



*Compound Semiconductor Solutions
from RF to Lightwave*

穩懋半導體

WIN Semiconductors Company Presentation

May - July 2022



Safe Harbor Notice



- **This presentation contains certain forward-looking statements that are based on current expectations and are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements.**
- **Except as required by law, we undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.**

- **Market Outlook**
- **Advanced Technology Development**
- **Financial Review & Guidance**
- **Q&A**

MARKET OUTLOOK

Growth Engines

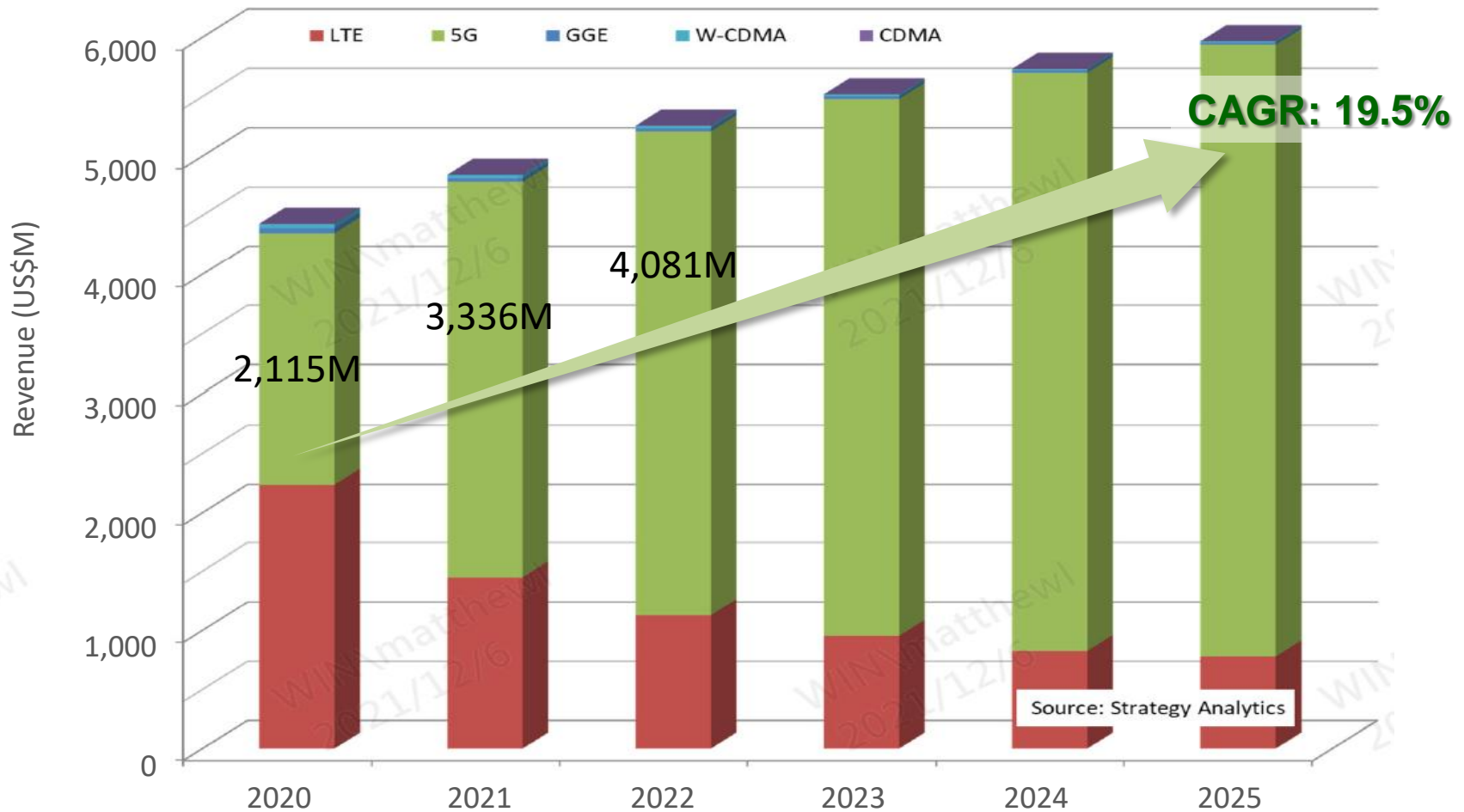


Outlook

- The momentum is increasing with the coexistence of 4G and 5G network. Cellular and Infra products keep under mass production. WIN is continuously developing the new-generation technologies.
- As market penetration of Wi-Fi 6 & 6E increasing, WIN is developing technologies for Wi-Fi 7.
- Strong demand on satellite communication especially Low Earth Orbit (LEO) satellites provide seamless connectivity for ubiquitous communications.
- WIN takes the lead in VCSEL manufacturing/quality techniques. Applications on 3D and proximity sensing are expanding. And, WIN has delivered the vehicular sensors in automobiles successfully.
- For InP optoelectronic products including receivers and other laser devices, WIN is working closely with potential customers to develop LiDAR related applications.

