



達邁科技

Taiwan Polyimide

We know Polyimide

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Company Profile

Operating Result 2019 Q1-Q3

Product Development Direction

Q & A



Polyimide Film
Manufacturer

- **Established: June, 2000**
- **Company capital: 40M USD**
- **Plant sites: Hsinpu & Tongluo**
- **Employees: ~400**
- **IPO in TSE: October, 2011**





Company Profile

Operating Result 2019 Q1-Q3

Product Development Direction

Q & A

Statements of Comprehensive Income

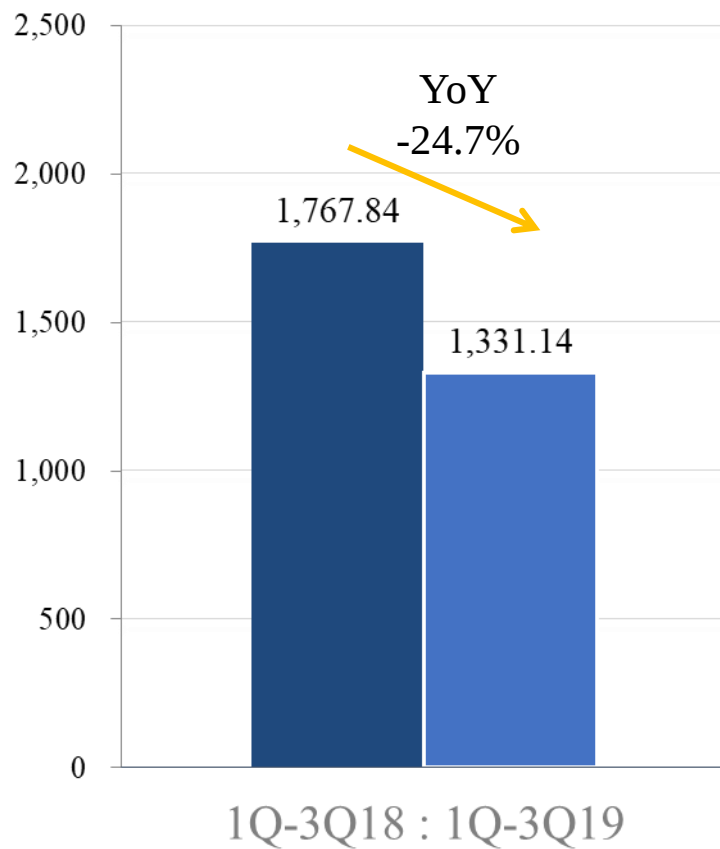
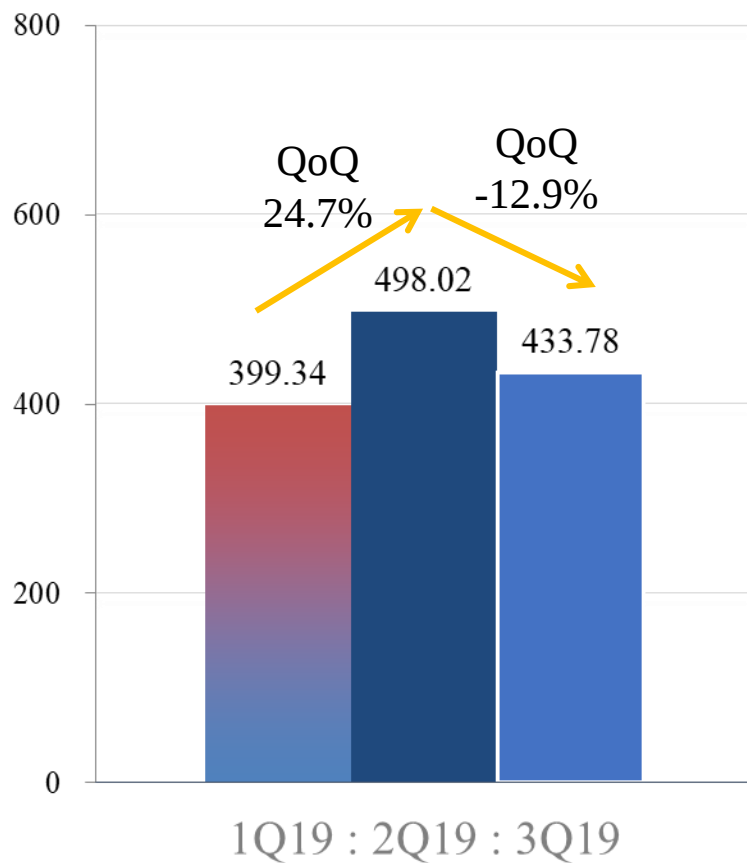
Selected Items from Statements of Comprehensive Income

(NT\$ million)	3Q19	21Q19	1Q19	3Q18	3Q19 over 3Q18	3Q19 over 3Q18
Net Revenue	433.78	498.02	399.34	620.07	-12.9%	-30.0%
Gross Margin	29.1%	28.1%	25.7%	39.7%	1ppt	-10.6ppts
Operating Expenses	83.37	76.89	74.70	81.63	8.4%	2.1%
Operating Margin	9.8%	12.6%	7.0%	26.5%	-2.8ppts	-16.7ppts
Non-Operating Items	(3.84)	(1.09)	(0.91)	3.36	252.3%	-214.3%
Net Income to Shareholders of the Parent Company	31.24	49.59	16.62	133.48	-37.0%	-76.6%
Net Profit Margin	6.4%	9.2%	3.2%	21.0%	-2.8ppts	-14.6ppts
EPS(NT Dollar)	0.24	0.38	0.13	1.03	-36.8%	-76.7%

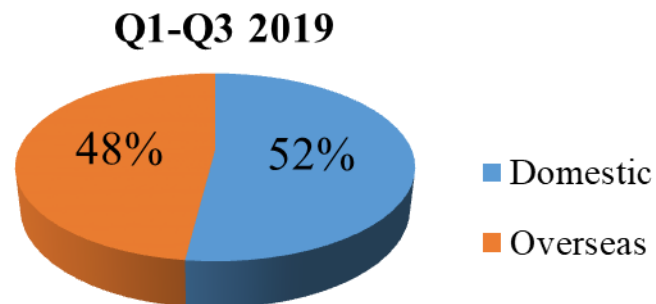
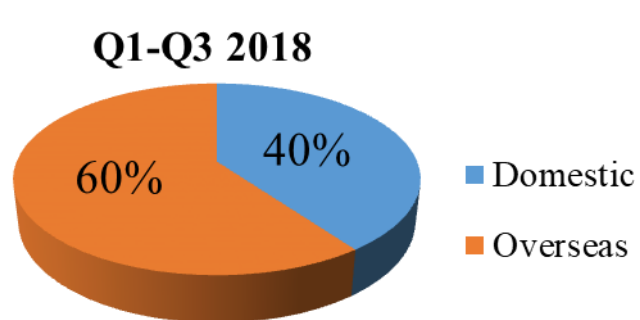
*Diluted weighted average outstanding shares were 129million units in 3Q19.

Consolidated Revenue

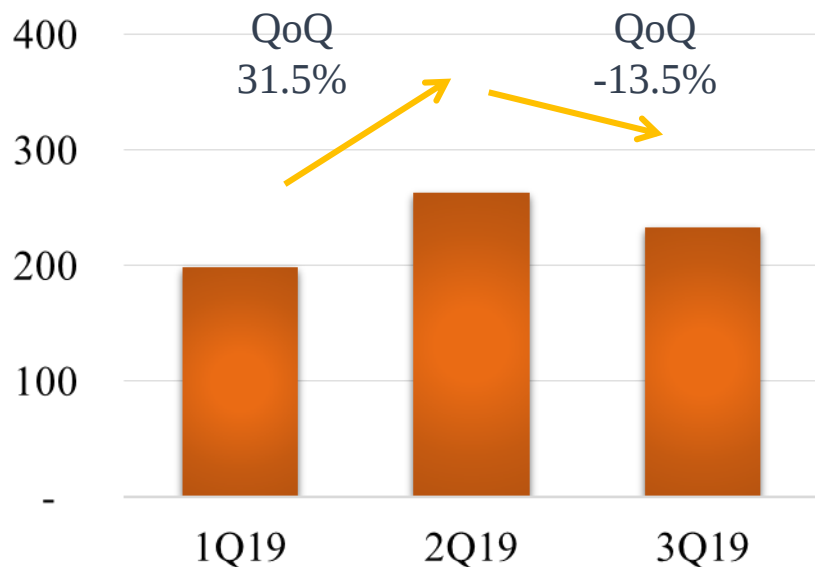
(NT\$ million)



