



*Compound Semiconductor Solutions
from RF to Lightwave*

穩懋半導體

穩懋半導體公司簡介

2022年3月

投資人關係窗口

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免責聲明

- 本資料可能包含對於未來展望的表述。該類表述是基於對現況的預期，但同時受限於已知或未知風險或不確定性的影響。因此實際結果將可能明顯不同於表述內容。
- 除法令要求外，公司並無義務因應新資訊的產生或未來事件的發生主動更新對未來展望的表述。

- 產業概況
- 新技術開發
- 營運結果與展望
- Q&A

產業概況

營運成果



2021年營收續創新高



Cellular、Satellite產品營收表現亮眼，成長率超過三成 (Optics成長率超過一成)



南科生產基地依進度建置中 (Q2'23完成潔淨室)

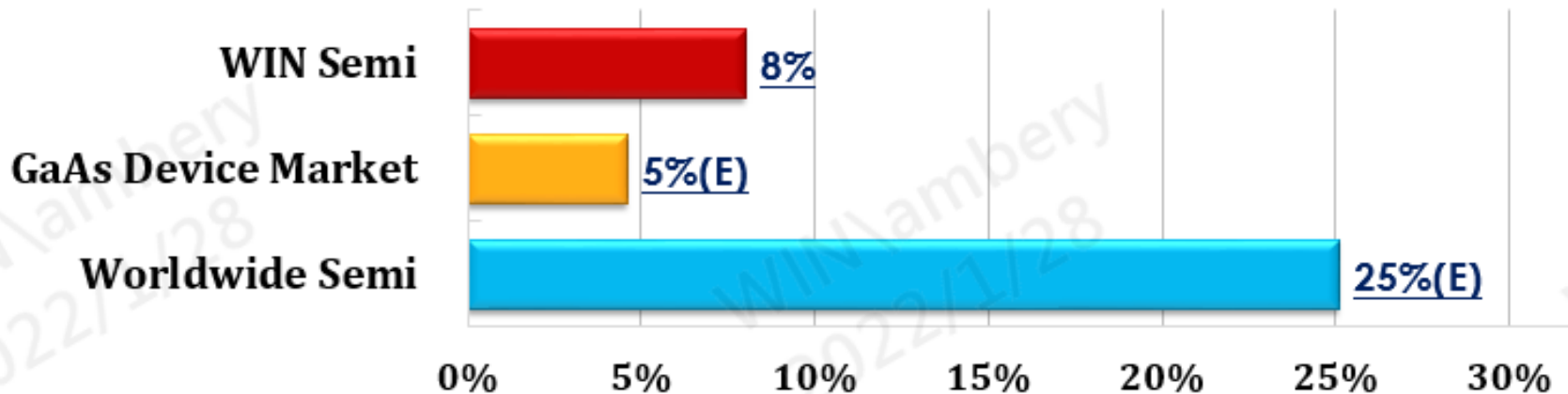


積極進行產學合作，培育半導體人才

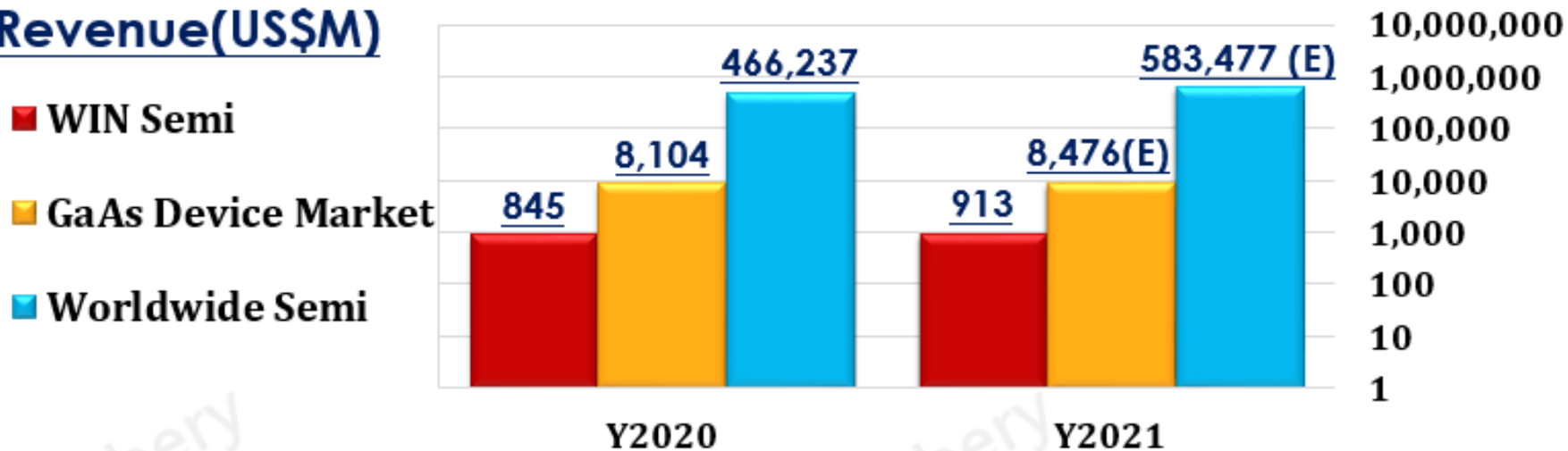
- 與陽明交大成立「聯合技術創新中心」
- 與15家企業注資成功大學增設「智慧半導體及永續製造學院」

2021半導體產業營收成長趨勢

Y2021 Revenue Growth Rate(US\$)



Revenue(US\$M)



Source : (1) GaAs Market Estimation, Strategy Analytics, July 2021
 (2) Worldwide Semiconductor Revenue, Gartner, Apr. 2021 and Jan.2022