5G Is Expanding

Merchant RF GaAs MMIC Revenue for Cellular Terminals





Wi-Fi 6E Is the Next Wave

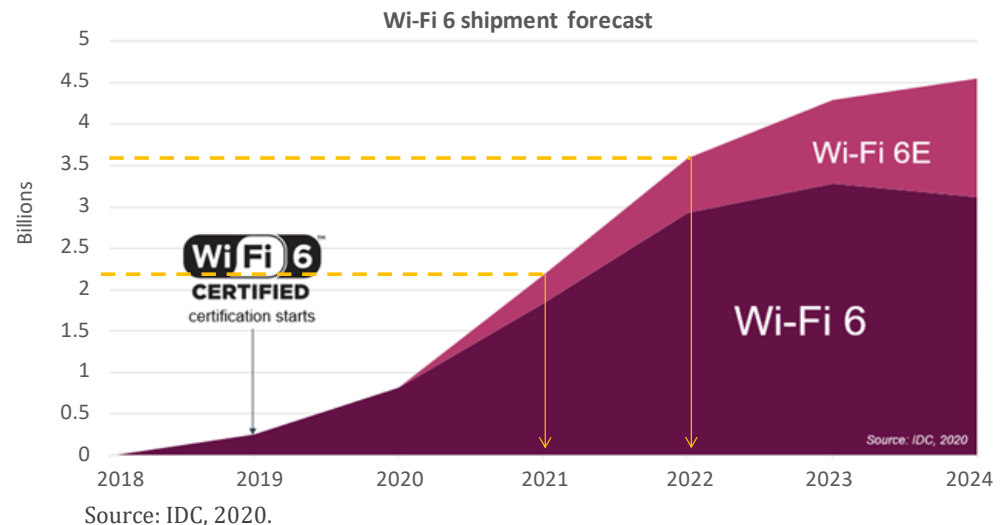


Wi-Fi 6 & 6E new frequency band and penetration rate growth

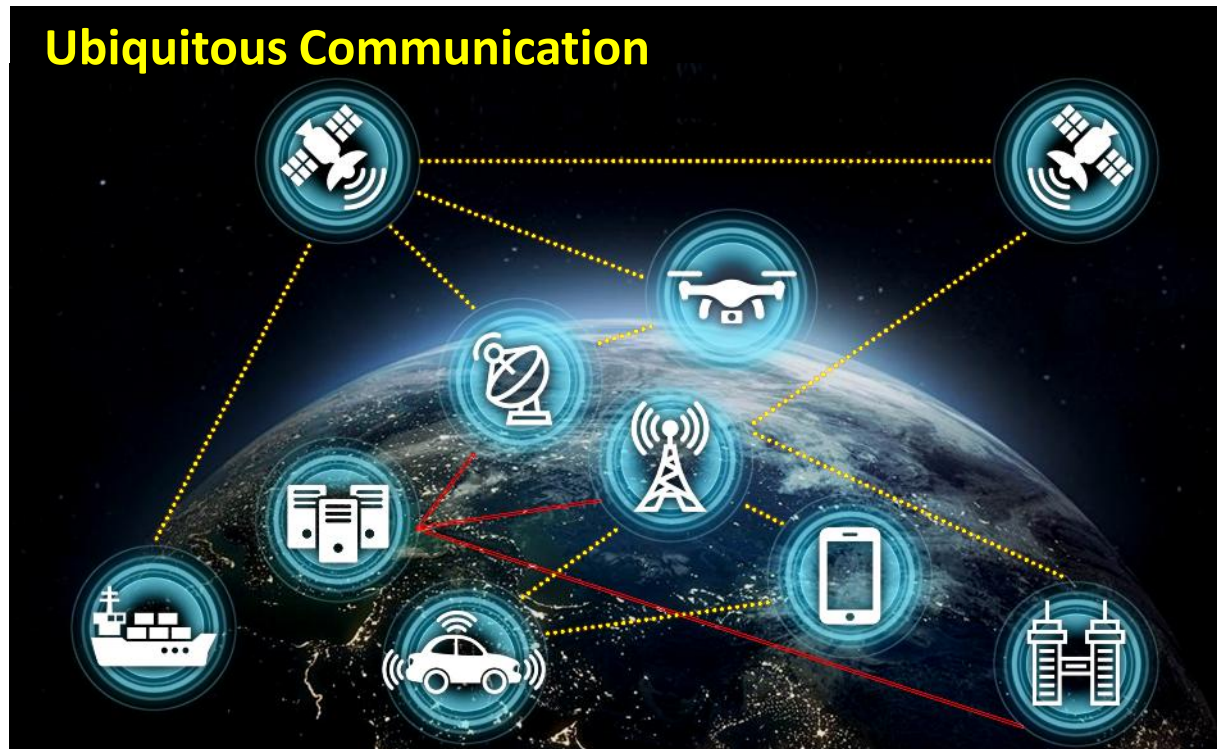


- Wi-Fi 6E (6-7 GHz) needs superior frequency & high linearity performance which is a challenge to semiconductor.
- GaAs' outstanding characteristics can fulfill the critical requirement of Wi-Fi 6E.