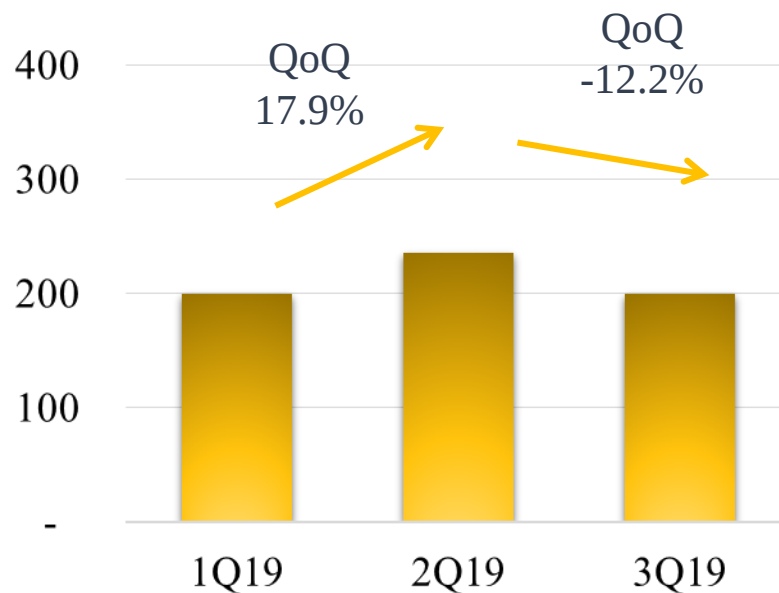
Regional Sales



Domestic

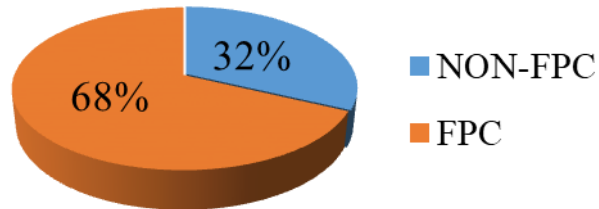


Overseas

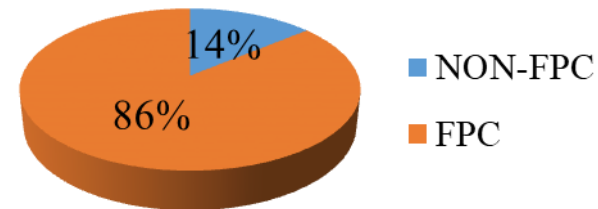


Application Analysis

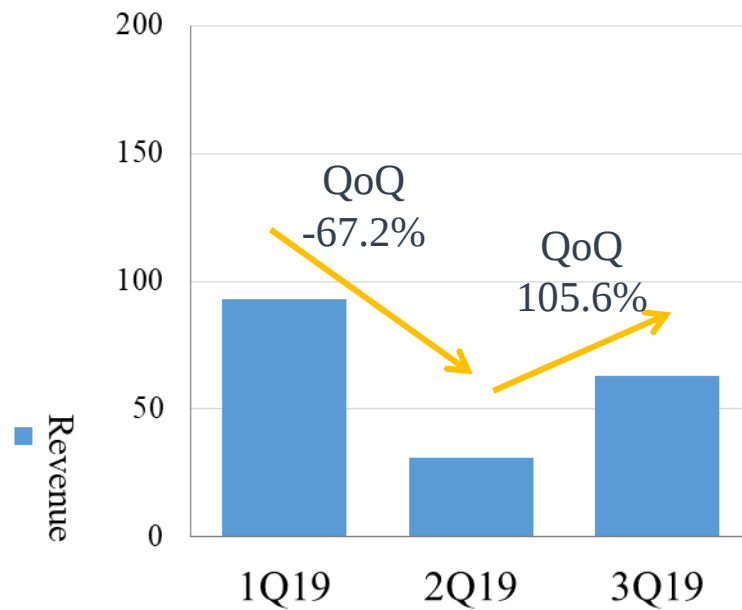
Q1-Q3 2018



Q1-Q3 2019



NON-FPC

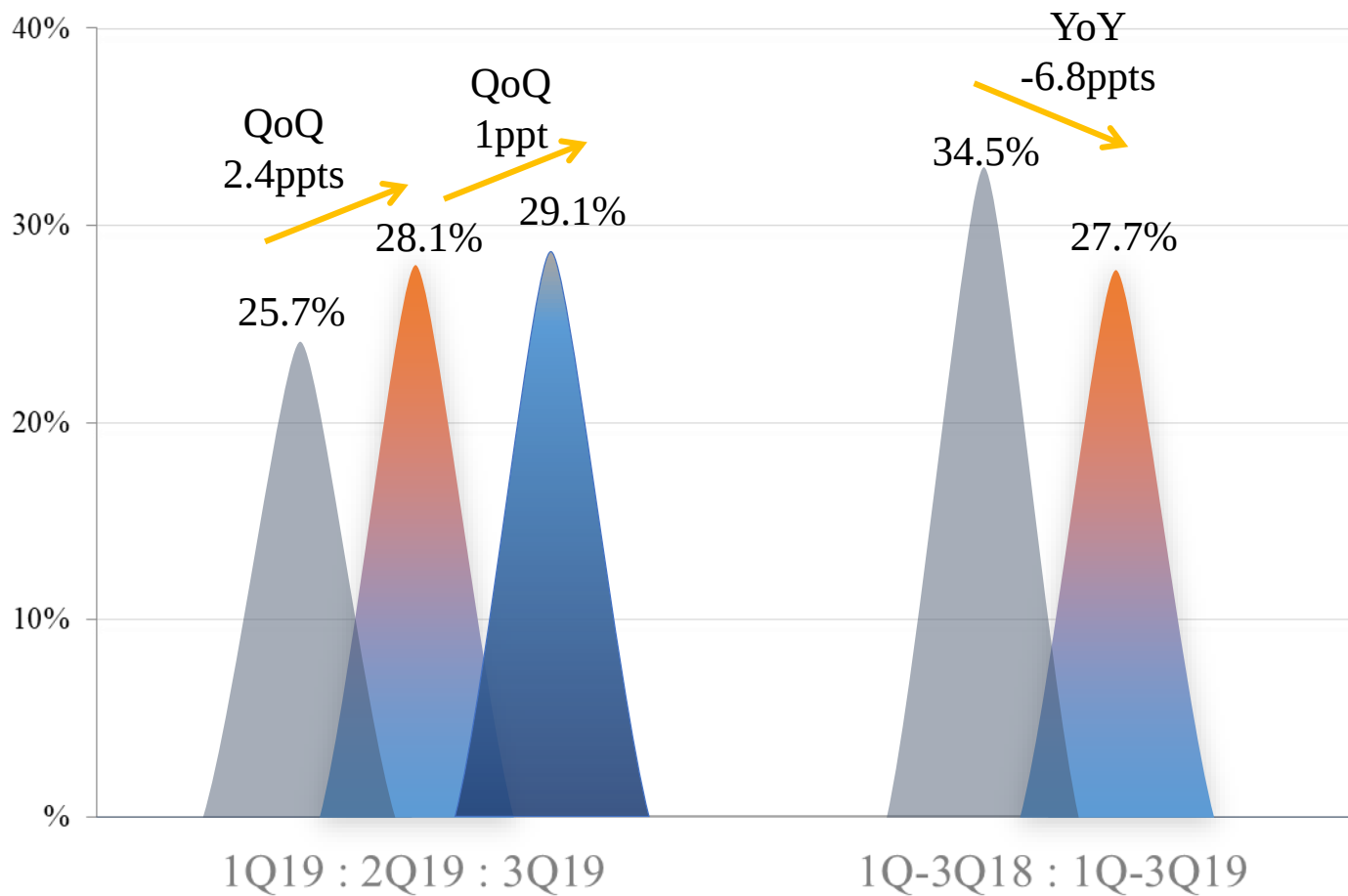


FPC

(NT\$ million)

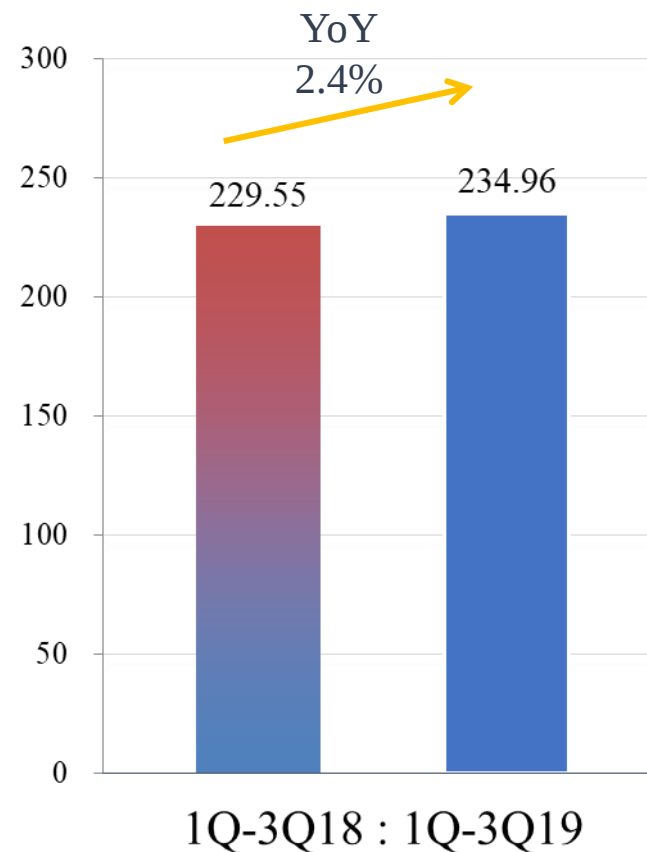
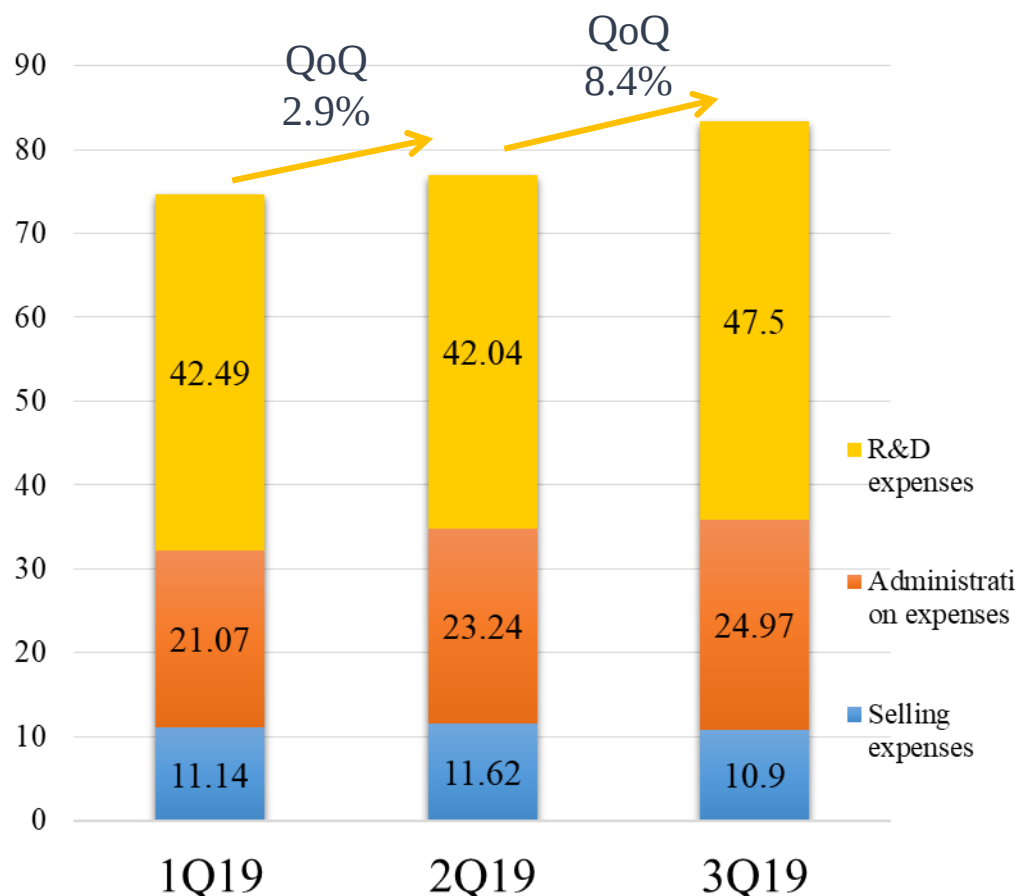


