

Sensortek Technology Corp.

昇佳電子股份有限公司

論壇簡報



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昇佳電子股份有限公司

免責聲明

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議程

I. 公司簡介

II. 市場概況

III. 公司產品

IV. 經營實績

V. 未來發展

I. 公司簡介

關於我們

Company Name	Sensortek Technology Corp.	
Founded	December 1, 2009	
Capitalization	NT 489,126,180	
Chairman and CEO	Sheng-Su Lee	
Location	Tai Yuen Hi-Tech Industrial Park, Jhubei City, Hsinchu County	
Products	• 光學感測晶片 Optical Sensor - 近接感測晶片 Proximity Sensor (PS) - 環境光感測晶片 Ambient Light Sensor (ALS) - 色彩感測晶片 Color Temperature Sensor (RGB) - 閃頻偵測晶片 Flicker detection sensors • 微機電感測晶片 MEMS Sensor - 加速度感測晶片 Accelerometer Sensor (GS) - 壓力感測器 Barometric pressure sensor	
Listing	Taipei Exchange Market (TPEX) 06/08/2020 (上櫃) Emerging Stock Market (TESM) 06/18/2019 (興櫃)	

里程碑

Entry Level Market

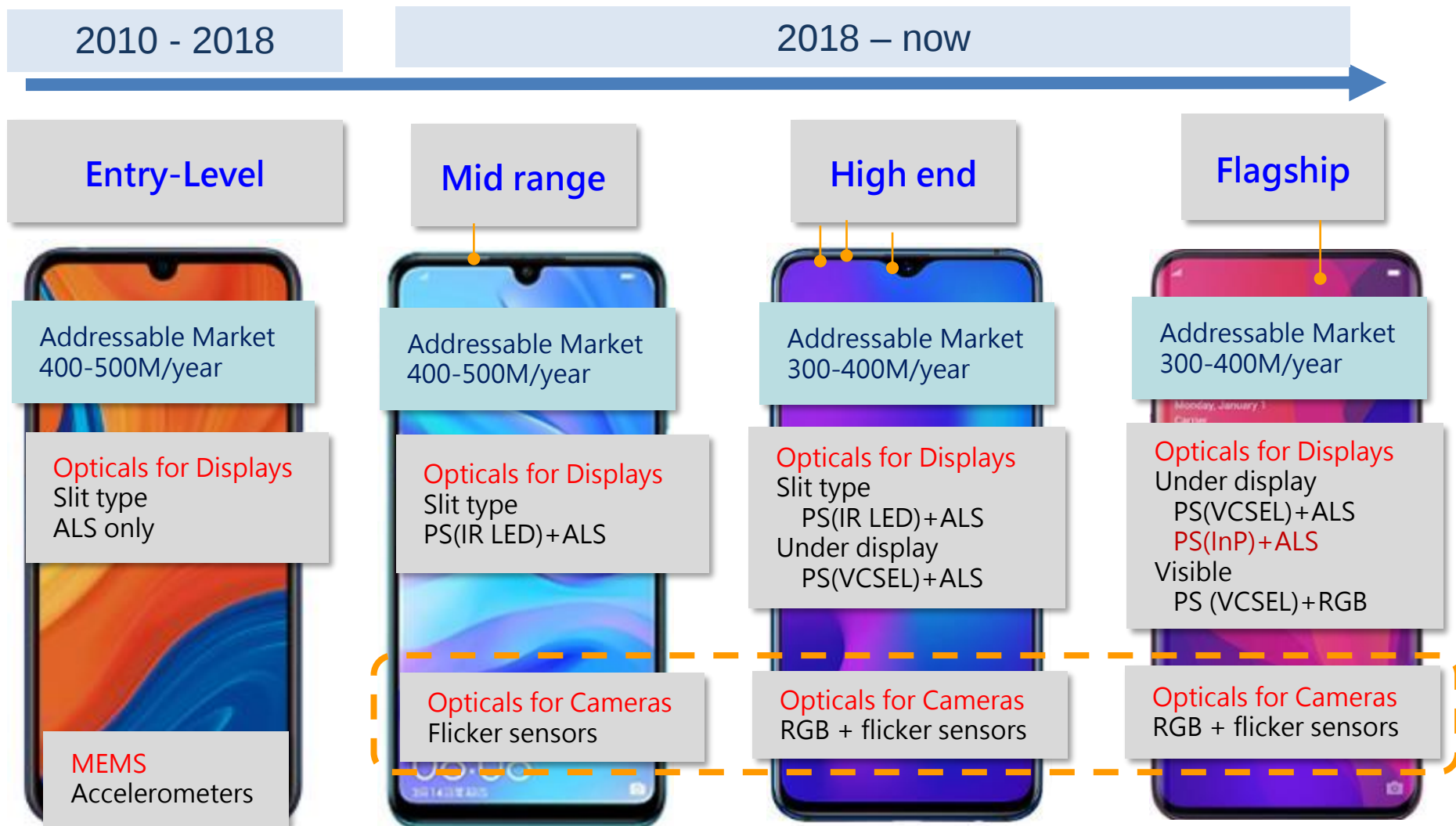
- 2009: Established the team and aim at entry-level smart phone models
- 2010: Launched Optical Product Lines: Proximity (PS) & Ambient Light (ALS) sensors
- 2012: Launched MEMS Product Line: Accelerometers (g-sensors)
- 2013: Spinoff
- 2017: Launched 2nd Gen. of Optical product: Invisible solution (PS+ALS, All-in-1)
- 2018: Launched 2nd Gen. of Optical product: Under display & slit type PS+ALS solution
Launched the 2nd Gen. of MEMS: Low-power G-sensors for smartphone