- 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.**



- **Market is Augmenting** ~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%.
- **Data Traffic is Increasing** ~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.

Satellite Communication

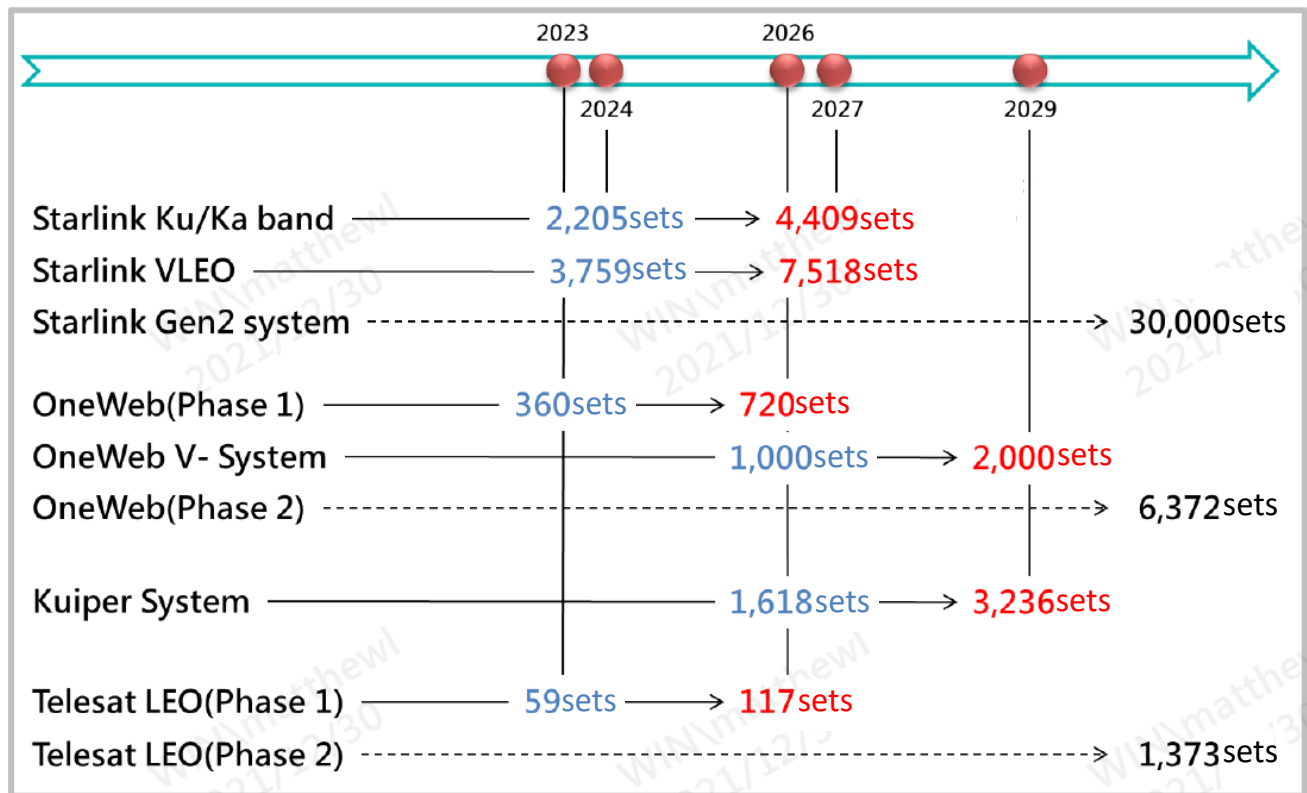
Global LEO constellation plan: All the applications of NGSO to FCC are more than thousand sets. That will form Mega-constellation.