Consolidated Gross Margin



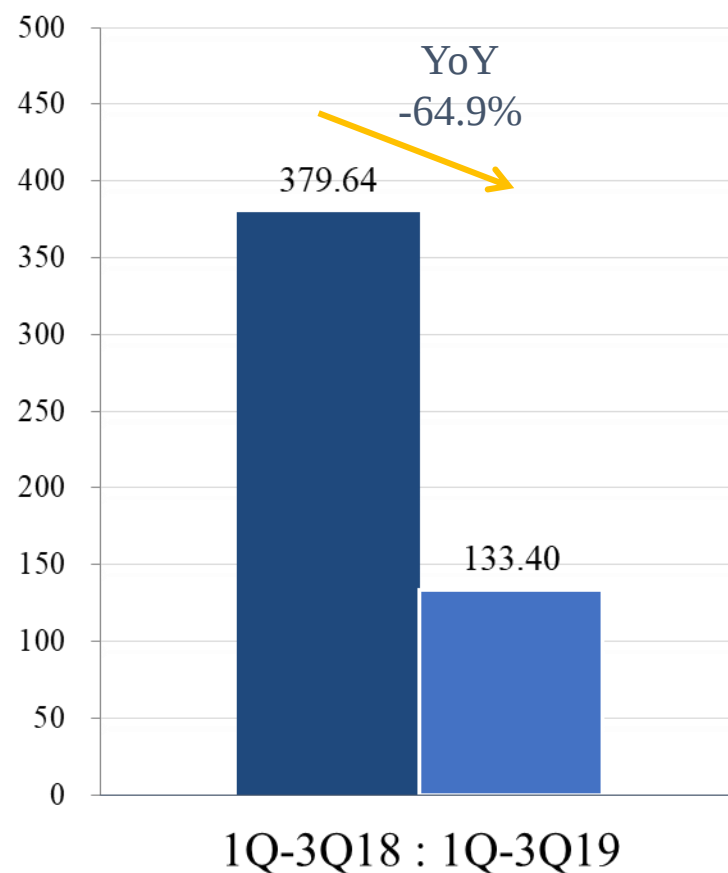
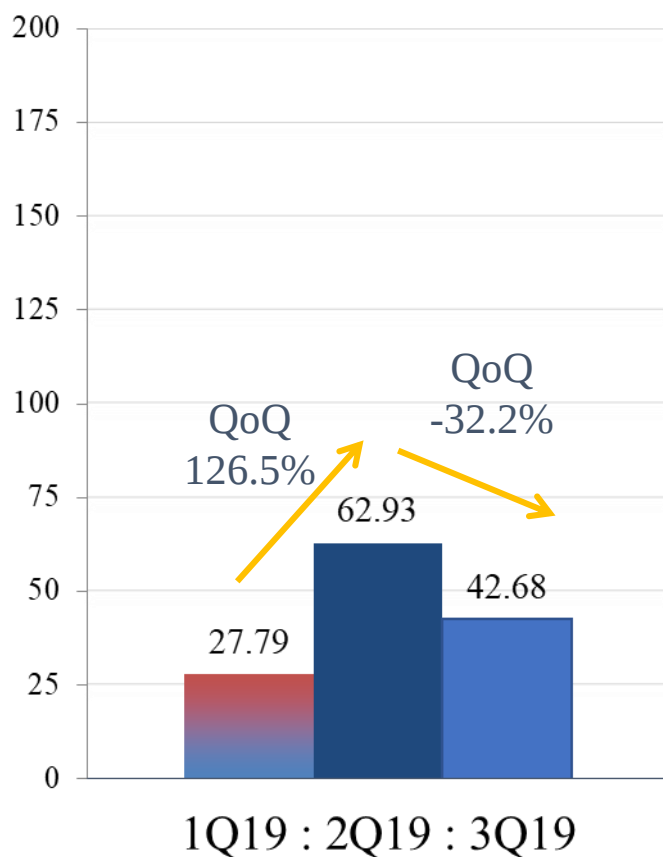
Consolidated Operating Expenses

(NT\$ million)

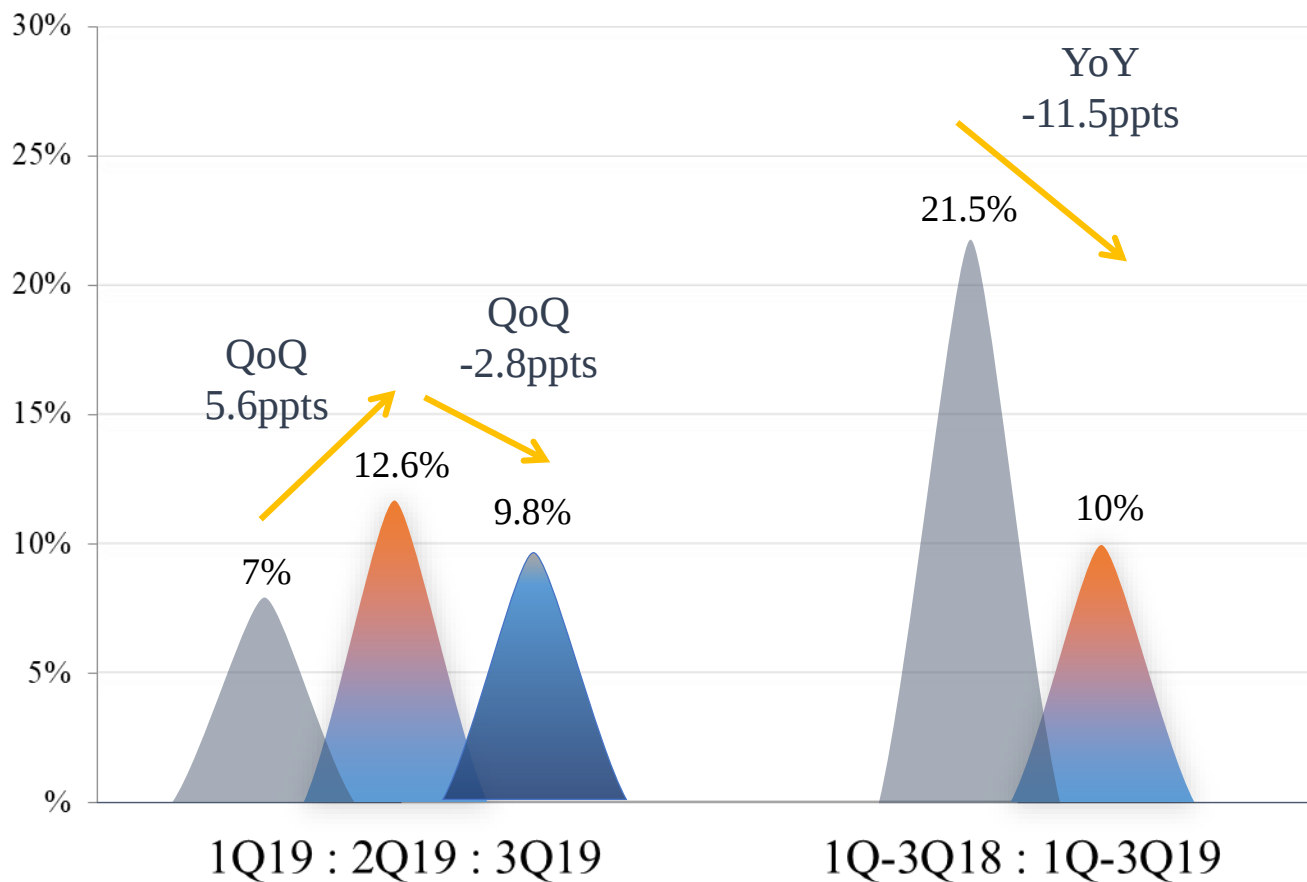


Consolidated Operating Income

(NT\$ million)