High-end Level Market

- 2019: Launched the 3rd Gen. of Optical product: RGB sensors for high-end front screen
- 2020: Listed at the Taipei Exchange Market (TPEX)
Launched the 3rd Gen. of Optical product: RGB + flicker sensors for rear cameras
- 2021: Move to high-end models
 - Launched Optical high sensitivity PS+ALS (x10) for AMOLED screens
 - Launched Optical InP (1300nm) PS+ALS solution for AMOLED screens
- 2022: more sensors to high-end models
 - Launched Optical high sensitivity PS+ALS (x15) for AMOLED screens
 - Launched Optical flicker + UV sensor for rear cameras
 - Launched MEMS pressure sensor for smartphone

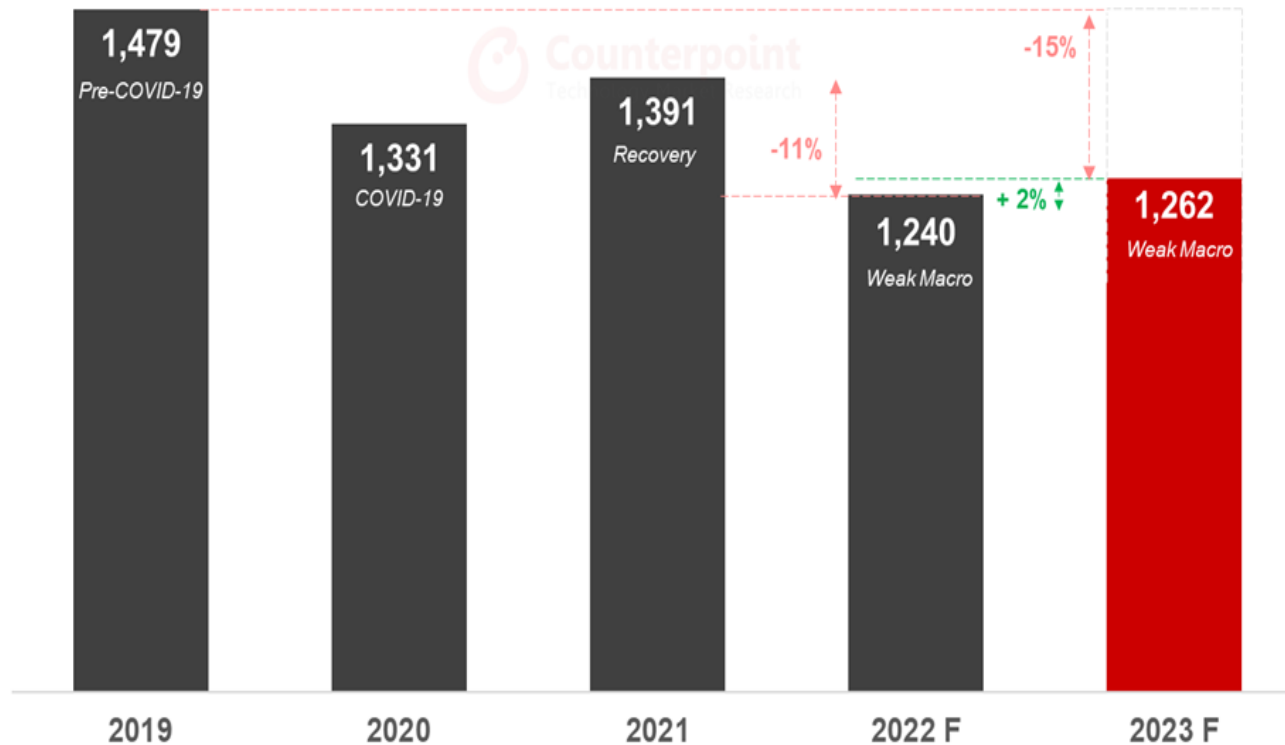
2021: 三種感測晶片投入手機應用

We are developing high-performance products and moving to high-end



II. 市場概況

全球智慧型手機銷量預估

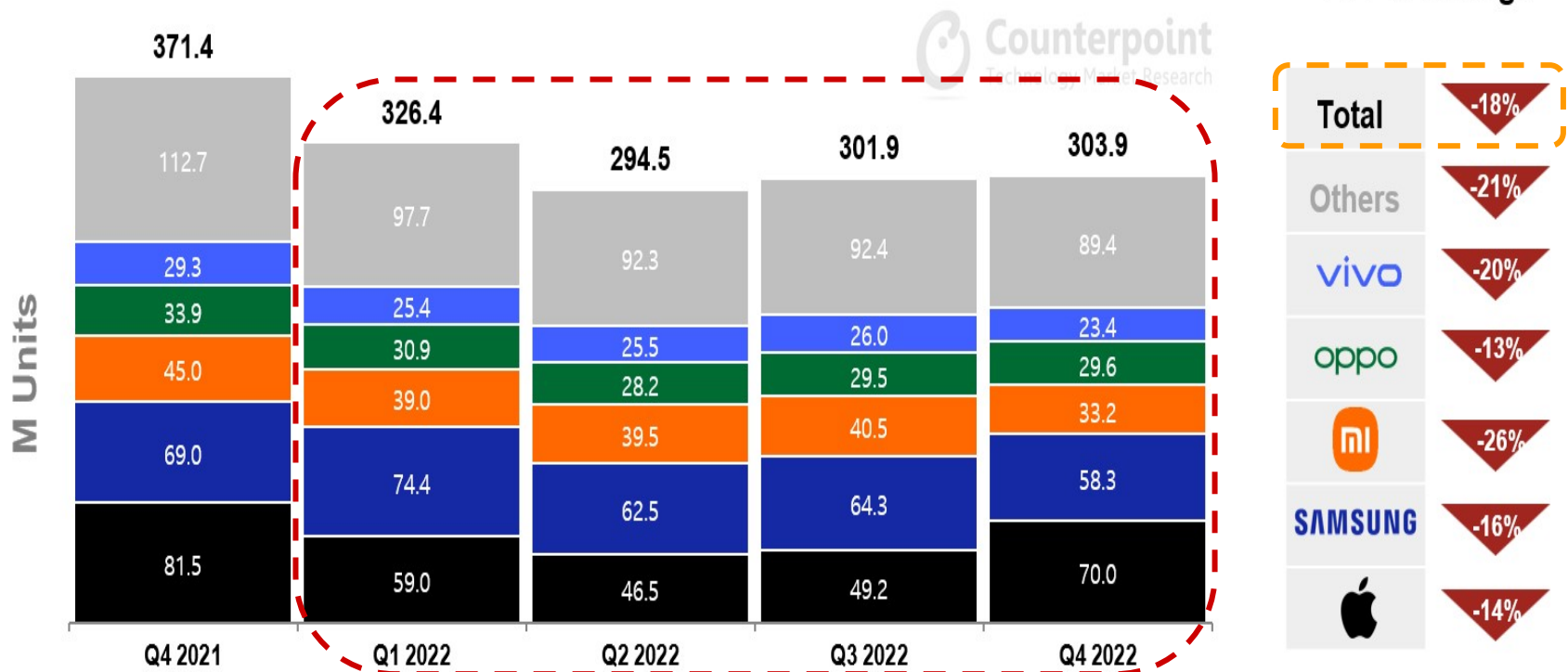


Source: Counterpoint Smartphone Market Outlook, Nov 2022

全球智慧型手機銷量

Quarterly Global Smartphone Shipments by Key OEM

Q4 2022 Vs Q4 2021
YoY % Change



Source: Counterpoint Research Quarterly Market Monitor Prelim data, Q4 2022

Note: OPPO includes OnePlus since Q3 2021



III. 公司產品

光學感測晶片 → 手機顯示屏應用

Optical sensor for displays :

Proximity Sensors (PS)

