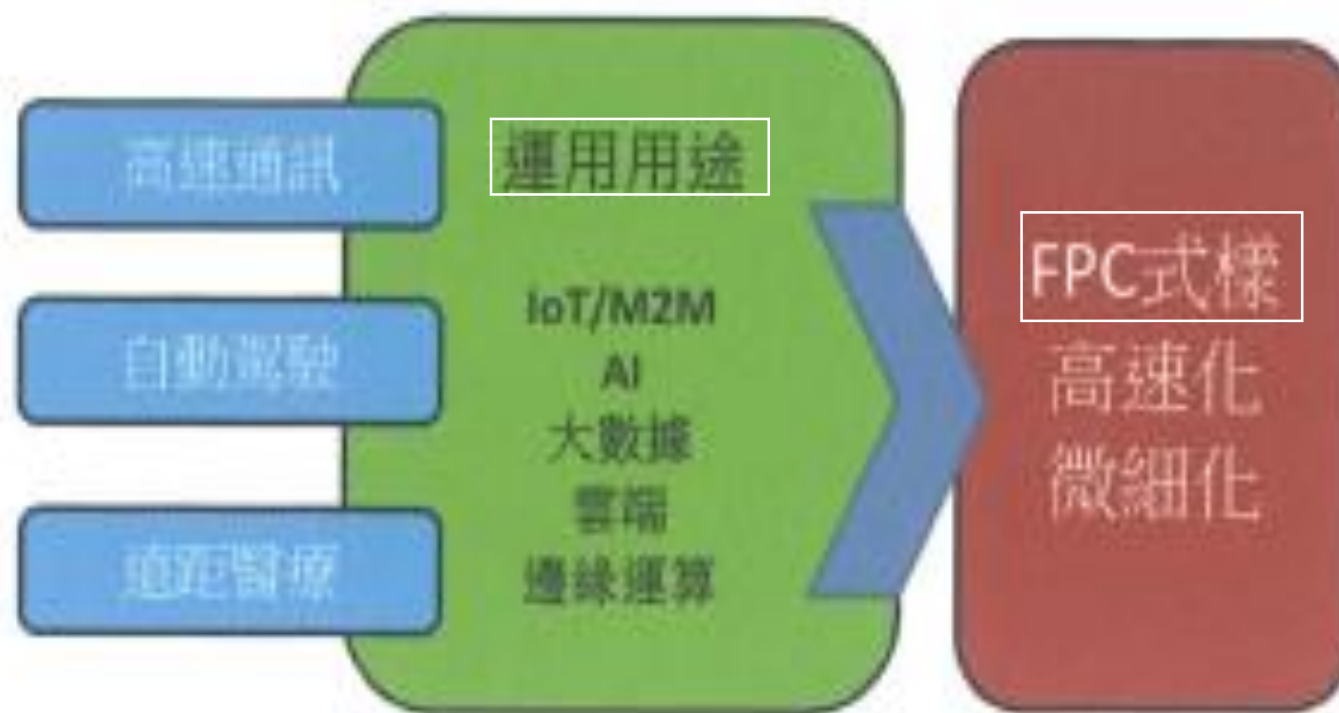
1. PI Pre-drill & Metallize (預鑽孔金屬化材料) -- TMT/ PMR

2. Fine line Circuit FPC (MSAP線路加工) -- 協力廠商

3. FPC on Carrier with PI Deboned Film (FOG製程材料) – TMT/PMR



未來FPC的發展趨勢



資料來源:蘇文彥 5G世代軟板高頻材料及微細線路製程簡介

達邁現在、未來的角色

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a. 第一支翅膀: Fluomide® for 5G

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Q&A

THE END