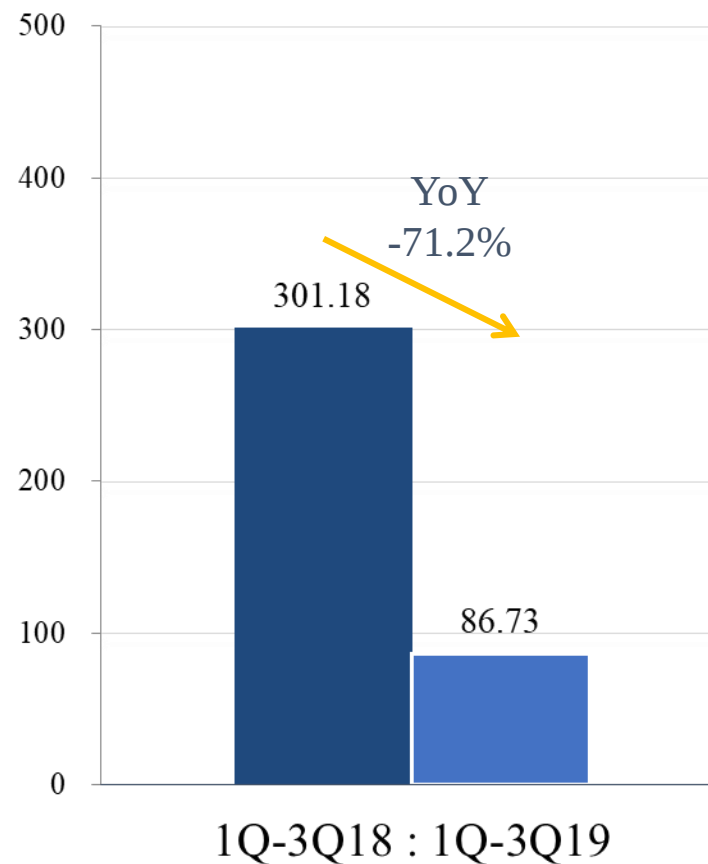
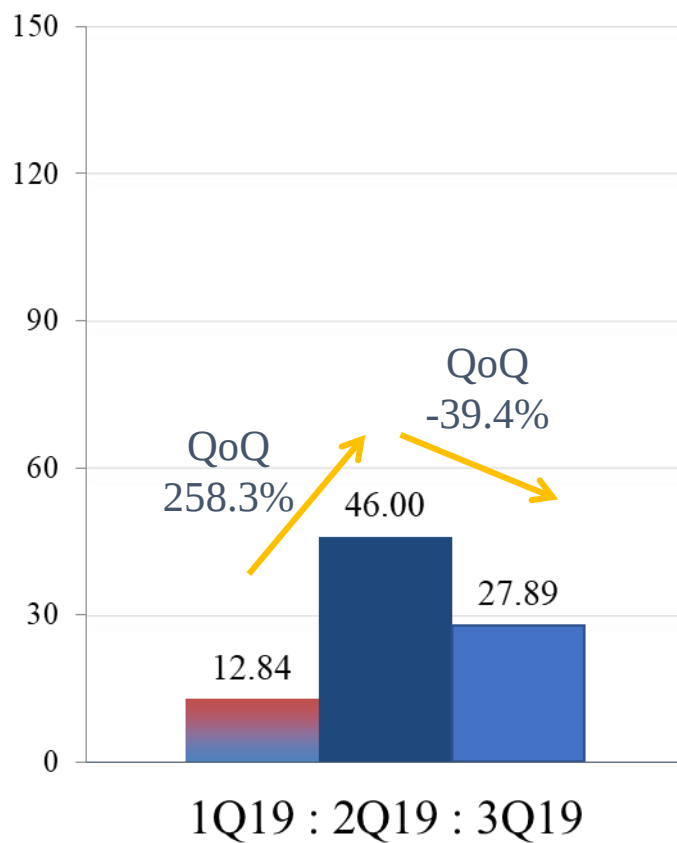


Consolidated Operating Margin

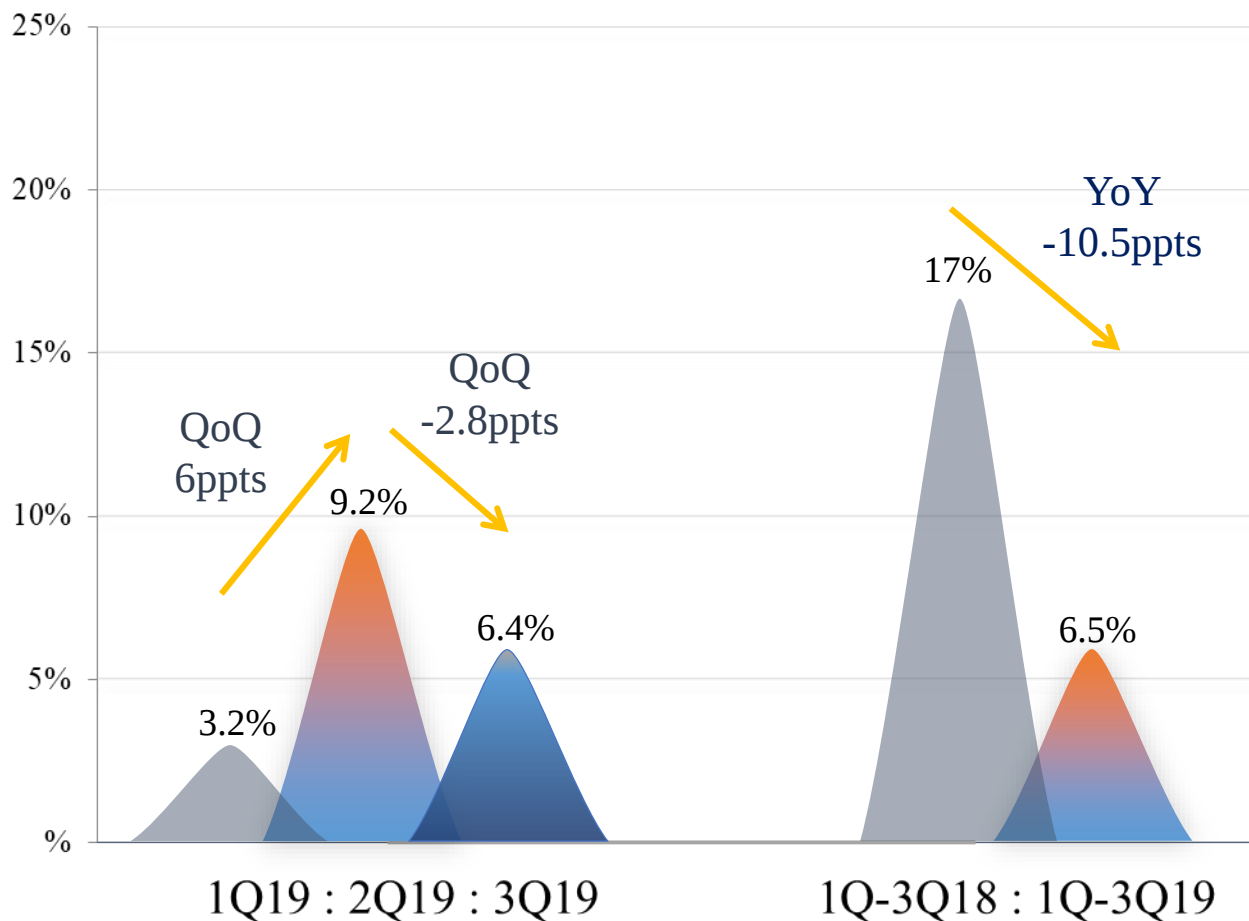


Consolidated Net Income

(NT\$ million)

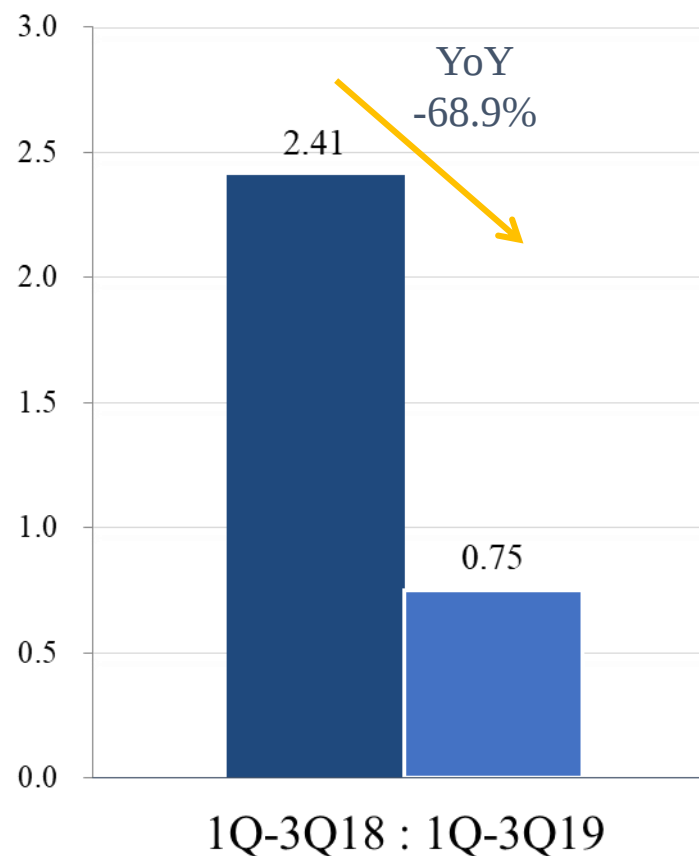
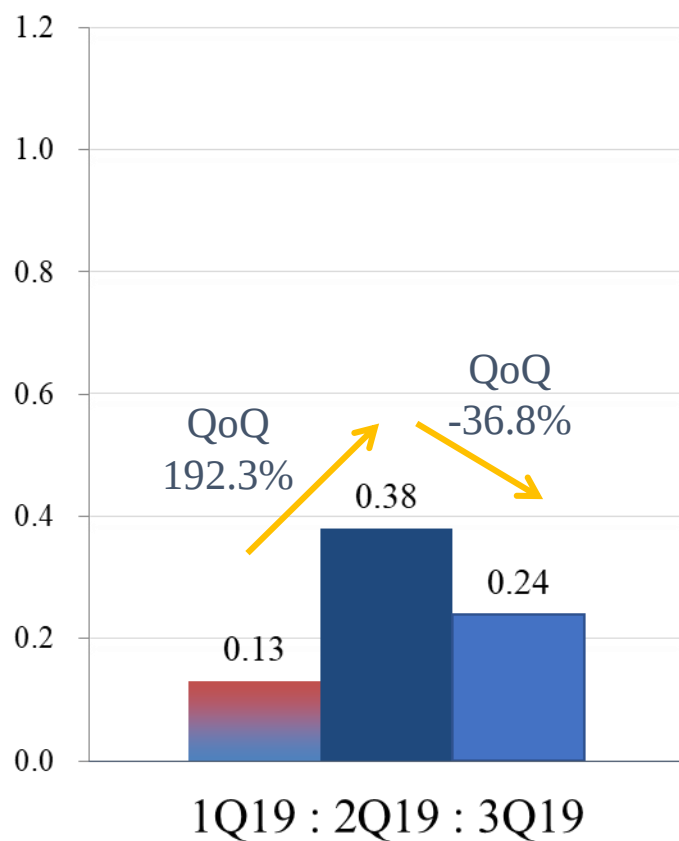