近接感測晶片 → 關屏防誤觸
turns off the display (anti-touch)

Ambient Light Sensors (ALS)

環境光感測晶片 → 調節螢幕亮度

... screen brightness control

G1: PS + ALS 2-in-1 visible solution (2010)

G2: PS + ALS 2-in-1 invisible solution (2018)

- Under-display 屏下方方案 for AMOLED displays
- Slit type 狹縫方案 for TFT displays

Color temperature Sensors (RGB)

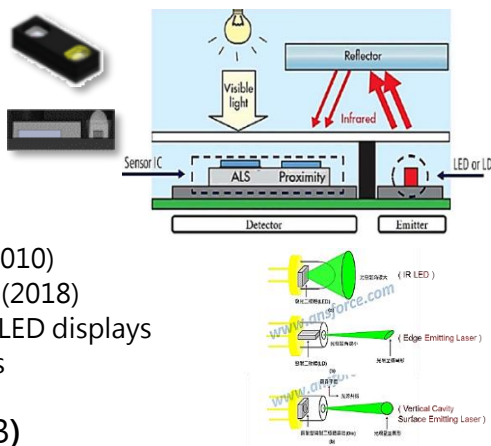
色溫感測晶片 → 調節螢幕色溫

... screen color temperature control

G3: PS + RGB sensors (2019)

G4: PS + RGB sensors (2021)

- Slit type & under display
- for better reading experience



Waterdrop Screen

狹縫(Slit) ALS/PS
狹縫(Slit) PS / 屏下 ALS
前置 ALS/PS
(Aside of Front Facing Camera)



Bezel-less Screen

屏下(Under-display) ALS/PS
狹縫(Slit) PS / 屏下 Under-display ALS



附件照片僅供示意參考
For illustration purposes only.

Sensitivity upgrades → ASP Boosts
(感度提升 → 價格提升)

G2: PS + ALS invisible solution

→ 6x (2020) → 10x (2021) → 15x (2022 MP) → 20x under development

- under display solution for AMOLED screen → multi emitter solution or enhance Rx PD sensitivity solution
- white spot reduce solution for AMOLED screen → multi emitter solution or InP (1300nm) PS+ALS solution

G4: PS + RGB invisible solution → 2022 MP ...