5G + Wi-Fi



Satellite

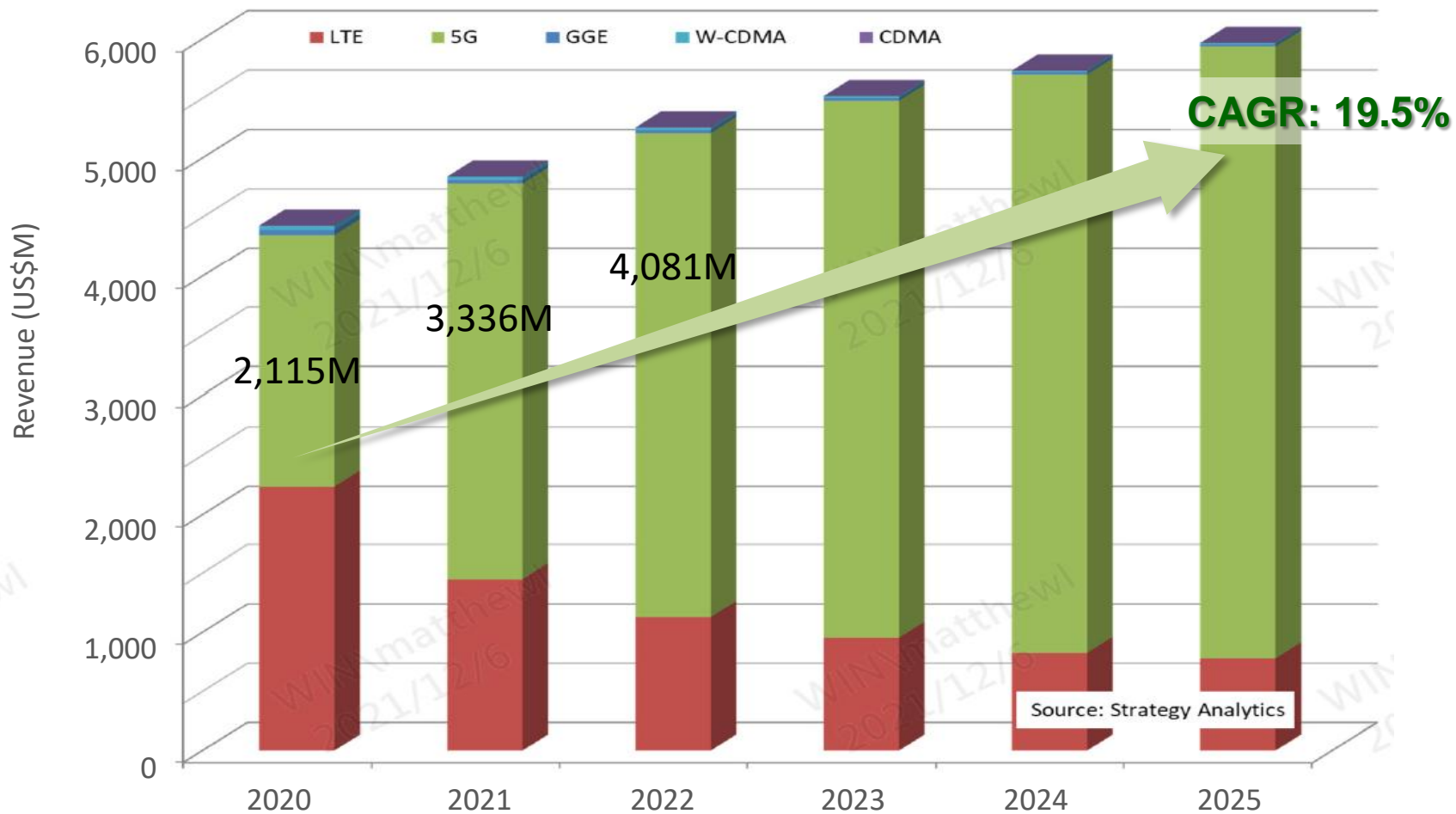


Optical
Devices

展望2022年

- 4G、5G並存，動能擴大，Cellular及Infra產品大量生產中，持續耕耘新世代技術
- 提升Wi-Fi 6&6E市場滲透率，Wi-Fi 7所需相應技術積極發展中
- 低軌道衛星整合陸海空無縫連網，衛星通訊需求強勁
- VCSEL製造技術及品質領先，3D及近接感測應用擴大，車用內部傳感產品成功交付
- InP光電產品包含接收器及其他雷射元件，與潛力客戶積極合作，發展LiDAR應用