Consolidated Net Profit Margin



Earnings Per Share

(NT\$)



Balance Sheets & Key Indices

Selected Items from Balance Sheets (NT\$ million)	3Q19		2Q19		1Q19		3Q18	
	Amount	%	Amount	%	Amount	%	Amount	%
Cash & Marketable Securities	350.63	7.4%	358.27	7.6%	352.79	7.8%	421.41	11.3%
Accounts Receivable	386.89	8.1%	436.77	9.2%	335.19	7.4%	514.71	13.8%
Inventories	436.35	9.2%	450.50	9.5%	543.67	12.0%	410.84	11.1%
Net PP&E	3,189.39	66.9%	3,073.97	65.1%	2,867.74	63.4%	2,186.65	58.8%
Total Assets	4,767.01	100.0%	4,721.89	100.0%	4,520.40	100.0%	3,717.39	100.0%
Current Liabilities	1,177.42	24.7%	1,174.03	24.9%	919.80	20.3%	862.14	23.2%
Long-term Interest-bearing Debts	948.27	19.9%	942.56	20.0%	855.65	18.9%	437.97	11.8%
Total Liabilities	2,348.38	49.3%	2,343.77	49.6%	2,007.24	44.4%	1,303.91	35.1%
Total Shareholders' Equity	2,418.63	50.7%	2,378.12	50.4%	2,513.16	55.6%	2,413.48	64.9%
Key Indices								
Inventory Turnover Days	135.31		137.32		150.57		91.51	
Current Ratio (x)	1.08		1.14		1.44		1.63	
Asset Productivity (x)	0.61		0.63		0.65		1.08	

*Total outstanding shares were 129 million units at 9/30/19

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

Company Profile

Operating Result 2019 Q1-Q3

Product Development Direction

Q & A

TMT

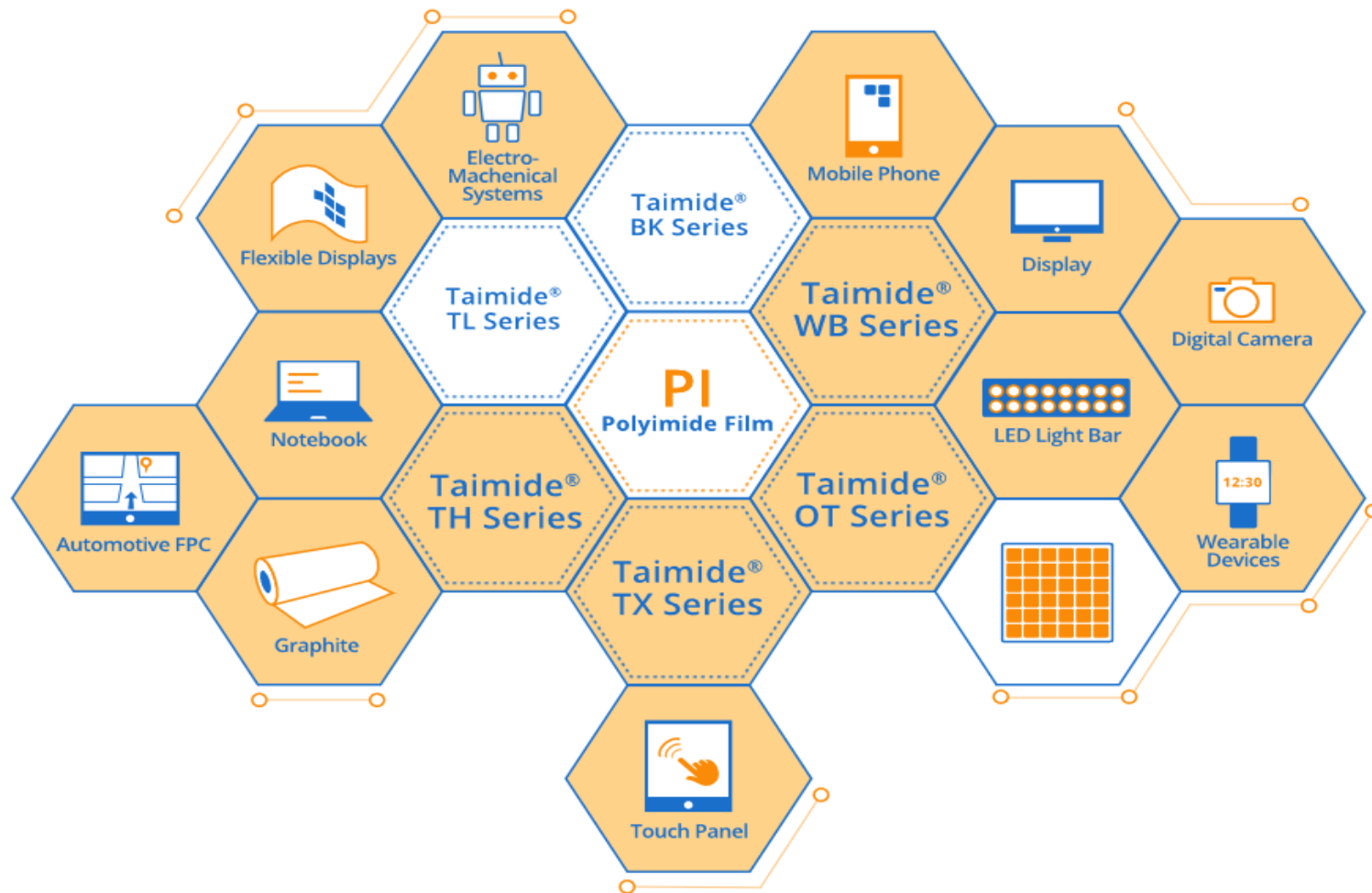


利用多色重疊與透明感展現PI薄膜的彈性、延展性，使用兩個「T」像兩個人一樣牽在一起形成了「M」，讓「M」呈現更穩固，在科技產業中也能帶著柔軟且細膩之感。

策略思維的精進：

從 PI film 的生產者 到 價值鏈的提供者







銅鑼二期建設 竣工典禮

觸 · 顯 · 未_來 · 一瞬間



■ 電磁波的基本特性

Created by 大和有話說

波長

電磁波的波峰到波峰的距離。
通常以毫米(mm)、微米(μm)或是奈米(nm)為單位

$$C = \lambda \cdot V$$

光速 **頻率**

光速固定為 $C = 3 \times 10^8$ 公尺/秒 磁波每一秒震動的次數，
以「赫茲(Hz)」作為單位



因光速固定為 $C = 3 \times 10^8$ 公尺/秒，故「波長」與「頻率」成反比。

■ 無線通訊之高、低頻訊號比較

資料來源：MIC (2009)

Created by 大和有話說

	高頻訊號	低頻訊號
波長	短	長
方向性	定向	無方向性
繞射能力	弱	強
穿透能力	強	弱
電波衰減	大	小
覆蓋能力	弱	強
基地台承載量	多	少
功率傳送增益比	小	大
終端天線	短	長

