

**SUNON®**

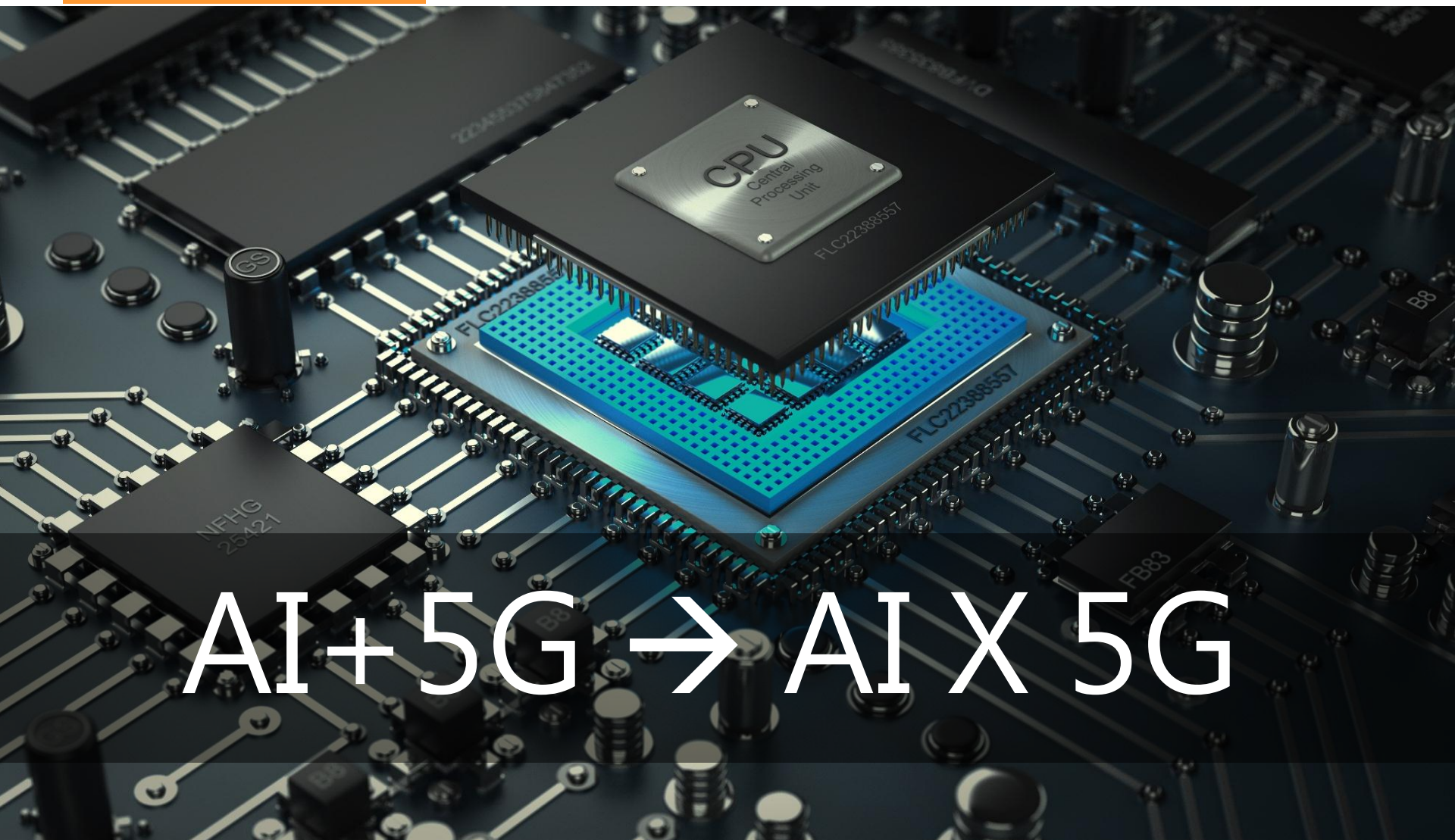
# 免責聲明

本簡報是建立於本公司從各項來源所取得之資訊。有些資訊可能受未來不確定性因素影響，致使與原先本公司對於未來前景的說明迥異。未來若有變更或調整時，請以公開資訊觀測站公告資訊為依據。

(<http://mops.twse.com.tw/mops/web/index>)