Merchant RF GaAs MMIC Revenue for Cellular Terminals





Wi-Fi 6E 市場滲透率提升

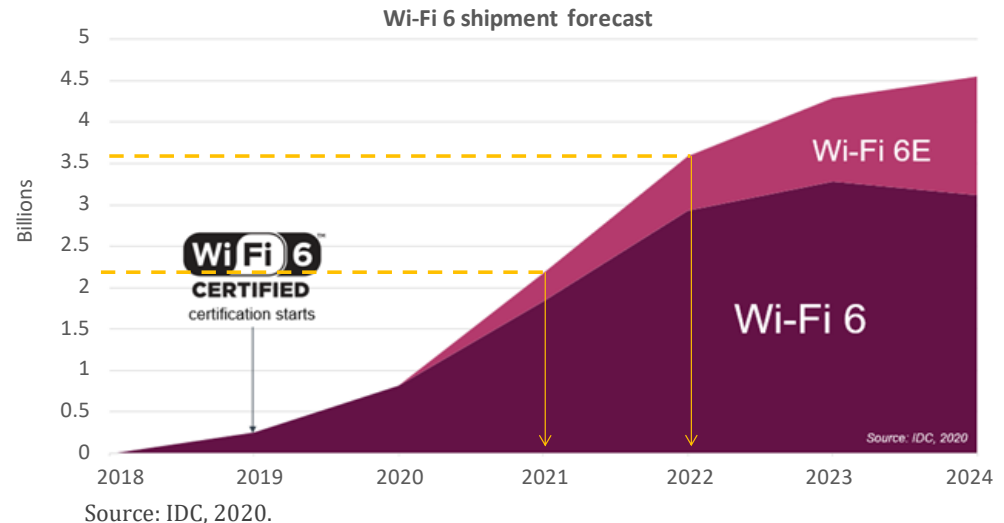


Wi-Fi 6 & 6E new frequency band and penetration rate growth



- Wi-Fi 6E (6-7 GHz) needs superior frequency & high linearity performance which is a challenge to semiconductor.
- GaAs' outstanding characteristics can fulfill the critical requirement of Wi-Fi 6E.

- More than 3.5 billion Wi-Fi 6 product shipments in 2022, growing to 79% of product shipments.
- Nearly 20% of all Wi-Fi 6 device shipments will support 6 GHz by 2022.
- 5.2 billion Wi-Fi 6 product shipments by 2025, 41% of which will be Wi-Fi 6E.



- **Wi-Fi 7: Expect more complex modulation, wider bandwidth and higher frequency.**
 - GaAs shows higher linearity (1K to 4K QAM) & operation freq. for complex modulation.
 - More MIMO requirements (from 8x8 to 16x16)
- **WIN is developing advanced HBT for Wi-Fi 7.**

衛星之多層次網路



- **營收市場增大** ~December 21, 2021 MarketsandMarkets
 - The SATCOM on the move market is projected to grow from US\$ 17.7 billion in 2021 to USD 42.8 billion by 2026, at a CAGR of 19.3%.
- **數據傳輸增加** ~December 6, 2021 NSR Report
 - The space data volumes are expected to increase 14x, and it will reach more than 500 exabytes of information from 2020 to 2030.

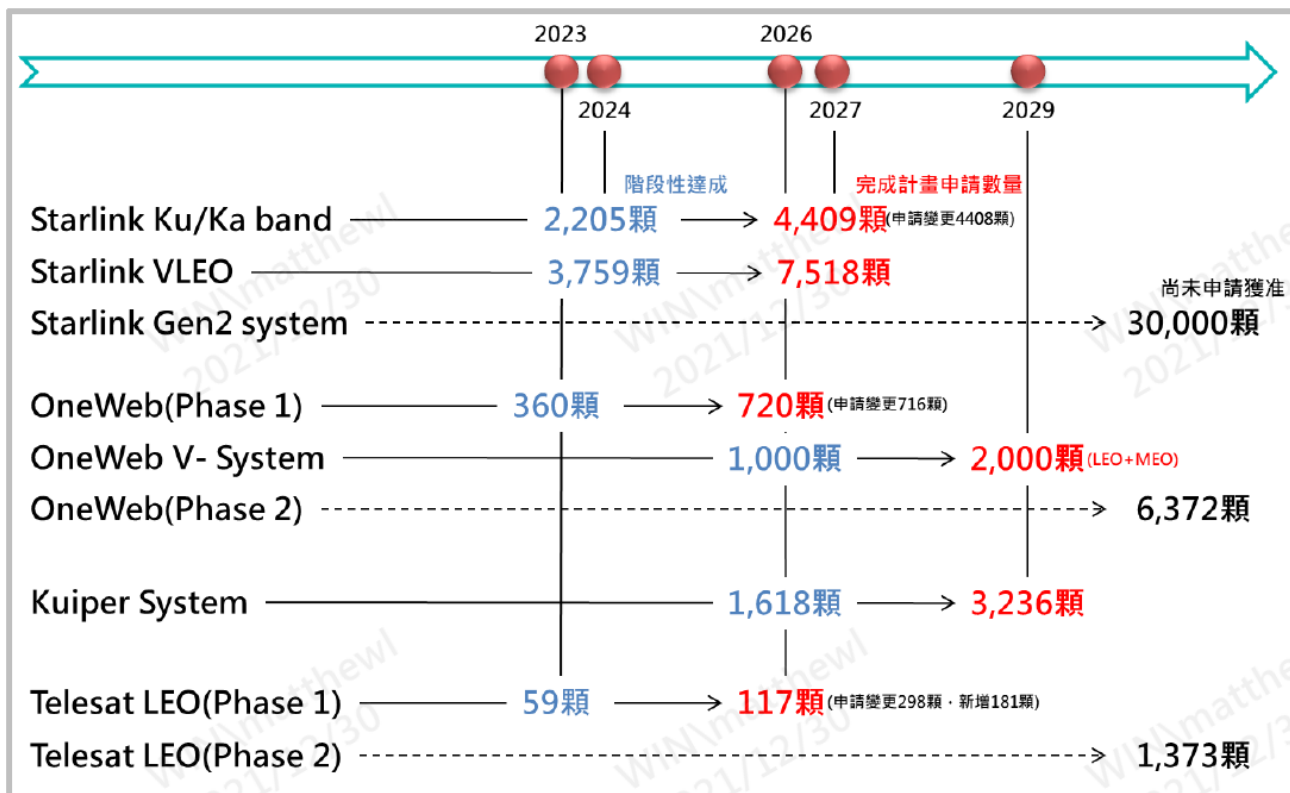
全球低軌通訊衛星星系計畫，目前向聯邦通訊委員會(FCC)所遞送的非高軌道衛星(NGSO)申請數量，皆突破千顆等級，形成巨型星系(Mega-constellation)。