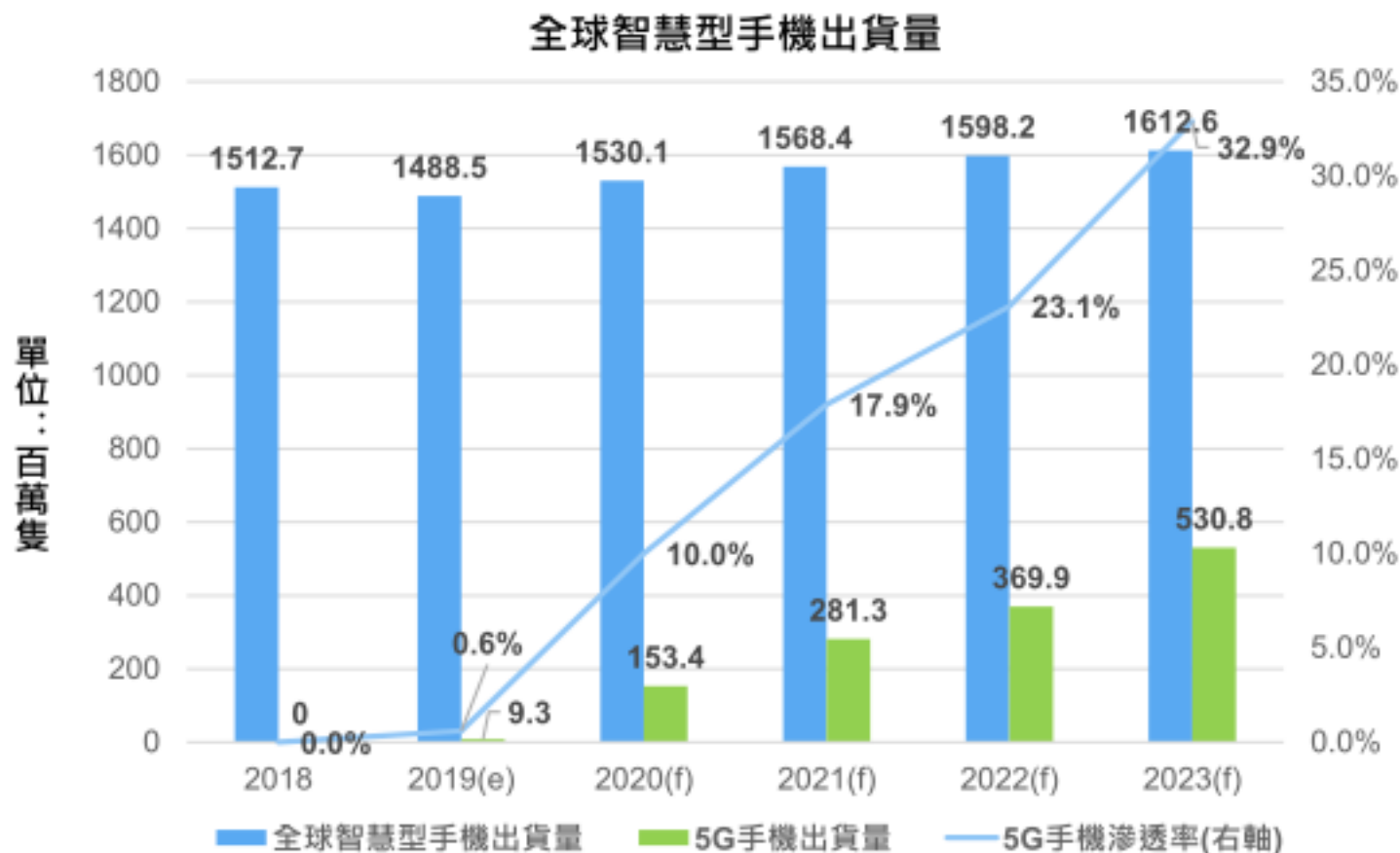
通訊電磁波頻譜

Created by 大和有話說





- 2019年全球智慧型手機出貨量約14.8億隻，其中5G智慧型手機出貨量僅約930萬隻左右，僅占整體出貨量之0.6%。
- 5G智慧型手機仍是未來智慧型手機的成長及換機動力，預估2023年5G智慧型手機出貨量達到5億隻，占整體智慧型手機出貨量之32.9%。



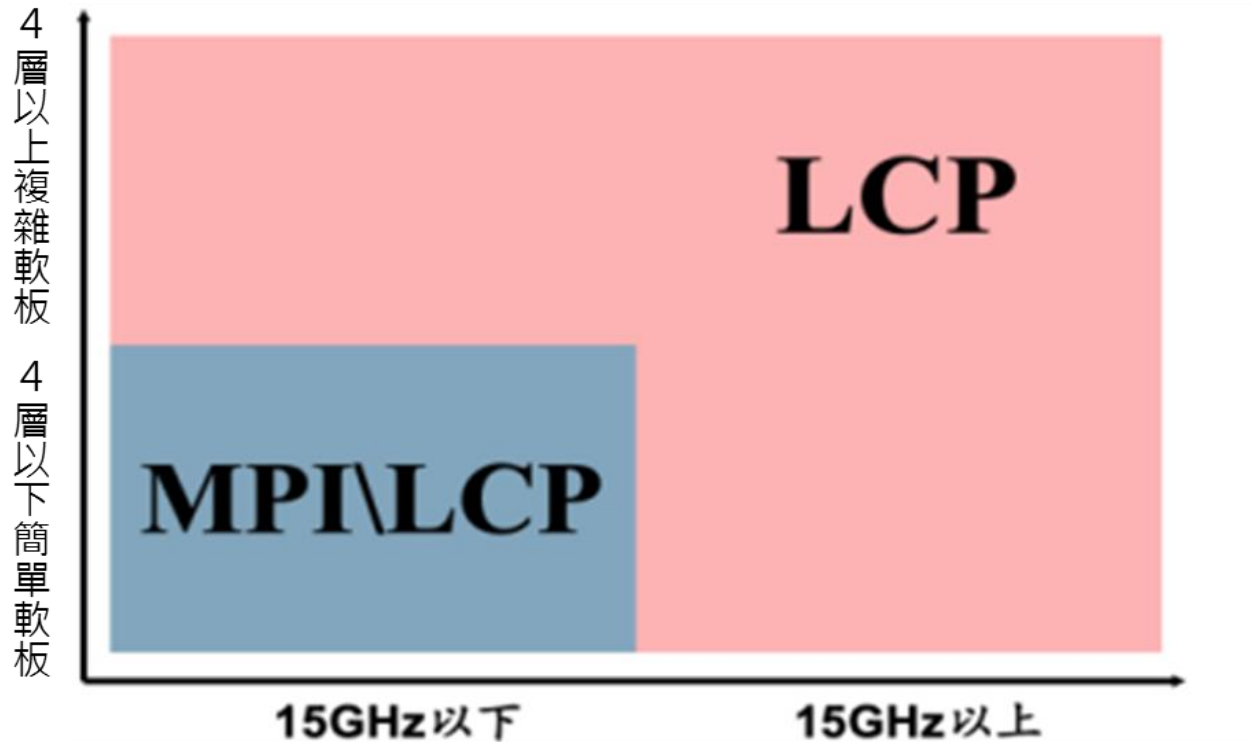
- iPhone X共使用21片軟板，較iPhone 7Plus的16片增加5片，而高頻板也增加至3片
- 未來包括TrueDepth Camera、OLED Display、Antenna(LAT)、Dock 都可能轉為高頻軟板