USA
SpaceX Starlink

UK
OneWeb

USA
Amazon Kuiper

Canada
Telesat



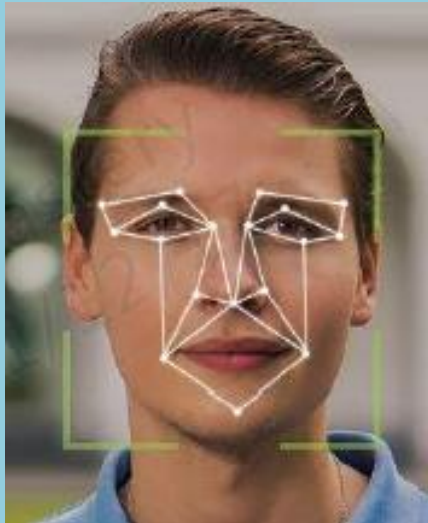
Source: IEK

3D Sensing Applications

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

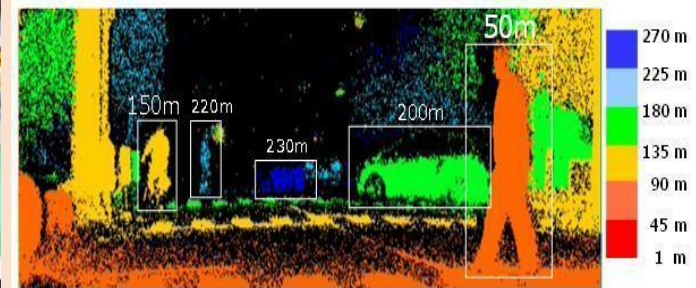


LiDAR Applications

LiDAR

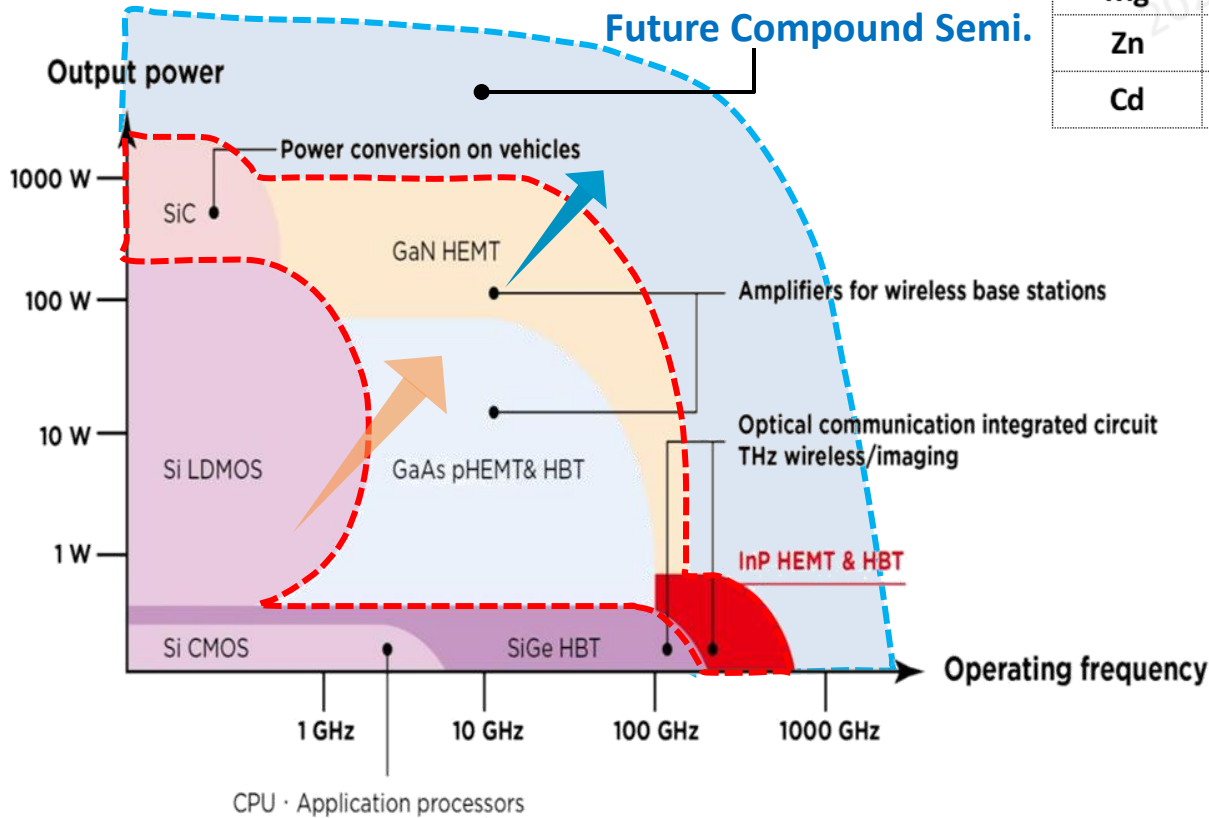


- **ToF for LiDAR applications will keep growing.**
 - High-power infrared VCSEL is in production for automotive applications. (in-vehicle sensing device DMS/OMS)
 - 150-200m long range LiDAR for robotaxis and passenger cars is in pilot stage.
 - AGV (Automated Guided Vehicle) is in pilot stage.