美國
SpaceX Starlink

英國
OneWeb

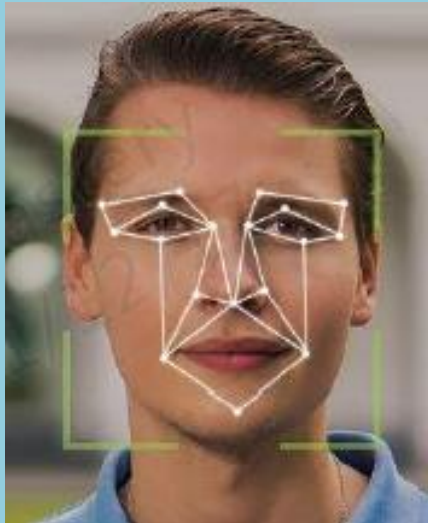
美國
Amazon Kuiper

加拿大
Telesat



資料來源：工研院產科國際所

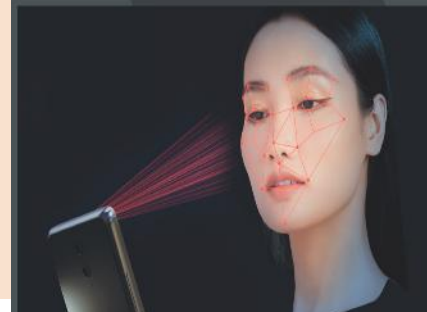
AR/VR



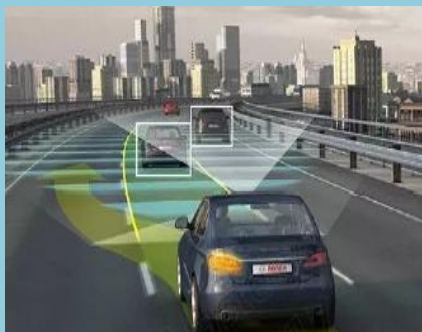
- Structure-Light continuously be used for facial recognition.
- ToF for more 3D sensing applications will keep growing.
 - LiDAR at rear side of smartphone
 - AR/VR Metaverse
 - Proximity sensor
 - Camera focus assistant



Secure face authentication behind OLED
for unlock and mobile payment

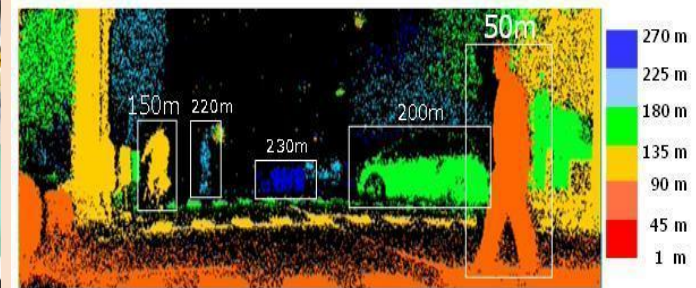


LiDAR



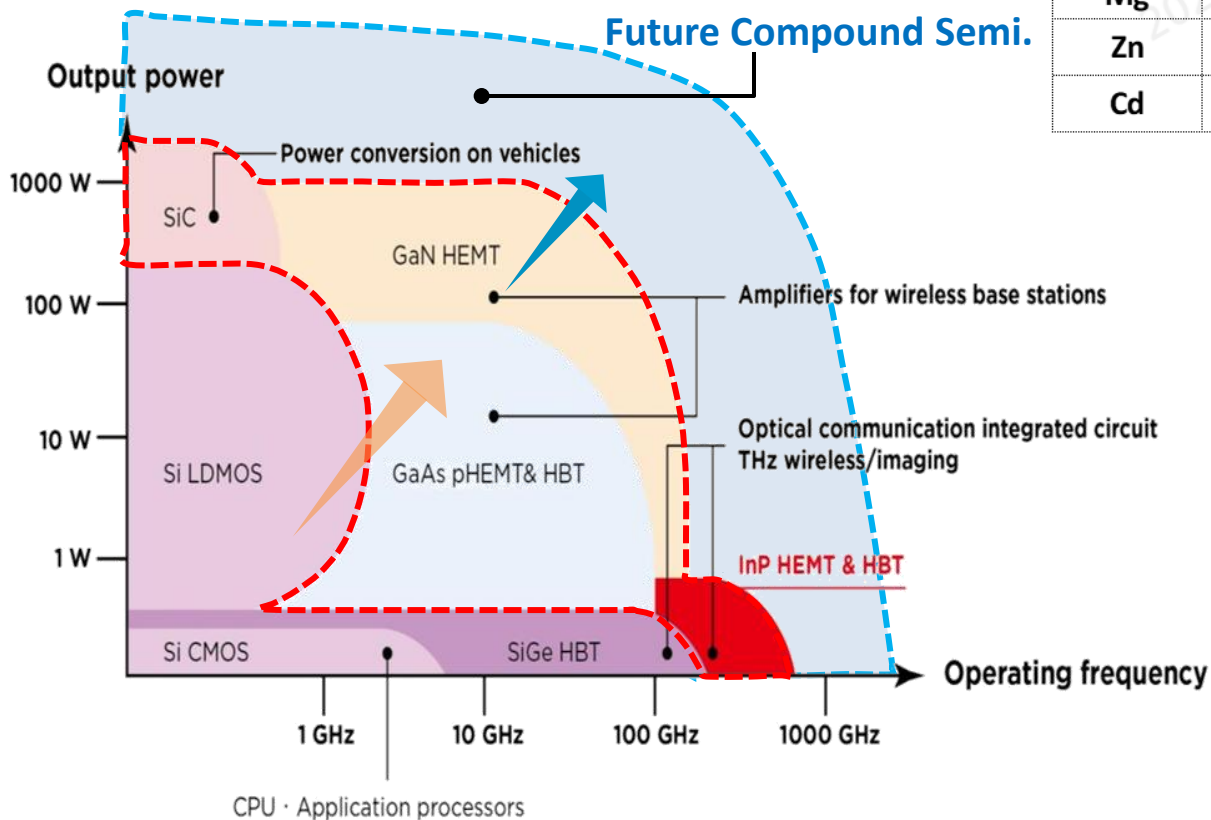
- **ToF for LiDAR applications will keep growing.**

- High-power infrared VCSEL is in production for automotive applications. (in-vehicle sensing device DMS/OMS駕駛及乘員監控系統)
- 150-200m long range LiDAR for robotaxis and passenger cars is in pilot stage.
- AGV (Automated Guided Vehicle無軌無人搬運車) is in pilot stage.