iPhone X使用軟板狀況

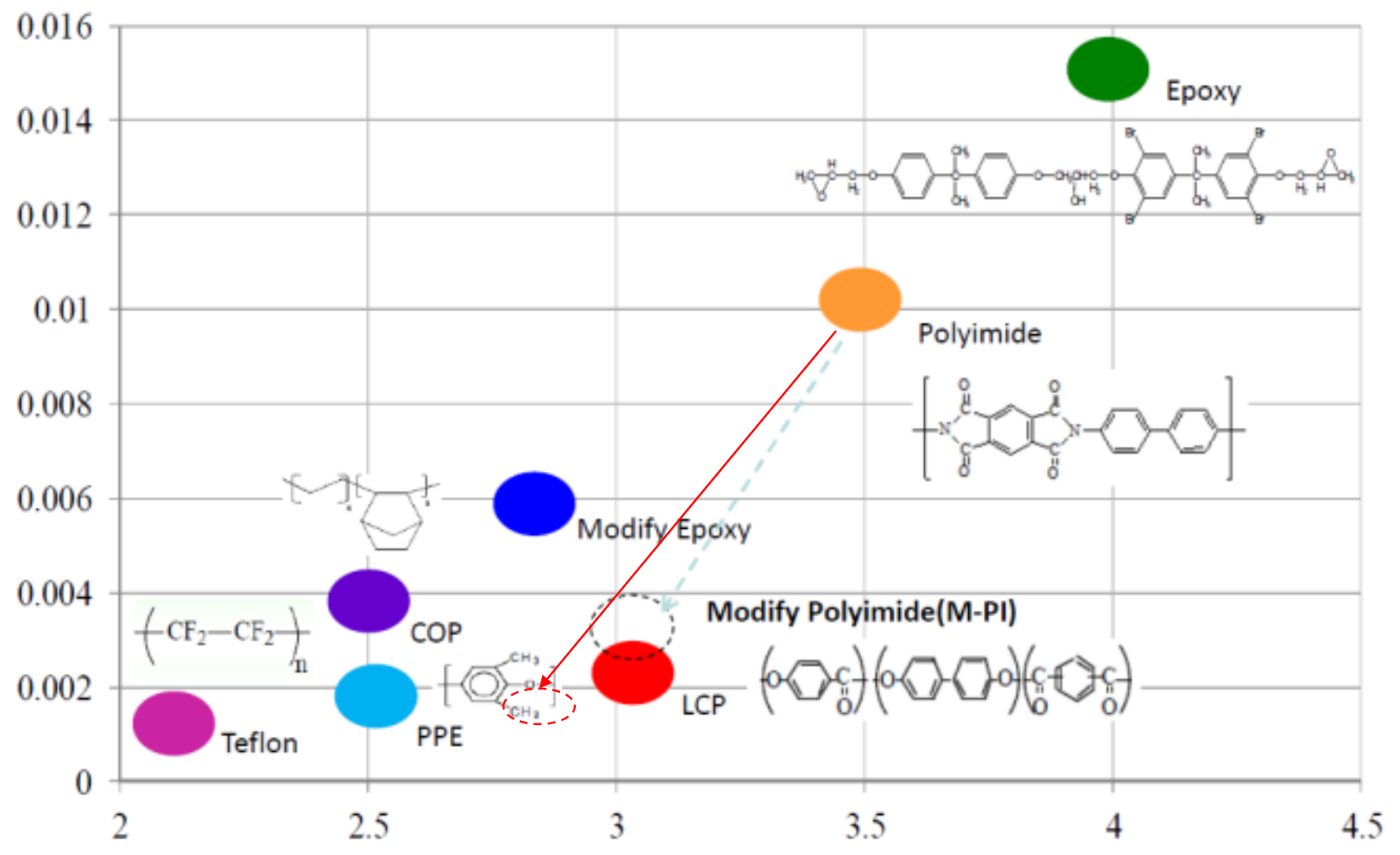


MPI是5G Sub-6GHz過度技術，無法完全替代LCP

Sub-6GHz，LCP/MPI有望共存：對於15GHz以上或4層以上複雜軟板，LCP是較優選擇

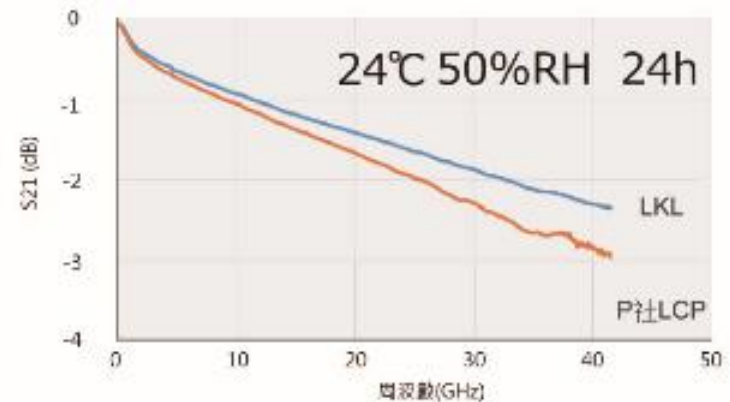
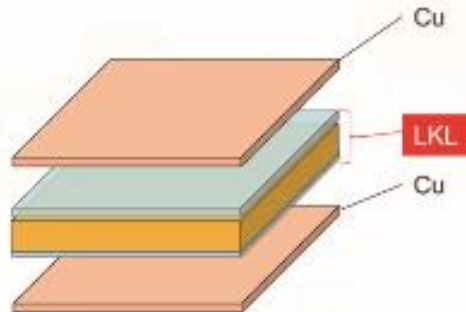


**達邁推的LKL 鎖定的應用標的 就是28GHz以上5G應用
從電氣特性 / 價格 / 量產性 / 後續加工性 要完全能匹配**



LKL — High Speed FPCB

Structure for Laminated Double-Side FCCL
Laminated Double-Side FCCL 向け構造



Features

- PI Thickness 7.5 ~ 75um
- D_k 2.8 & D_f 0.002 @ 10Ghz
- Low Moisture

Applications

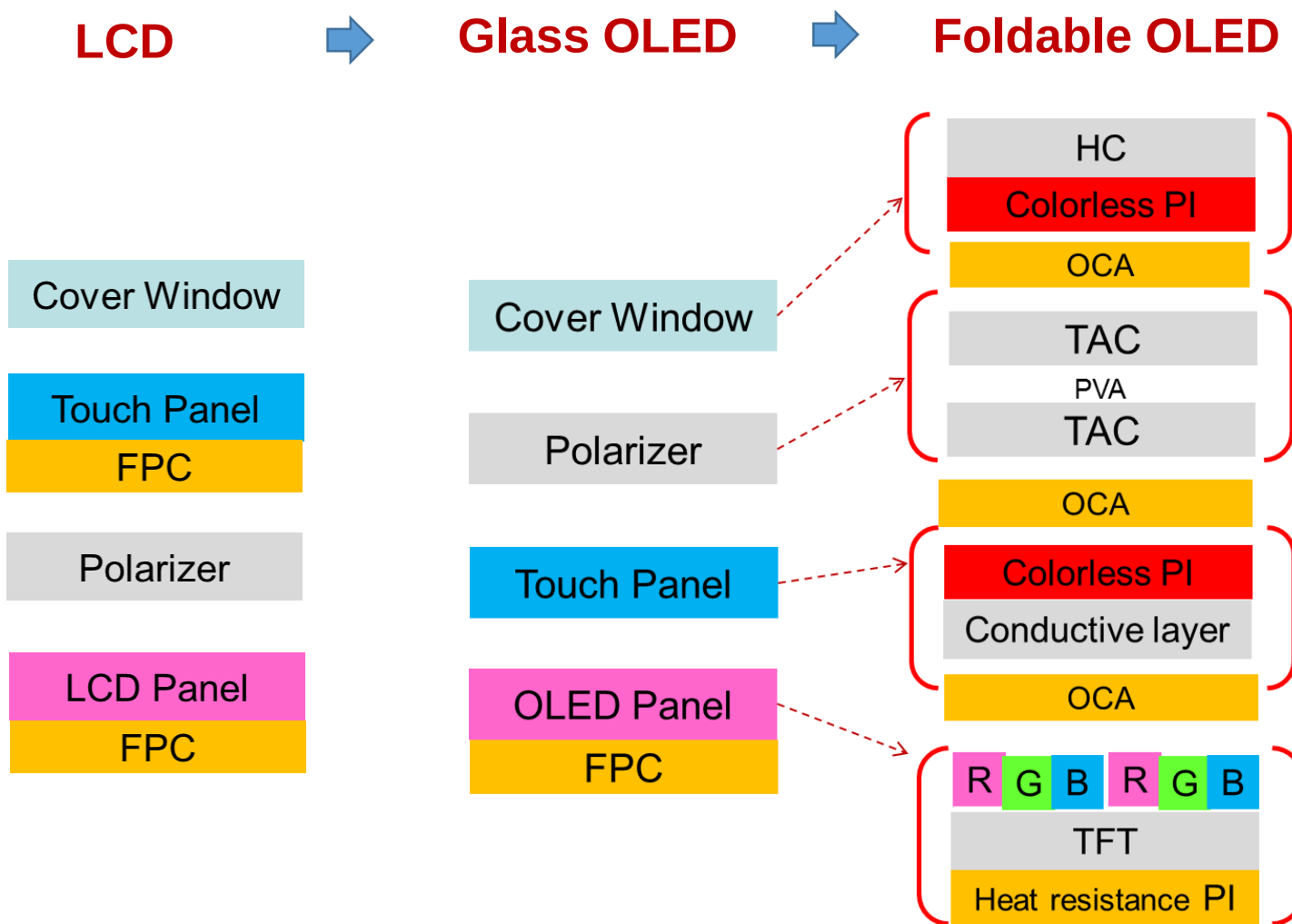


High Speed
Transmission FPCB

Technical Information 技術情報

	LKL		Unit	Test method
Thickness	45	65	μm	
Modulus	480	320	kgf/mm ²	ASTM D882
CTE (100°C~200°C)	10	22	ppm/°C	ASTM D696
Dk (10GHz)	2.9	2.8	-	SPDR 10Ghz
Df (10GHz)	0.002	0.0015	-	SPDR 10Ghz
Dk (10GHz)*	3	2.9	-	SPDR 10Ghz
Df (10GHz)*	0.006	0.005	-	SPDR 10Ghz
Water Absorption*	<1.0%	<1.0%	%	ASTM D570
Peel strength**	>0.9	>0.9	kgf/cm	IPC-TM-650 2.4.9

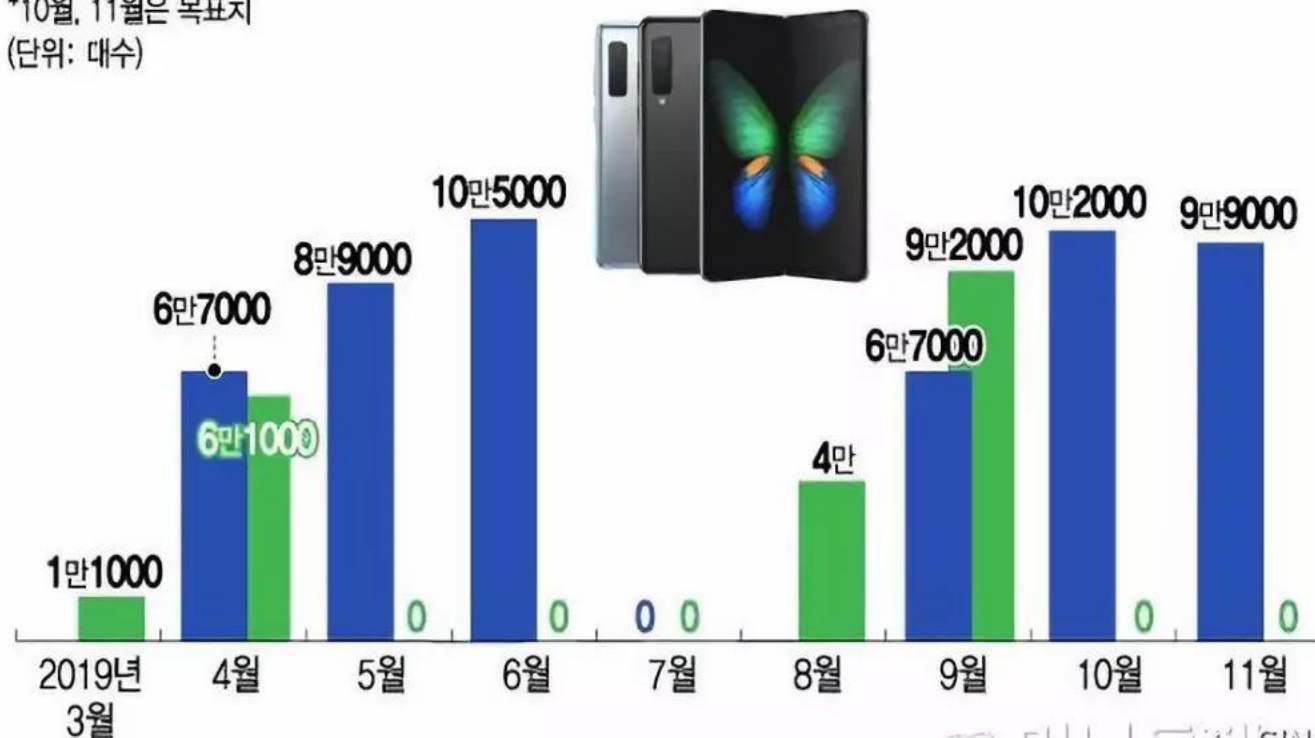
These data are not guaranteed values but the typical measurement values at our company.