# 散熱需求 無所不在

AI 技術與5G 高速網路的發展，實現萬物智能萬物相連的可能，各種裝置紛紛變裝成智能聯網的電子產品，迅速普及深入產業與生活，同時帶動大量的散熱需求。

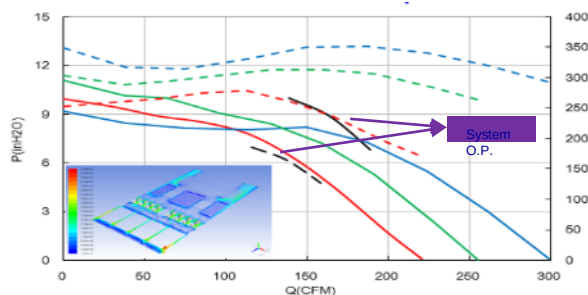


AI+5G → AI X 5G

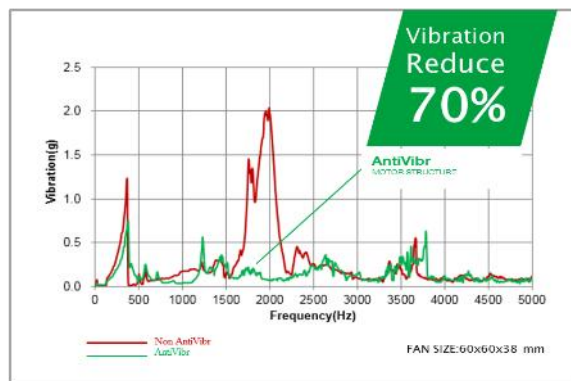
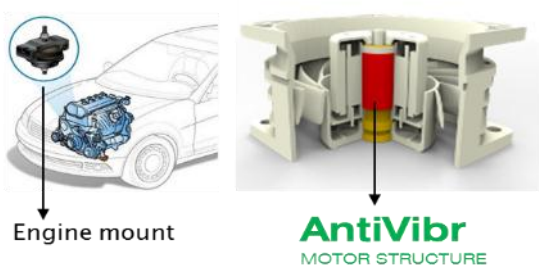
# 散熱技術 與時俱進

未來世界由強大計算能量與高可靠的高速網路支撐，考驗系統的散熱方案極限；迫使散熱技術不段精進升級，以即時支援系統的運算，提供最佳運作溫度控制，展限極致效能。

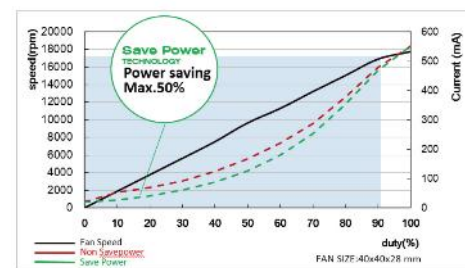
## High Fan Efficiency



## Low Vibration



## Energy Saving



Note: Compare to SUNON's conventional fan.