新技術開發

化合物半導體技術發展



Periodic Table

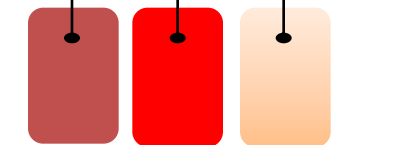
Group II	Group III	Group IV	Group V	Group VI
Be	B	C	N	O
Mg	Al	Si	P	S
Zn	Ga	Ge	As	Se
Cd	In	Sn	Sb	Te

GaAs GaN, InP

1550 ~ 850nm

SWIR

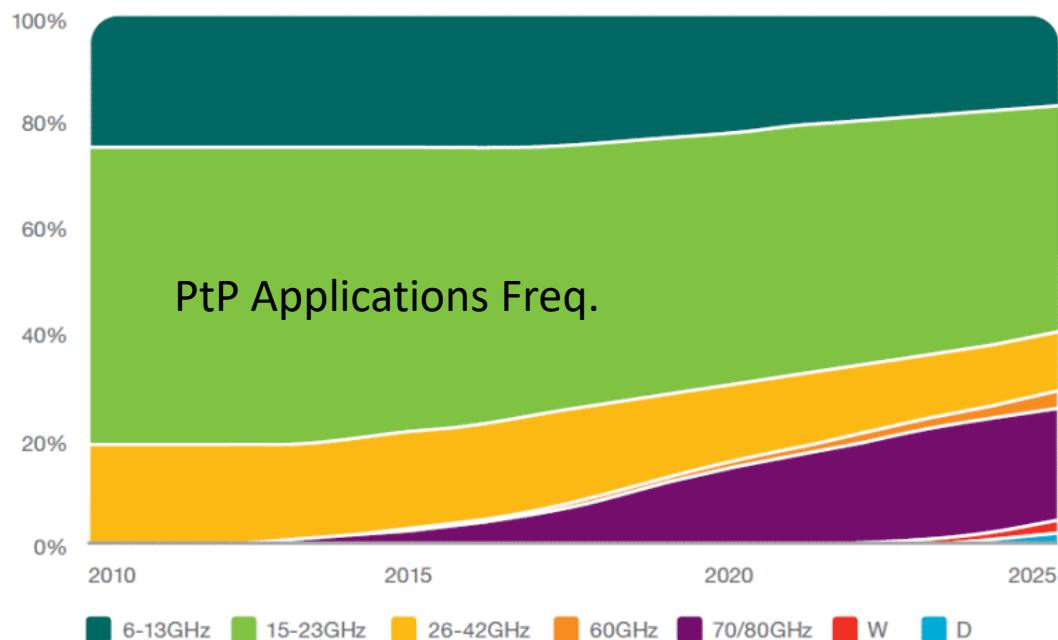
LiDAR Datacom



High speed, Light emitting, Light absorption, Insulating substrate

氮化鎵(GaN) – 無線通訊

- To leverage experienced skills, RF specialty and production advantage, WIN strategically focus on RF GaN market.
- The application market of GaN is about to boom, including satellite, PtP, and other consumer applications.
- WIN's GaN solutions cover DC-40 GHz, which covers most of the applications.



Source: Ericsson

磷化銦(InP) – 光通訊



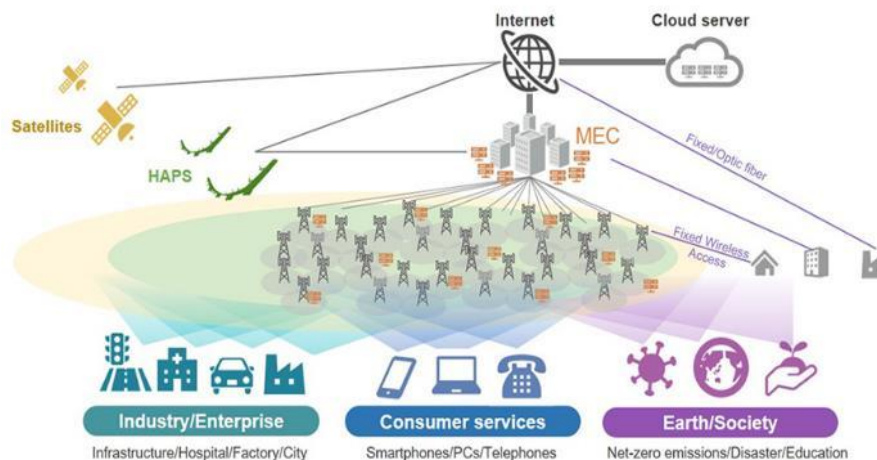
Proximity (近接感測)



SWIR (短波長紅外線)



LiDAR (光達)