삼성디스플레이 폴더블 OLED 생산 현황 및 계획

■ 목표치 ■ 실제 생산량

*10월, 11월은 목표치
(단위: 대수)



그래픽: 김지영 디자인기자

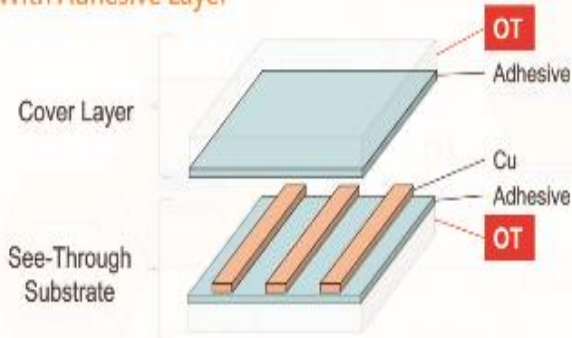
MT 더니루에 CINNO

圖：SDC折疊OLED投產現況與計畫(藍色為目標值，綠色為實際。單位：台)
2019. 10. 16 Cinno Report

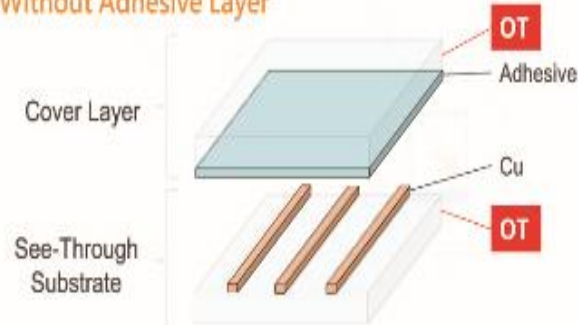
OT – FPC & Lighting

Structure for FPC FPC 構造

With Adhesive Layer



Without Adhesive Layer



Features 特性

- Thickness 13~50 μm
- High Heat Resistant ($\sim 260^{\circ}\text{C}$)
- Lower CTE ($\sim 20\text{ppm}/^{\circ}\text{C}$)
- Good Transmittance ($\sim 85\%$)

Applications 応用



See-Through FPC
(Flexible Print Circuit)



Substrate for Mini-LED &
Micro LED Lighting

Technical Information 技術情報

	OT	Unit	Test method
Thickness	13~50	μm	-
TT	85~87	%	ISO 14782
YI	3~6	-	ASTM E313
Haze	2~3	%	ASTM D1003
CTE	< 20	$\text{ppm}/^{\circ}\text{C}$	ASTM D696
T_g	> 270	$^{\circ}\text{C}$	ASTM E1545
Solvent Resistance	Pass (MEK)	-	3min, 25°C

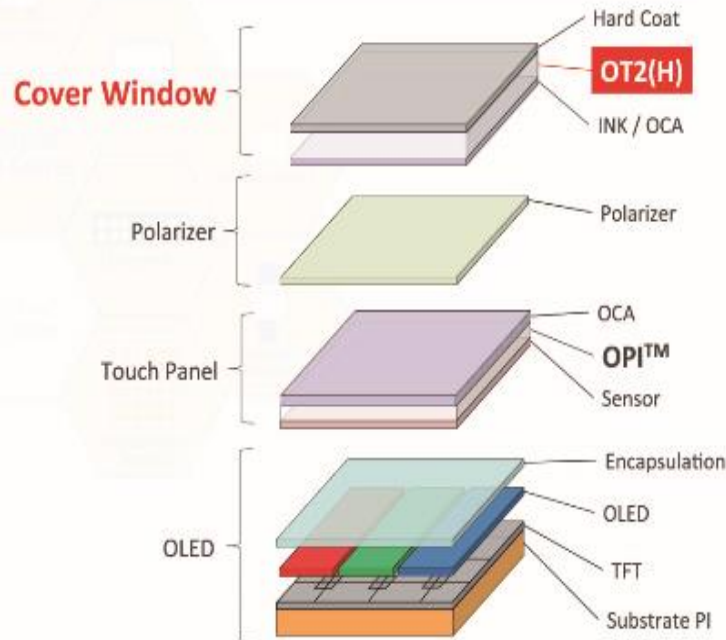
These data are not guaranteed values but the typical measurement values at our company.

OT2(H) – Cover Window Film

Features 特性

- Thickness 25~80 μm
- High Modulus (>6GPa)
- High Transmittance (89%)
- Low Yellowish (YI<2)
- Good Film Surface Uniformity
- High Hardness (2H)

Structure for Foldable AMOLED Foldable AMOLED向け構造



Technical Information 技術情報

	OT2(H)	OT2	Unit	Test method
Thickness	50	50	μm	-
TT	89	90	%	ISO 14782
YI	1.7	1.5	-	ASTM E313
Haze	0.4	0.4	%	ASTM D1003
Modulus	6.2	3.6	GPa	ASTM D882
Hardness	2H	4B	0.75kgf	ISO 15184
Flexibility	>200K	>200K	Cycles	R=2 mm

These data are not guaranteed values but the typical measurement values at our company.

Film Surface Uniformity



OT2(H)



OT2

OT2(R) – Touch Sensor Film

Features 特性

- Thickness 5~25 μm
- High Transmittance (>90%)
- Low Yellowish (YI<2)
- Low R_{th} (<70nm; <30 nm)

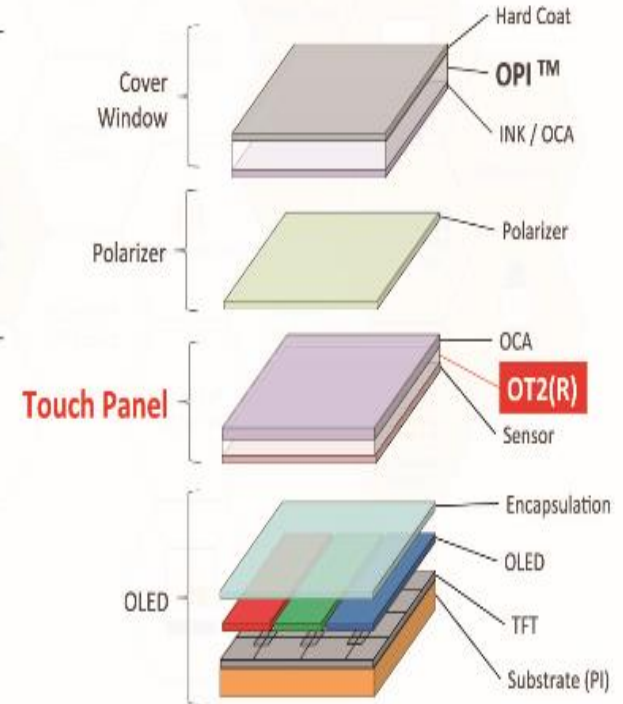
Technical Information 技術情報

	OT2(R)-ST	OT2(R)	OT2	Unit	Test method
Thickness	15	15	15	μm	-
TT	>90	>90	>90	%	ISO 14782
YI	<2	<2	1.3	-	ASTM E313
Haze	<1	<1	<1	%	ASTM D1003
R_0	<5	<50	120	nm	TMT method
R_{th}	<30	<70	550	nm	TMT method

These data are not guaranteed values but the typical measurement values at our company.



Structure for Foldable AMOLED Foldable AMOLED向け構造

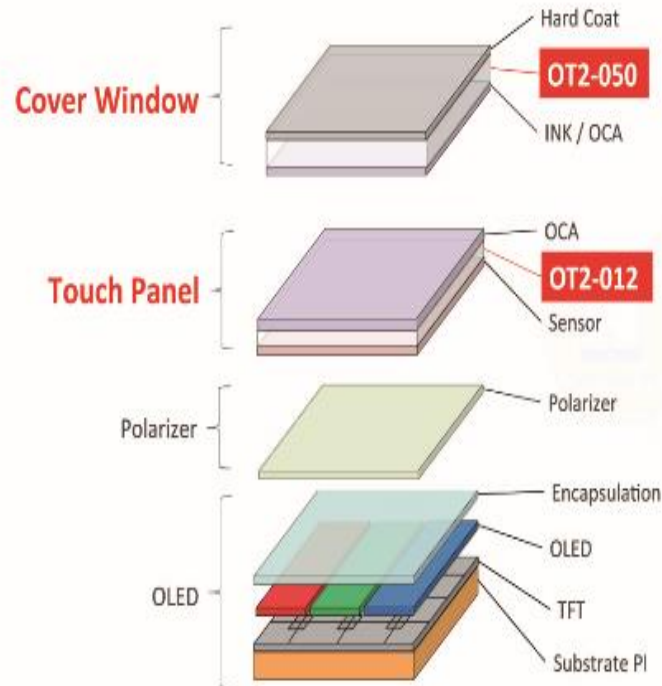


OT2 – Foldable Device

Features 特性

- Thickness 10~50 μm
- High Transmittance (>90%)
- Low Yellowish (YI<2)
- Low Haze (<1%)

Structure for Foldable AMOLED Foldable AMOLED向け構造



Technical Information 技術情報

	OT2		Unit	Test method
Thickness	12	50	μm	-
TT	90	90	%	ISO 14782
YI	1.2	1.5	-	ASTM E313
Haze	0.3	0.4	%	ASTM D1003
Modulus	3.8	3.6	GPa	ASTM D882
Hardness	5B	4B	0.75kgf	ISO 15184
Flexibility	>200K	>200K	Cycles	R=2 mm

These data are not guaranteed values but the typical measurement values at our company.

Applications 応用



Foldable Display



Touch Panel

Q&A

Thank you

TAIMIDE TECH. INC

- www.taimide.com.tw