## Reliability

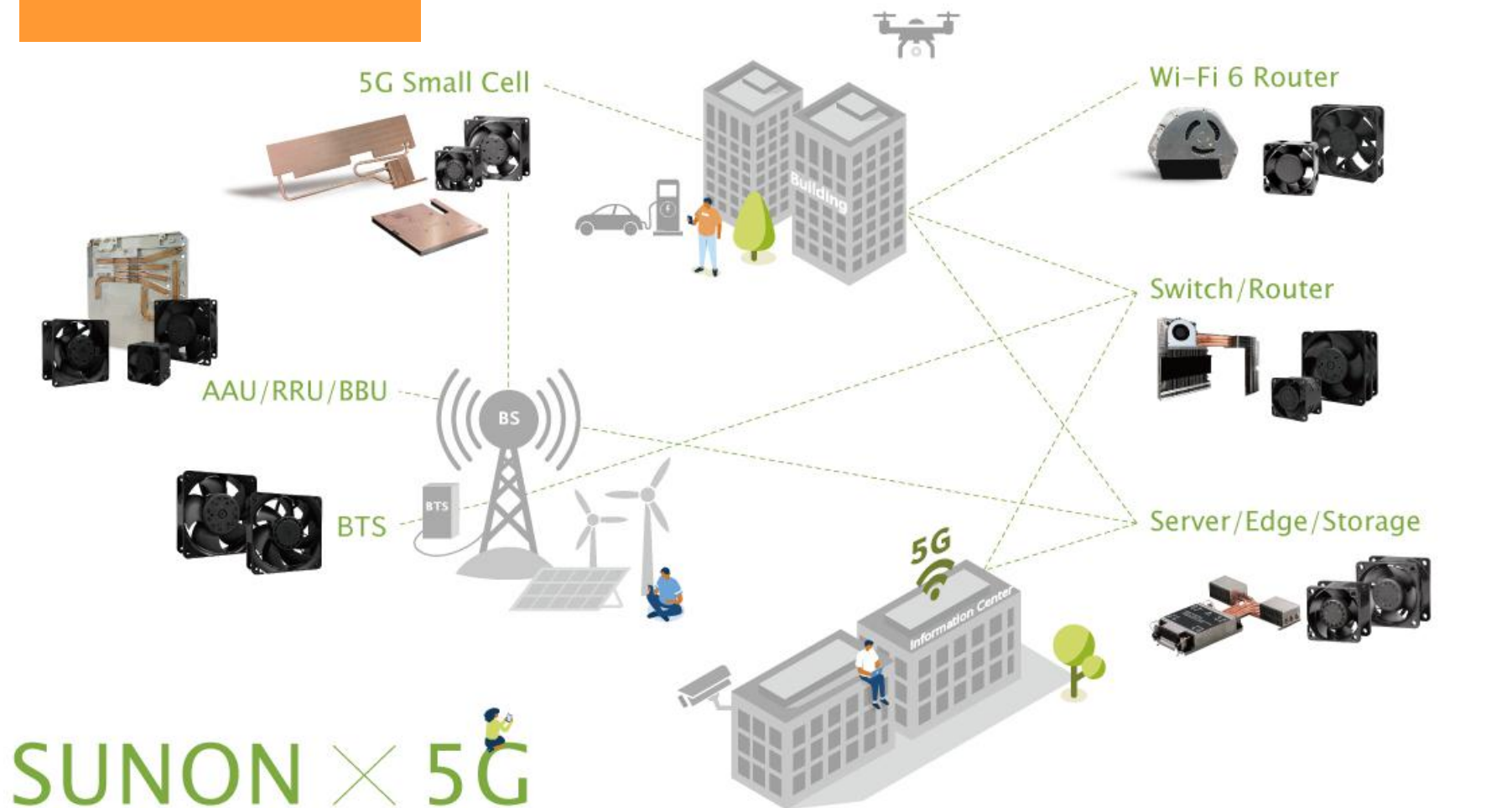
- Salt solution: 0.05 % NaCl + 0.35 % ammonia sulphate (Flow is reduced to 20% of a normal ASTM G85 test)
- Chamber temperature: 35° C
- Test cycles first 35 days: 15 min. spray/fog followed of 45 min. drying. 3 day with Salt solution 2 days demineralized water
- Test cycles after 35 days: 30 min. spray/fog followed of 30 min. drying. 3 day with Salt solution 2 days demineralized water
- Test duration: 40 days
- Fans are running during the entire test
- Fans are checked once a day
- If Fan stops:
  1. Try to start fan with finger
  2. "Exercise" with pressurized air
  3. "Dry out" Fan in 45° C oven for 24 Hours.



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# 5G 產業 散熱方案



SUNON × 5G

SUNON®

# 伺服器 散熱方案



圖片來源：網路圖片

# 5G 基站 散熱方案



## AAU / BBU / RRU

High-effective heat pipe module is integrated with the base to enhance a whole thermal solution's effectiveness.



Cooling Module

## DU / CU

Large-area vapor chamber module is used to increase thermal capacity that effectively dissipates heat in the systems.



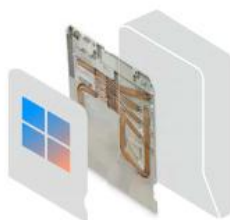
## BST / RBS

BTS/RBS cabinet door with fans installed increases the operating performance of BTS/RBS systems.



## SMALL CELL

The integration of cooling module and fan module creates thermally synergistic effects and therefore systems can operate effectively and smoothly.



System view





# 5G 網通 散熱方案



## SERVER STORAGE EDGE



Fan & Cooling Module

- Adopting cutting-edge thermal technologies such as AntiVib motor- and power-saving circuits ensures thermal effectiveness.
- Maximizes server system operation performance.