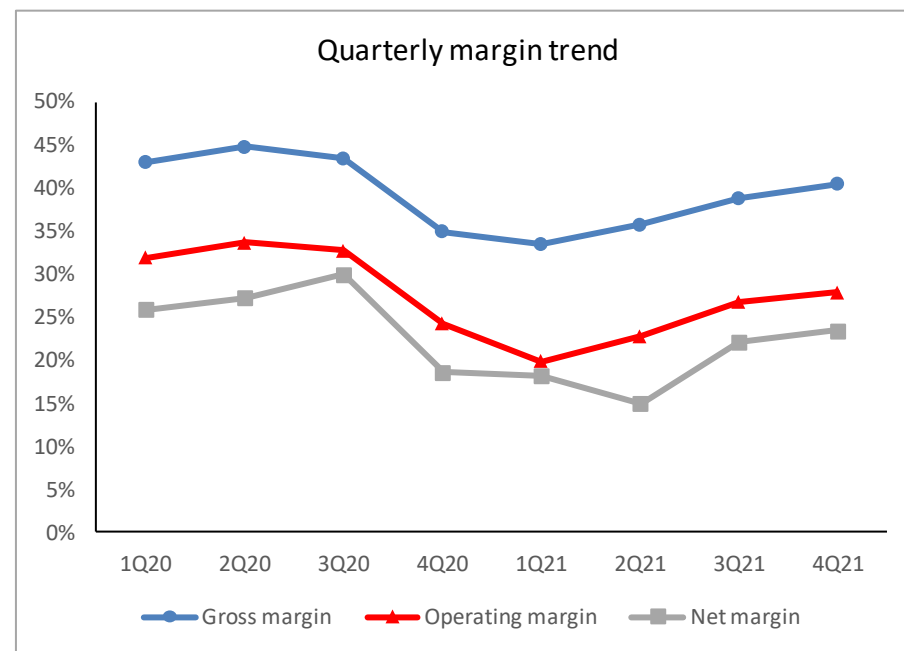
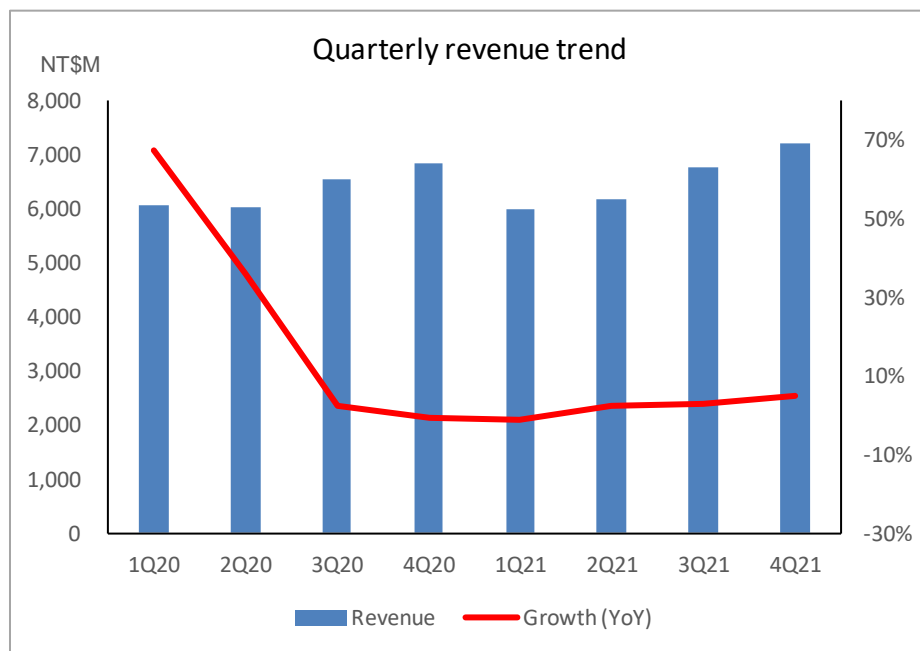


RF THz Applications

營運結果與展望

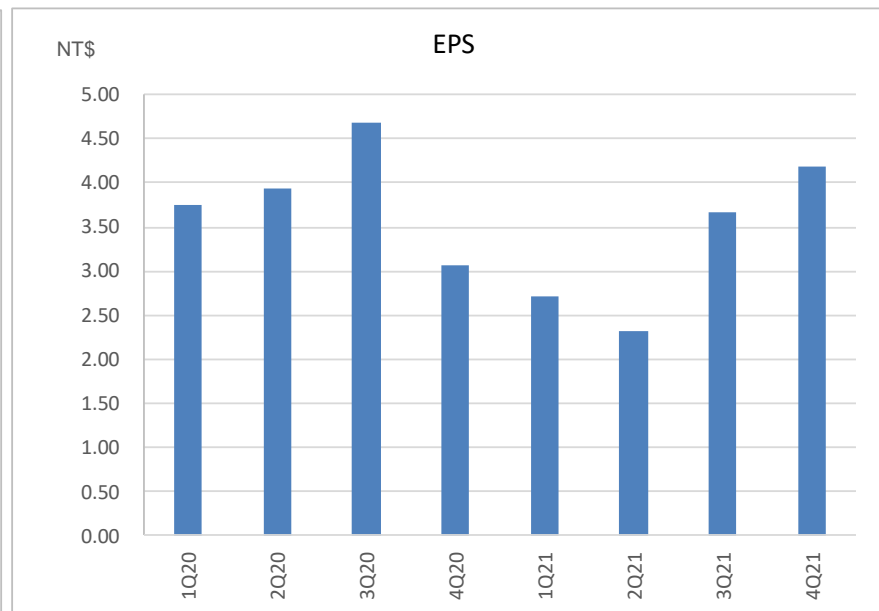
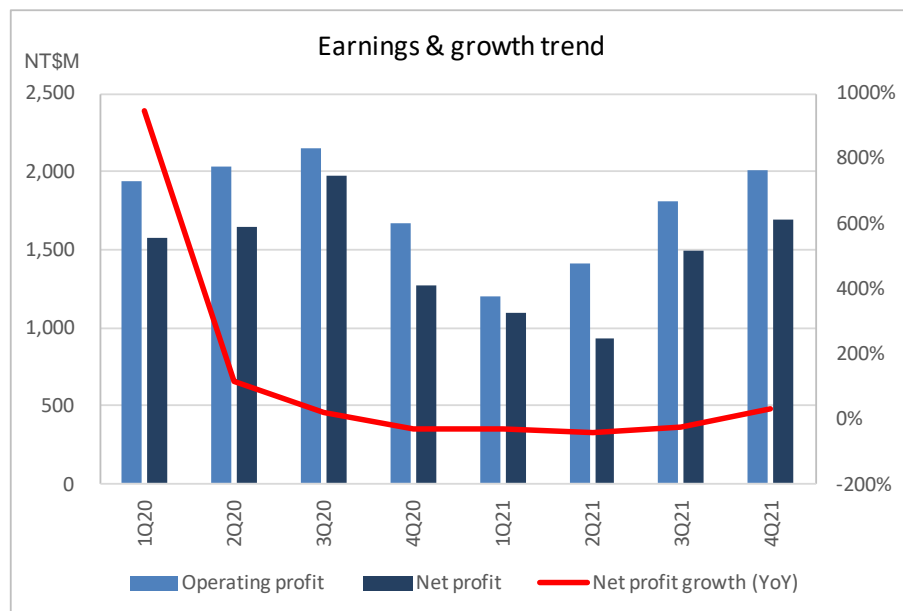
營收及毛利趨勢