光學感測晶片 → 手機後相機應用

Optical sensor for Cameras :

3ch RGB sensor (2021 MP)

色溫感測晶片 → 協助後相機白平衡校正
white balance correction

Flicker detection sensors (2021 MP)

閃頻偵測晶片 → 協助消除光源物理閃爍
Flicker detection

→ Flicker + UV detection (ready for MP)



3ch RGB sensor :

Camera RGB sensors are used for **white balance correction**.

Different light sources come with different color temperatures, which can create unrealistic color casts in photos. White balance is the process of removing such color casts so that objects that appear white in person are rendered white in the photo..

環境中充斥著各種不同的光線，這些光線有著不同的色溫，因此手機數位相機在進行拍照時，需要對這些光線進行校正，才能呈現出正常的白色。依據 RGB色溫感測器、影像感測器所測量的色溫來自動校正調整白平衡。



Flicker detection sensors :

Detects the 50 Hz or 60 Hz flickers produced by incandescent or fluorescent lights. Helps eliminate the streaks and distortion effects caused by the flickering.

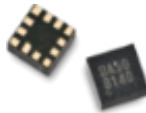
檢測環境中由白熾燈或螢光燈所產生的50Hz或60Hz光源物理閃爍。協助手機攝像頭之圖像系統消除人造光源的閃爍而出現的條紋和失真效果。

微機電MEMS感測晶片

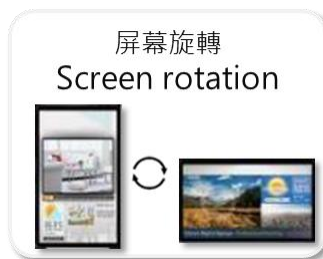
Accelerometers (G-sensors)

Rotation detection

加速度感測器 → 偵測屏幕旋轉方向



- ✓ G-sensors for smartphones
- ✓ Low power g-sensors for wearable & IoT devices



Barometric pressure sensor -- ready for MP

Atmospheric pressure detection

大氣壓力感測器 → 海拔高度(水深)感測

Gyroscope sensor -- under development

Angular Momentum detection

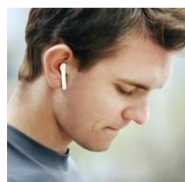
角動量感測器 → 方向感測與方向維持應用

光學感測晶片 + 微機電感測晶片 穿戴裝置與非手機領域應用

True wireless stereo (TWS) earbuds

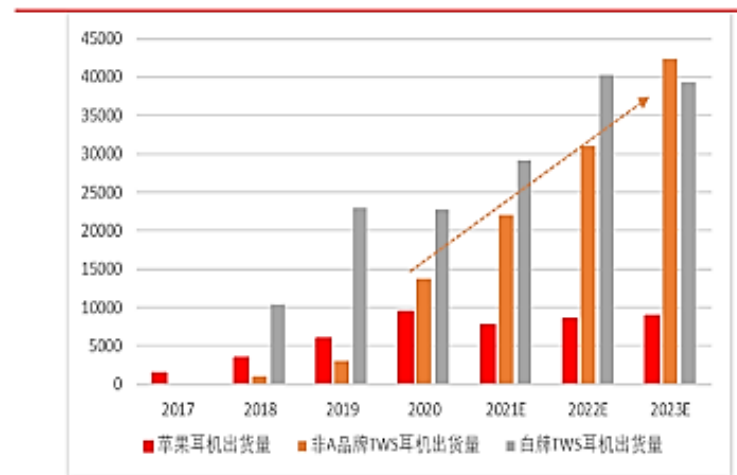
Accelerometers → click detection 敲擊偵測

Proximity sensors → on/off switch 功能啟用開關



敲擊偵測 Click detection

- 有來電時 Incoming call
單擊接聽 Click to answer
雙擊拒接 Double click to reject
- 音樂播放 Music mode
單擊暫停 Click to pause
雙擊換曲 Double click to switch



Smart watches & fitness trackers

Accelerometers → motion detection 移動偵測

Optical sensors → heartbeat detection 心律偵測 & UV sensors



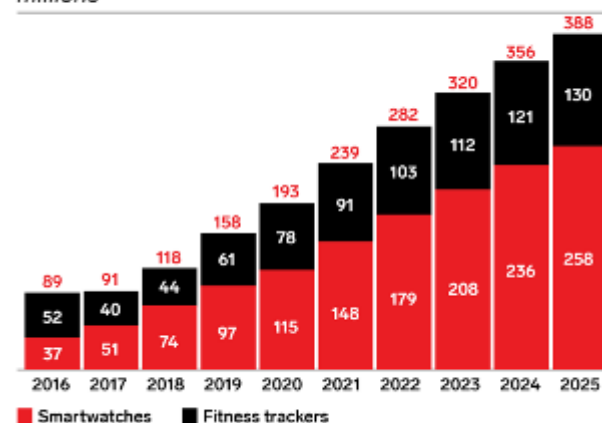
抬手亮屏 / 動態心率輔助
Heartbeat detection



睡眠偵測 / 久坐提醒
Sleep quality monitoring



Smart Wearable Device Shipments Worldwide, Smartwatch vs. Fitness Tracker, 2016-2025
millions