ADVANCED TECHNOLOGY DEVELOPMENT FOR FUTURE MARKETS

Compound Semi. Technologies for Future



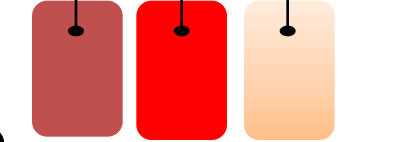
Periodic Table

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

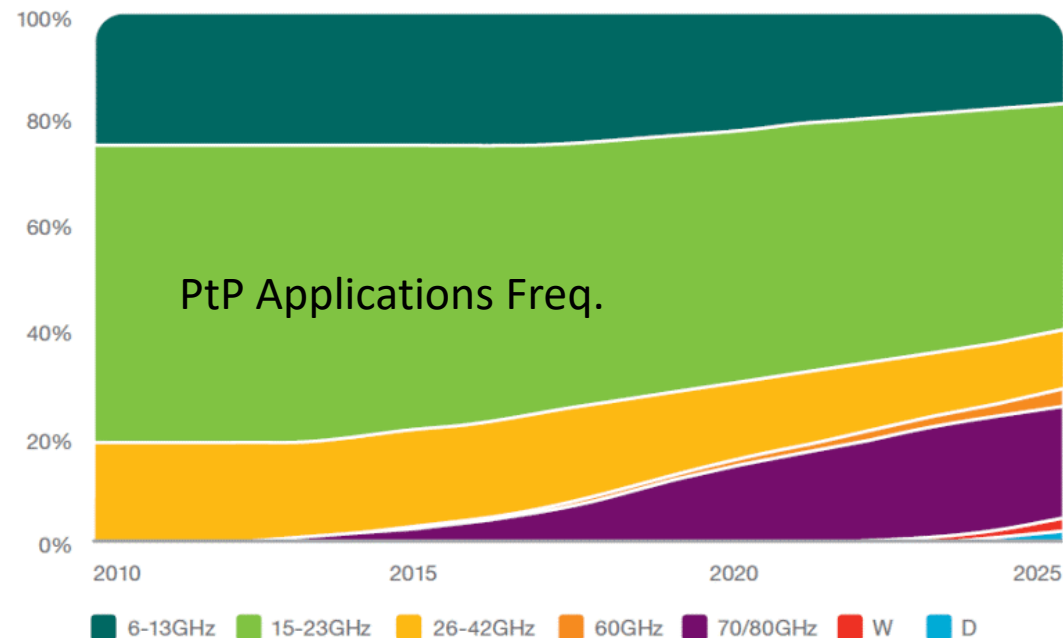


1PHz

High speed, Light emitting, Light absorption, Insulating substrate

GaN for RF

- 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

InP for Optics



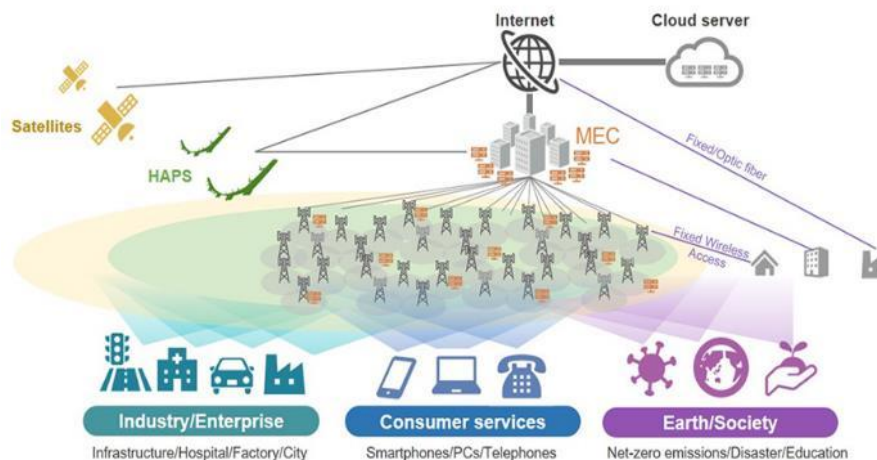
Proximity



SWIR



LiDAR