- 第四季營收為新台幣72.17億元，較前一季增加7%，較去年同期增加5%。
- 第四季在產能滿載及產品組合的影響下，營業毛利率回升到40.5%，較前一季增加1.7個百分點；營業淨利率為27.8%，較前一季增加1個百分點。



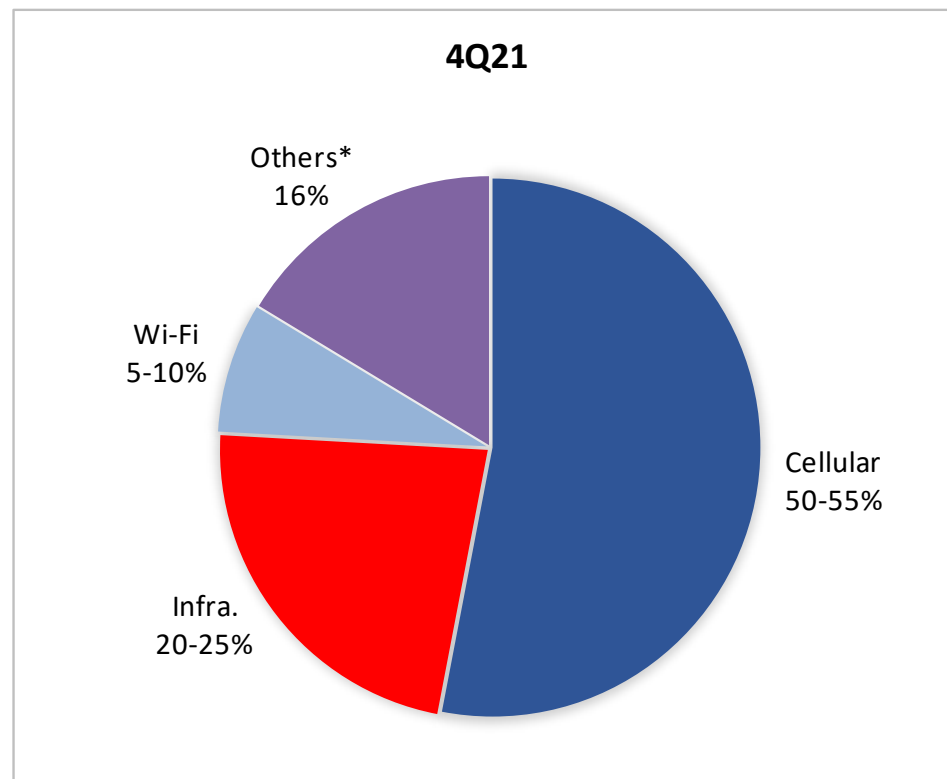
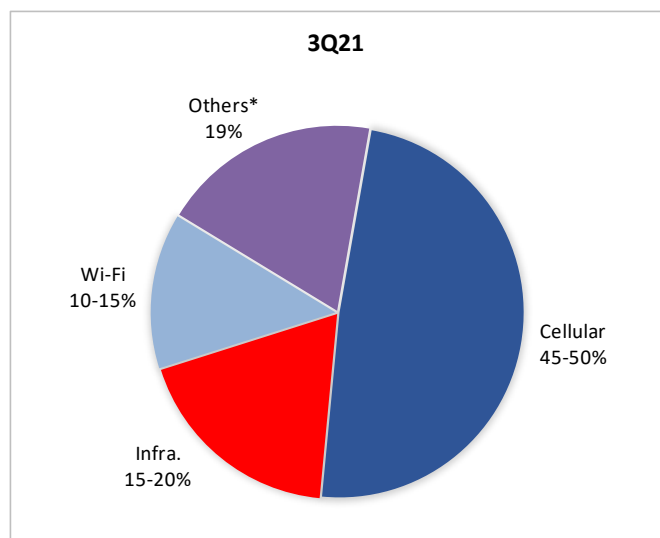
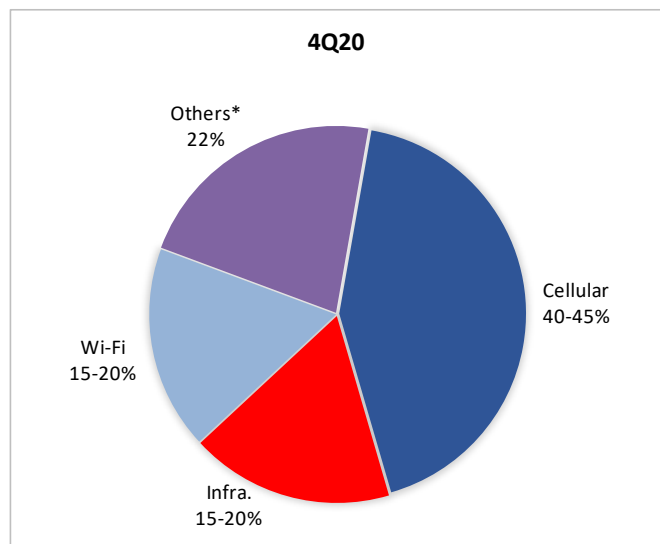
Source: company.