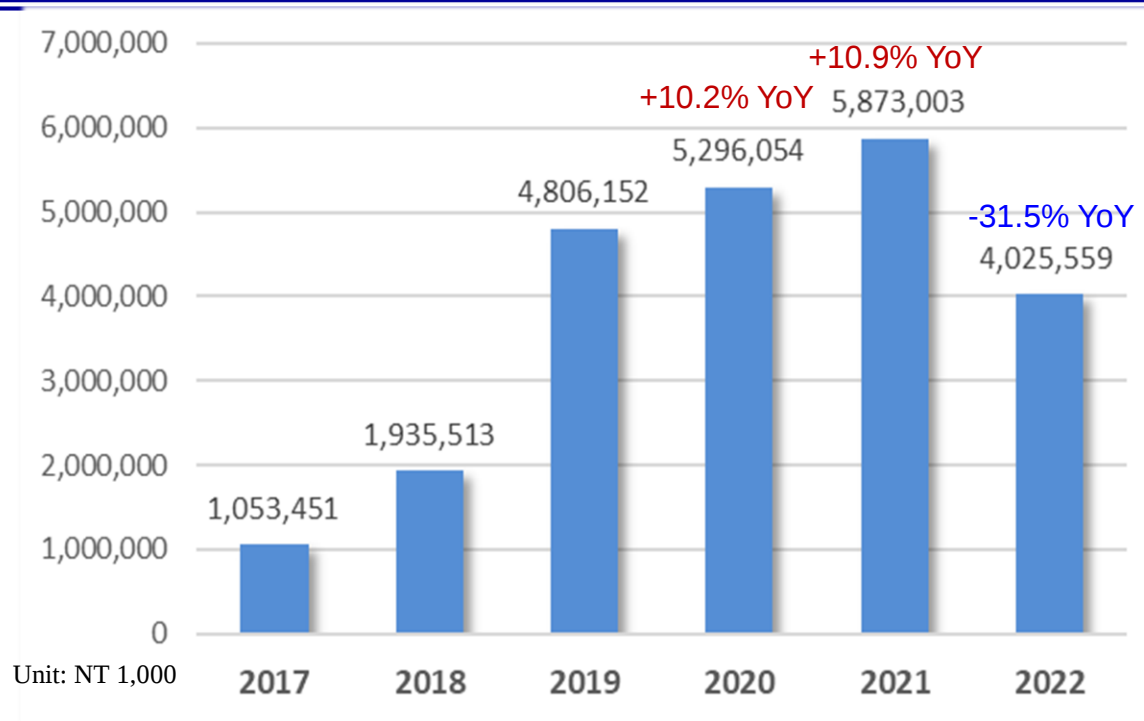


參考附件僅供示意參考
For illustration purposes only.

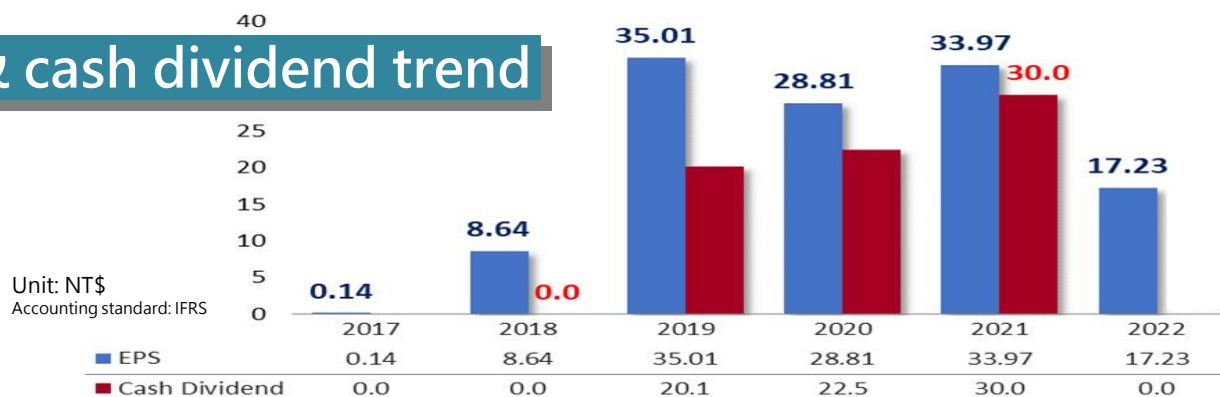
Note: numbers may not add up to total due to rounding
Source: CCS Insight as cited in press release, Feb 24, 2021