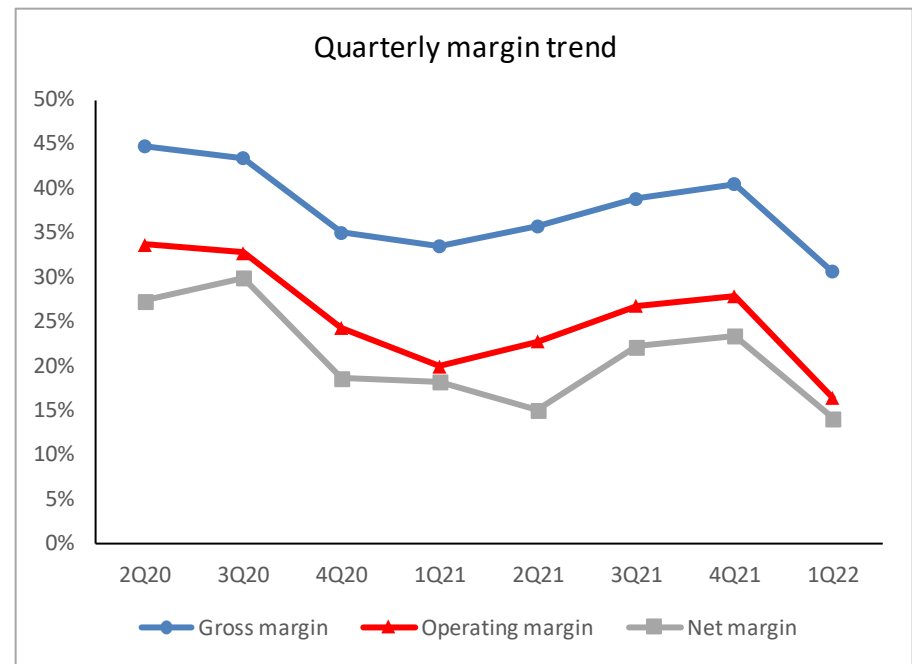
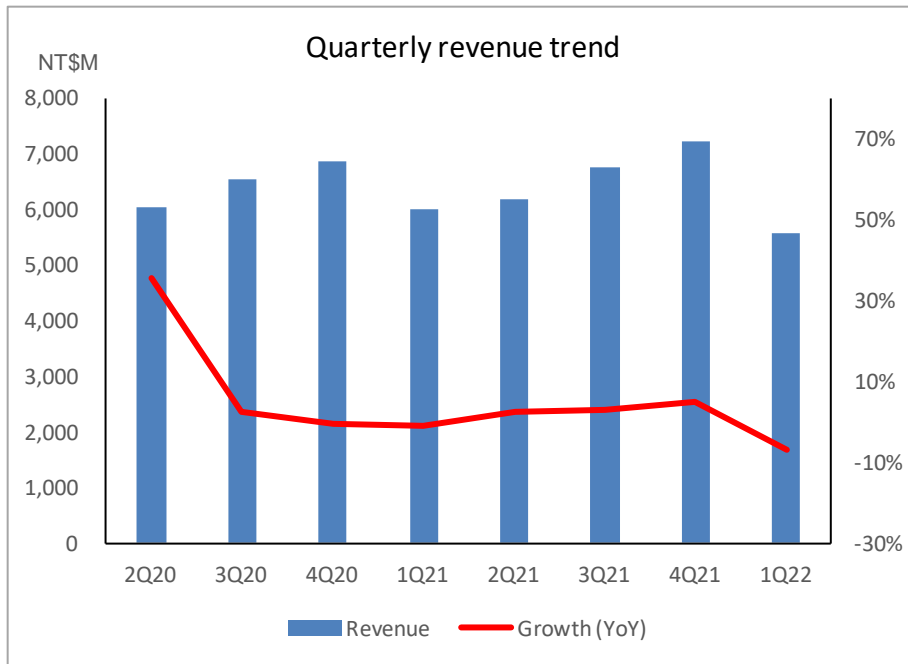


RF THz Applications

FINANCIAL REVIEW & GUIDANCE

Revenue & Margin Trend

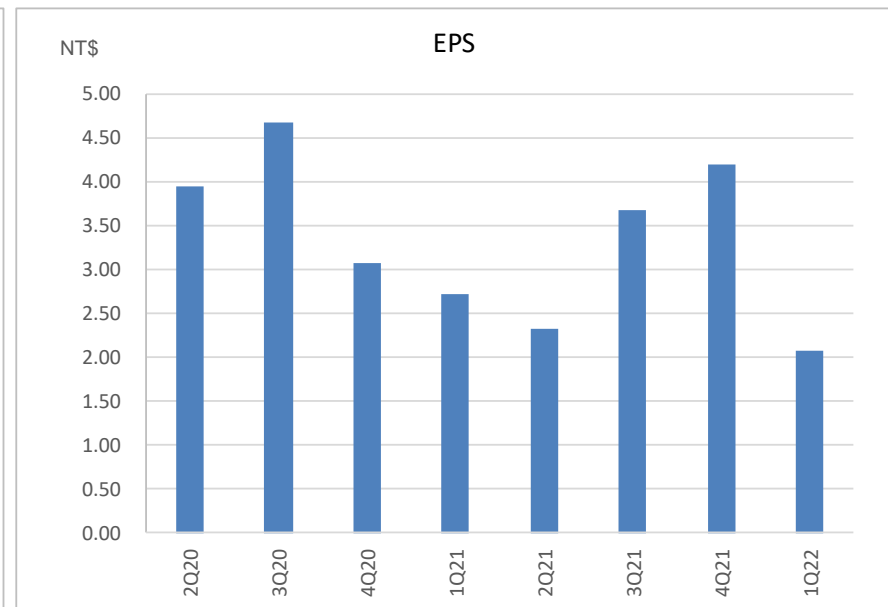
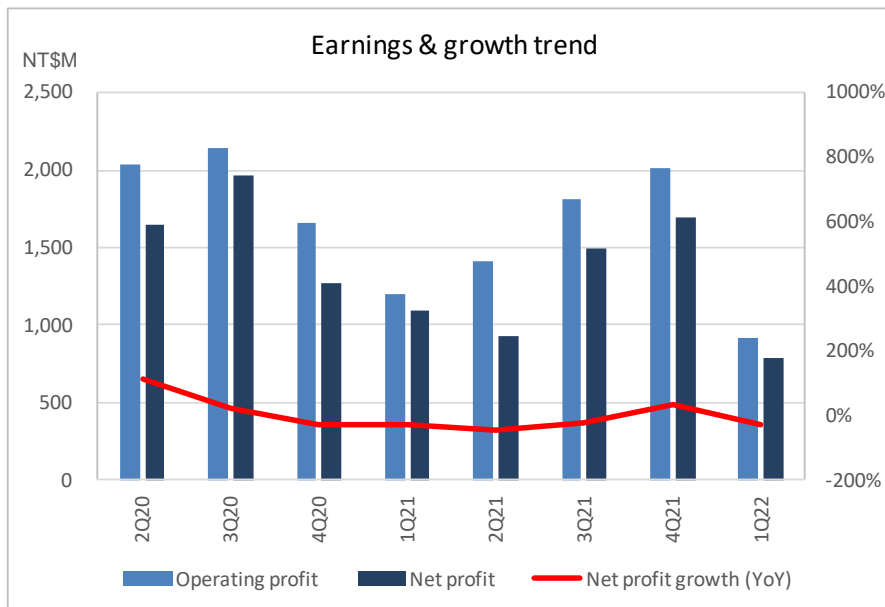
- 1Q22 revenue was NT\$5.6b, down 22% QoQ and down 7% YoY.
- 1Q22 gross margin declined by 9.9 pp sequentially to 30.6% and operating margin declined by 11.5 pp to 16.4%. The declines were mainly caused by a decline in capacity utilization rate.