- 第四季淨利為NT\$16.9億元，較前一季增加13%，較去年同期增加32%；第四季EPS為NT\$4.19元，前一季EPS為NT\$3.67元。



Source: company.

產品組合



* Others: 未歸屬於以上主要產品別之營收，以及因應IFRS要求而併入集團之合併營收

Source: company.

- 2022年第一季因晶圓廠陸續歲休保養以及傳統淡季，營收預計較前一季下滑 **low-twenties** 百分比。
- 2022年第一季毛利率預計約為 **mid-thirties** 的水準。

附件 – 財務狀況

合併綜合損益表 - 第四季

(新台幣 百萬元)	4Q'20	3Q'21	4Q'21	QoQ	YoY
營業收入	6,861	6,761	7,217	+7%	+5%
營業毛利	2,399	2,623	2,923	+11%	+22%
營業毛利率(%)	35.0%	38.8%	40.5%		
營業費用	(735)	(814)	(914)	+12%	+24%
營業費用率(%)	-11%	-12%	-13%		
營業淨利	1,664	1,810	2,009	+11%	+21%
營業淨利率(%)	24.3%	26.8%	27.8%		
營業外收支淨額	(48)	28	41		
稅前淨利	1,617	1,838	2,049	+12%	+27%
所得稅費用	(341)	(342)	(360)		
本期淨利	1,276	1,496	1,690	+13%	+32%
淨利率(%)	18.6%	22.1%	23.4%		
每股純益(元)	3.07	3.67	4.19	+14%	+36%
其他綜合損益(稅後淨額)	718	(192)	380		
綜合損益總額	1,994	1,304	2,069	+59%	+4%
年化ROE(%)	16%	19%	21%		
約當產能利用率 (%)	85%	95%	100%		
折舊費用	983	990	1,018		
資本支出	2,958	1,289	2,245		

合併綜合損益表 - 年度

(新台幣 百萬元)	2020Y	2021Y	YoY
營業收入	25,546	26,182	+2%
營業毛利	10,569	9,770	-8%
營業毛利率(%)	41.4%	37.3%	
營業費用	(2,786)	(3,347)	+20%
營業費用率(%)	-11%	-13%	
營業淨利	7,782	6,423	-17%
營業淨利率(%)	30.5%	24.5%	
營業外收支淨額	220	(23)	
稅前淨利	8,002	6,400	-20%
所得稅費用	(1,534)	(1,189)	
本期淨利	6,469	5,210	-19%
淨利率(%)	25.3%	19.9%	
每股純益(元)	15.45	12.90	-17%
其他綜合損益(稅後淨額)	731	243	
綜合損益總額	7,200	5,454	-24%
年化ROE(%)	20%	16%	
約當產能利用率 (%)	85%	90%	
折舊費用	3,628	4,035	
資本支出	8,509	8,070	

營業外收支

(新台幣 百萬元)	4Q'20	4Q'21	2020Y	2021Y
外幣兌換損益	(11)	21	(44)	(127)
處分不動產、廠房及設備損益	25	(45)	21	(49)
透過損益按公允價值衡量之金融資產及負債淨損益	42	23	23	243
採用權益法認列之關聯企業及合資損益之份額	35	110	127	148
金融資產減損損失	(139)	-	(139)	-
其他	0.4	(68)	231	(239)
總計	(48)	41	220	(23)

合併資產負債表

(新台幣 百萬元) 重要科目	2020/12/31		2021/9/30		2021/12/31	
	\$	%	\$	%	\$	%
現金及約當現金	8,356	15%	16,482	23%	16,332	22%
透過損益按公允價值衡量之金融資產-流動	756	1%	56	0.1%	62	0.1%
應收票據及帳款淨額	2,038	4%	2,088	3%	2,718	4%
存貨	5,499	10%	6,594	9%	6,671	9%
長期投資	8,375	15%	13,575	19%	14,414	19%
不動產、廠房及設備	26,637	49%	29,512	41%	30,991	41%
資產總計	54,702	100%	71,999	100%	74,894	100%
一年內到期之長期負債	-		5,549		-	
流動負債	6,703		11,930		7,215	
應付公司債	-		13,244		13,287	
長期借款	11,419		10,520		15,993	
負債總額	18,972	35%	37,021	51%	37,772	50%
普通股股本	4,241		4,240		4,240	
歸屬於母公司業主之權益	34,078		32,792		34,938	
權益總計	35,730	65%	34,978	49%	37,122	50%
每股淨值(元) ¹	80.36		77.33		82.41	
重要財務指標						
流動比率	261%		218%		367%	
負債比率	35%		51%		50%	

¹ 每股淨值=歸屬於母公司業主權益/普通股股數

Q & A

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