IV. 經營實績

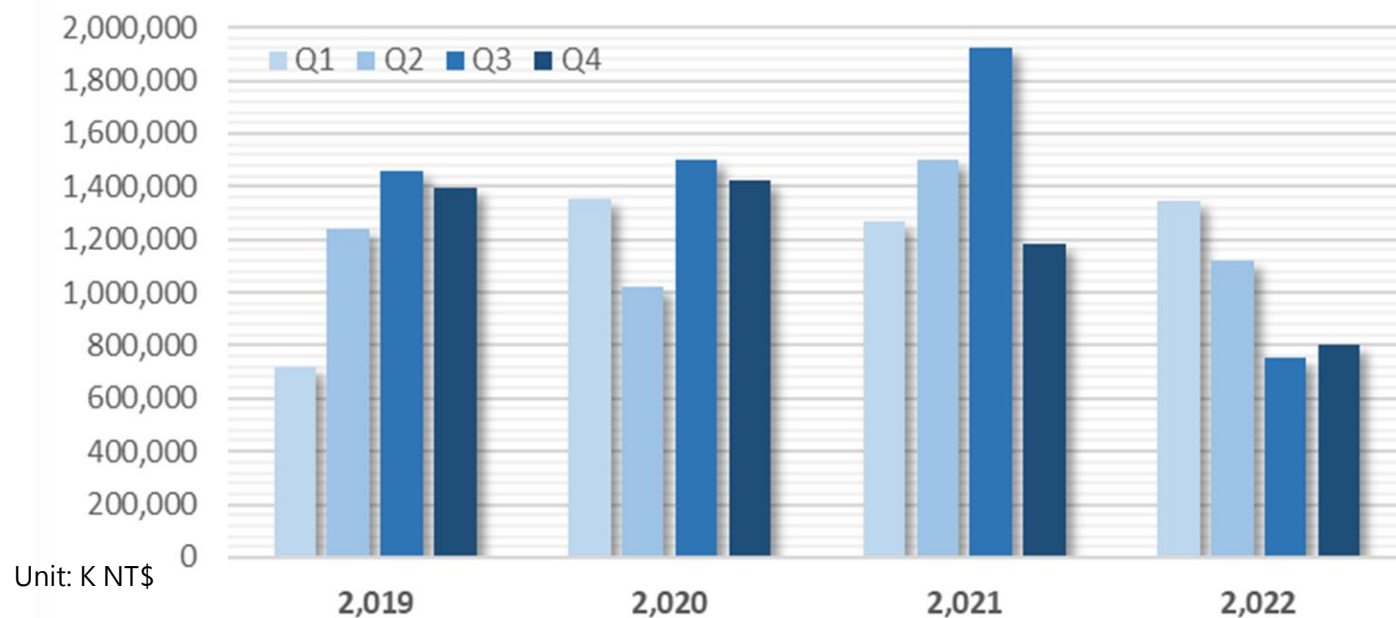
經營實績 - 年度



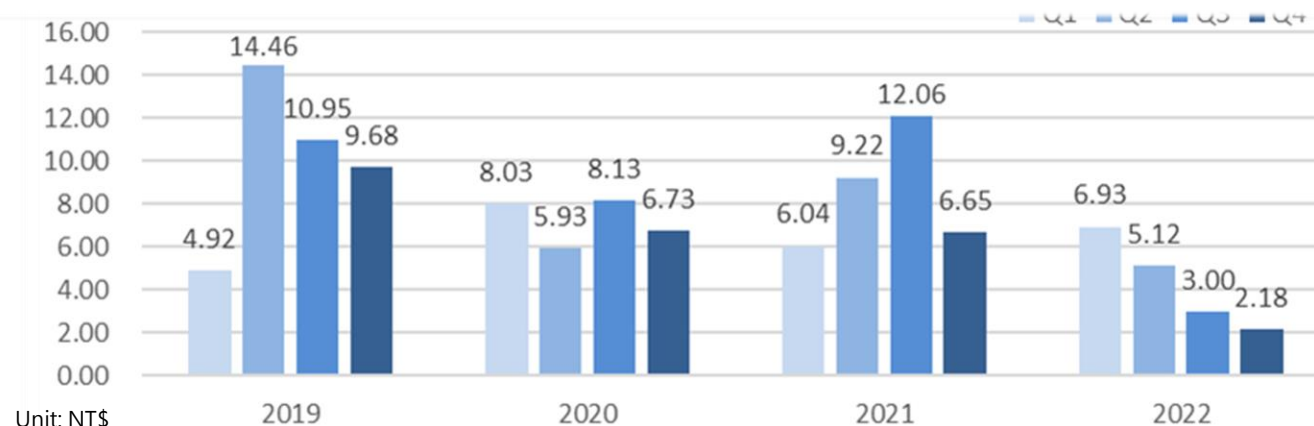
EPS & cash dividend trend



經營實績－季度

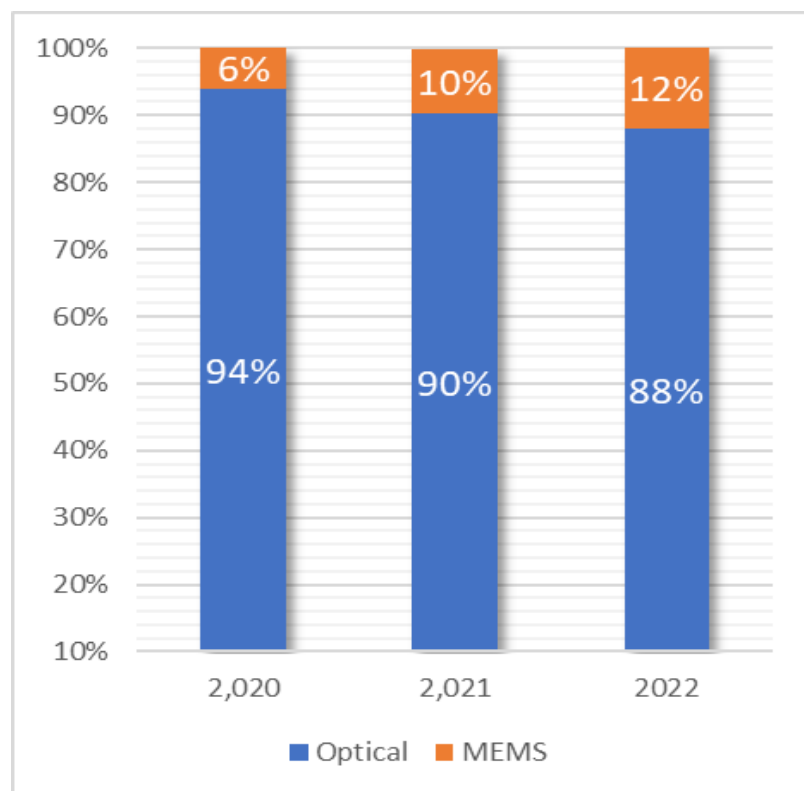


Quarterly EPS

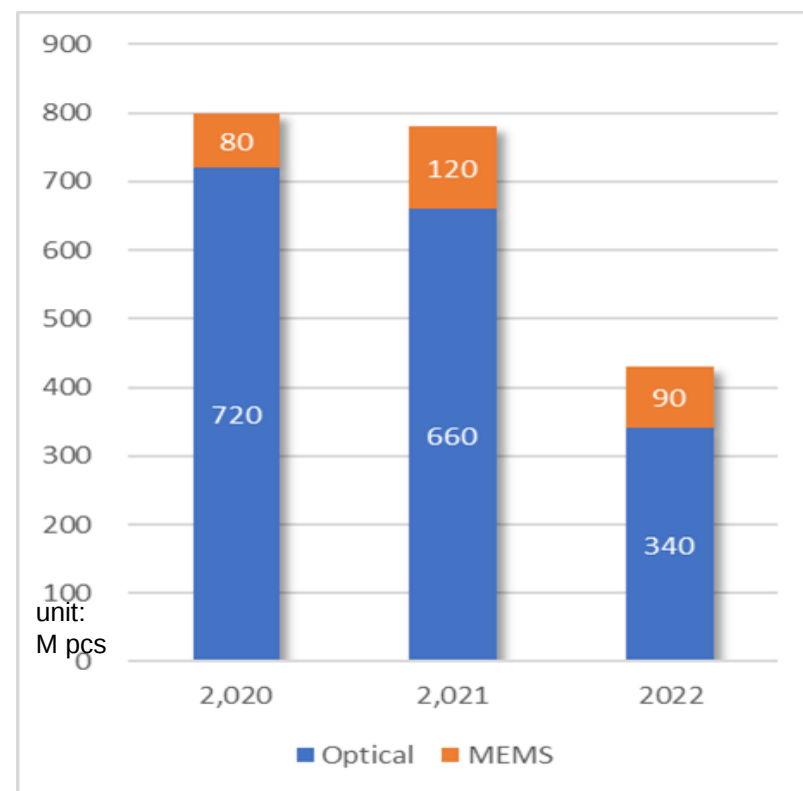


產品組合比率

product mix - sales contribution



product mix - shipment



損益表

Item	Q3 22		Q2 22		Q1 22		Q1~Q3 22		Q3 21		Q1~Q3 21	
	Results	% of sales	Results	% of sales	Results	% of sales	Results	% of sales	Results	% of sales	Results	% of sales
Net Sales	755,871	-	1,120,789	-	1,348,773	-	3,225,433		1,925,603	-	4,692,621	-
Gross Profit	267,083	35%	472,805	42%	573,143	42%	1,313,031	41%	921,187	48%	2,158,404	46%
Operating Expense	150,315	20%	184,371	16%	192,467	14%	527,153	16%	241,225	13%	608,378	14%
Operating Income	116,773	15%	288,439	26%	380,681	28%	785,893	25%	680,546	35%	1,550,619	33%
Income before Tax	164,861	22%	300,850	27%	411,907	30%	877,618	28%	702,069	36%	1,589,236	33%
Net Income*	146,952	20%	250,480	22%	339,146	25%	736,578	24%	589,738	30%	1,336,223	29%
EPS	3.00		5.12		6.93	-	15.06		12.06	-	27.32	-

Unit: NT\$ thousands (except EPS)

Accounting standard: IFRS

* Listed on the English translation of our financial statements as
"Profit (loss), attributable to owners of parent"

資產負債表

Item	2022/9/30	2022/6/30	2022/3/31	2021/12/31	2021/9/30
Total Assets	5,888,541	6,044,244	7,790,405	7,220,887	6,973,430
Current Assets	4,331,616	4,521,772	6,341,047	5,817,181	5,628,478
Cash & Equivalents	1,872,258	1,814,430	2,227,118	1,975,445	2,338,478
AR	431,232	550,799	1,005,550	774,850	814,803
Inventory	1,185,459	1,020,337	771,698	678,295	413,657
Total Liability	1,528,023	1,819,711	3,769,979	2,063,124	2,168,520
AP	536,140	858,760	827,740	849,328	914,921
Shareholder Eqt.	4,360,518	4,224,533	4,020,426	5,157,763	4,804,910