Source: company.

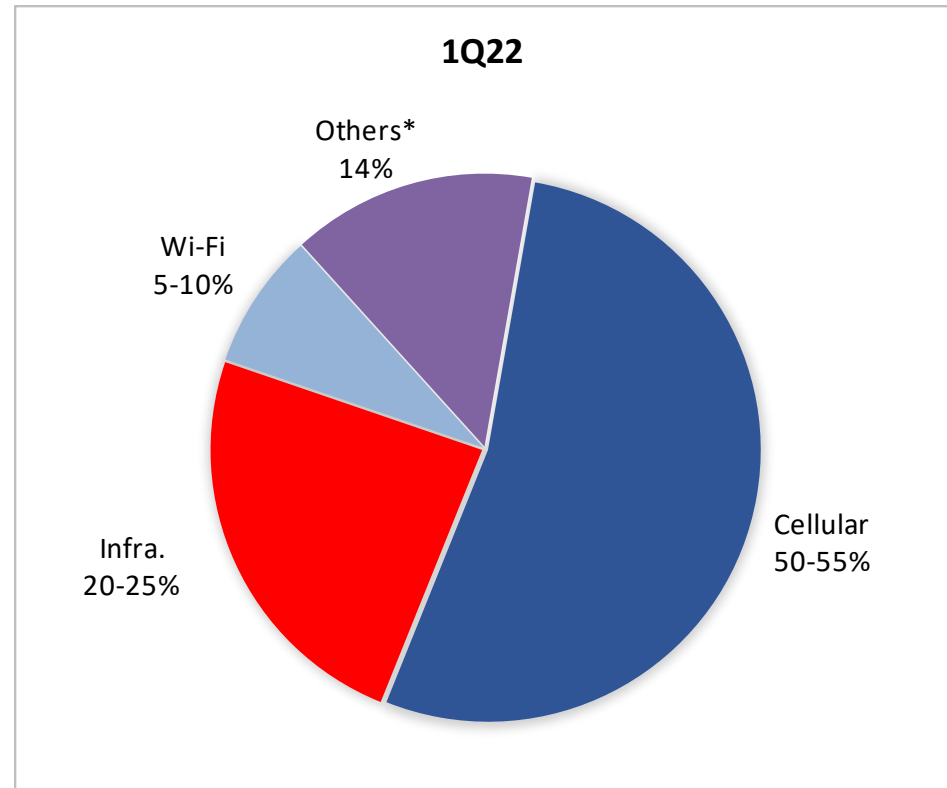
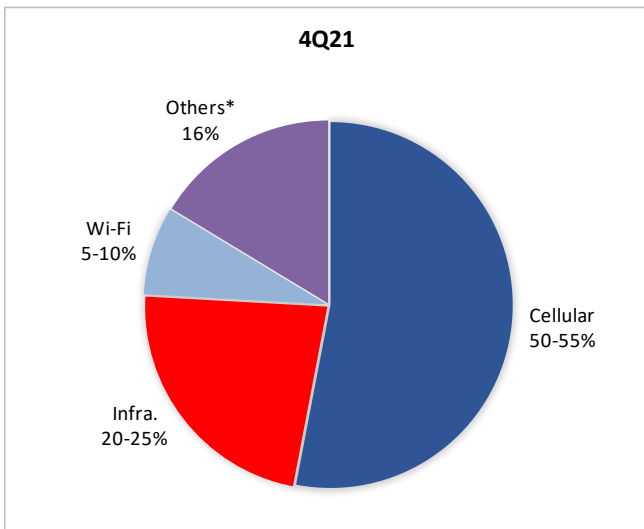
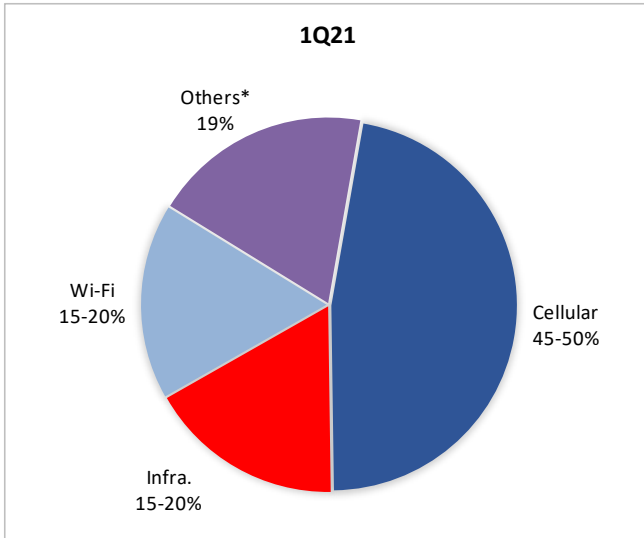
Earnings Trend