Unit: NT\$ thousands
Accounting standard: IFRS

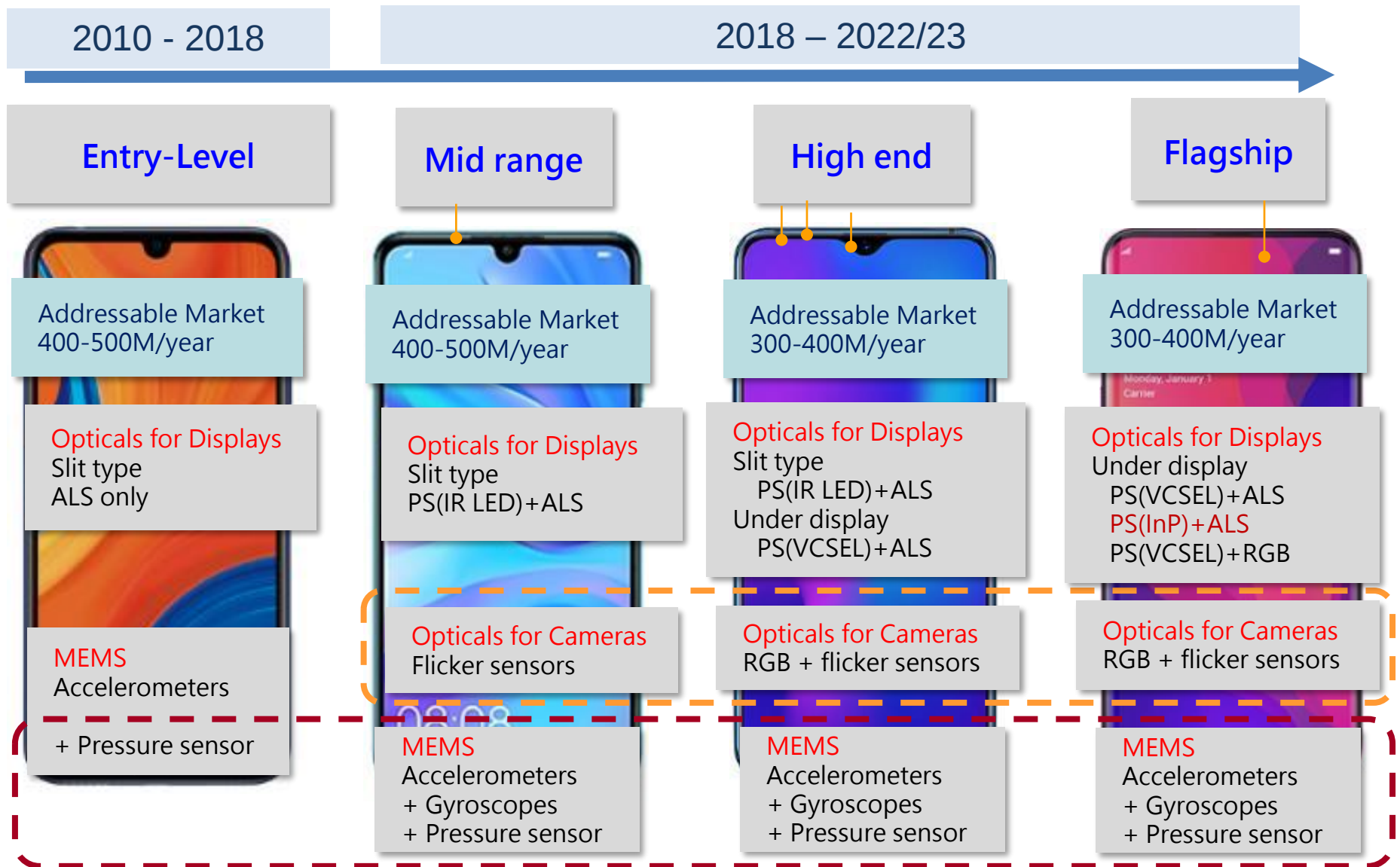
V. 未來發展

敬請期待

More than 20 sensors built in high-end smartphones



展望2022-2023



新產品進度

1. Optical sensor for smartphone screens :
 - a. x20 High sensitivity PS+ALS for high-end AMOLED models ..ready for MP
 - b. G4 PS+RGB sensor for high-end smartphone ..MP
2. Optical sensor for smartphone rear Cameras :
 - a. RGB sensors → white balance correction in high-end smartphone ..MP
 - b. flicker + UV sensors → for high-end smartphone ..ready for MP
3. MEMS sensors in smartphone :
 - a. Pressure sensor → for wearable devices & smartphone market ..ready for MP
 - b. SAR sensor → for smartphone radiation control ..MP
 - c. Gyroscope sensors → for mid-to-high-end smartphones ..under development



謝謝

Investor Relations Officer
Tom Huang 黃英記
+886-3-5601000 ext 2255
Tom_huang@sitronix.com.tw

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昇佳電子股份有限公司