- **1Q22 net profit was NT\$ 786m, down 53% QoQ and down 28% YoY. EPS came in at NT\$2.08, compared to NT\$4.19 in 4Q21.**



Source: company.

Product Mix



* Others: Revenue not attributable to main product segments and additional revenue being consolidated in accordance with IFRS.

Source: company.

2Q22 Guidance



- **We expect 2Q22 revenue to decline high-single digit QoQ.**
- **We expect 2Q22 gross margin will be between the level of high-twenties and low-thirties.**

APPENDIX - FINANCIAL SUMMARY

Consolidated Statements of Comprehensive Income - Quarterly



Unit: NTD Million	1Q'21	4Q'21	1Q'22 (reviewed)	QoQ	YoY
Net revenue	6,009	7,217	5,597	-22%	-7%
Gross profit	2,012	2,923	1,714	-41%	-15%
<i>Gross margin (%)</i>	<i>33.5%</i>	<i>40.5%</i>	<i>30.6%</i>		
Operating expenses	(816)	(914)	(798)	-13%	-2%
<i>Operating expenses rate (%)</i>	<i>-14%</i>	<i>-13%</i>	<i>-14%</i>		
Operating income	1,196	2,009	916	-54%	-23%
<i>Operating margin (%)</i>	<i>19.9%</i>	<i>27.8%</i>	<i>16.4%</i>		
Non-operating incomes and expenses	191	41	75		
Income before income tax	1,386	2,049	991	-52%	-29%
Net income	1,095	1,690	786	-53%	-28%
<i>Net margin (%)</i>	<i>18.2%</i>	<i>23.4%</i>	<i>14.0%</i>		
EPS (NT\$)	2.72	4.19	2.08	-50%	-24%
Other comprehensive income, net	(14)	380	374		
Comprehensive income	1,081	2,069	1,160	-44%	+7%
ROE(%)	14%	21%	10%		
Approx. Utilization (%)	80%	100%	70%		
Depreciation	1,000	1,018	1,058		
CAPEX	1,834	2,256	1,320		

Non-operating Items

Unit: NTD Million	1Q'21	1Q'22 (reviewed)
Foreign exchange gains (losses)	191	339
Gains (losses) on disposals of property, plant and equipment	(5)	(0.1)
Gains on financial assets (liabilities) at fair value through profit or loss, net	78	(279)
Share of gains (losses) of associates and joint ventures accounted for using equity method	(39)	61
Others	(34)	(47)
Total	191	75

Consolidated Balance Sheets



(Unit: NTD Million)	Major Item	2021/3/31		2021/12/31		2022/3/31 (reviewed)	
		\$	%	\$	%	\$	%
	Cash and cash equivalents	22,334	32%	16,332	22%	14,207	19%
	Current financial assets at fair value through profit or loss	896	1%	62	0.1%	57	0.1%
	Notes and accounts receivable, net	1,999	3%	2,718	4%	2,020	3%
	Inventories	5,945	8%	6,671	9%	6,295	8%
	Long-term investments	8,525	12%	14,414	19%	14,621	20%
	Net property, plant and equipment	27,519	39%	30,991	41%	33,003	45%
	Total Assets	70,149	100%	74,894	100%	74,073	100%
	Current liabilities	11,368		7,215		11,036	
	Bonds payable	13,160		13,287		13,329	
	Long-term borrowings	11,536		15,993		13,520	
	Total Liabilities	36,919	53%	37,772	50%	39,177	53%
	Common stock	4,240		4,240		4,240	
	Total equity attributable to owners of parent	31,643		34,938		32,739	
	Total Equity	33,230	47%	37,122	50%	34,896	47%
	Book value per share (NT\$) ¹	74.62		82.41		77.22	
	Key Indices						
	Current ratio (<i>Current assets / Current liabilities</i>)	279%		367%		210%	
	Debt ratio (<i>Total liabilities / Total assets</i>)	53%		50%		53%	

¹ Book value per share = total equity attributable to owners of parent / number of common shares

Q & A

For more information regarding WIN
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