System View

## SWITCH ROUTRT



- Fan tray solution and various cooling components are suitable for switch and router use
- Increases the capacity of data transmission.



## WI-FI 6 ROUTER



- The best air cooling solution with high performance.
- Space utilization and maximal thermal effectiveness.



## 5G SMALL CELL



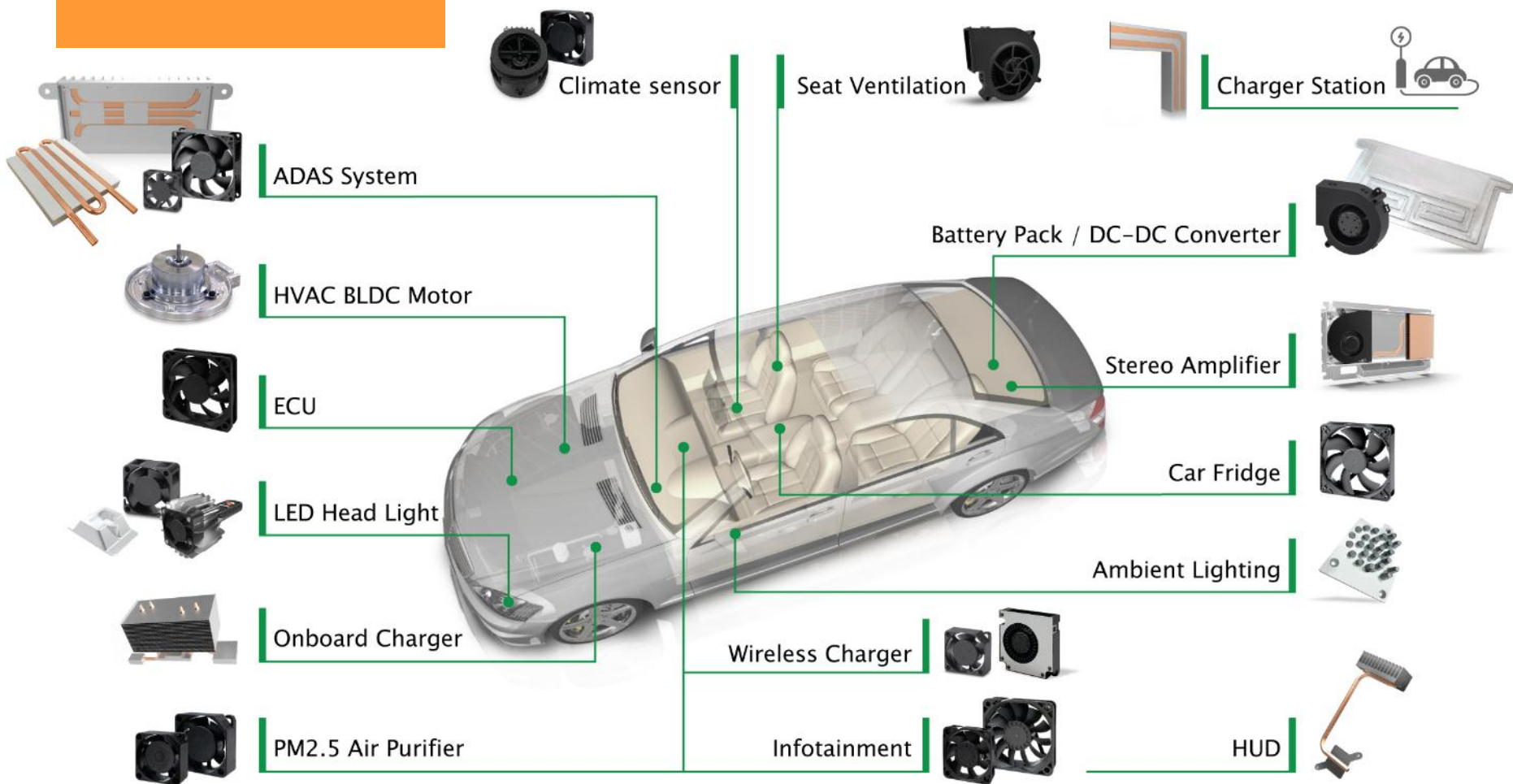
- High effective fan solution and a variety of configurations available.
- Customized designs such as IP protection for different thermal needs.



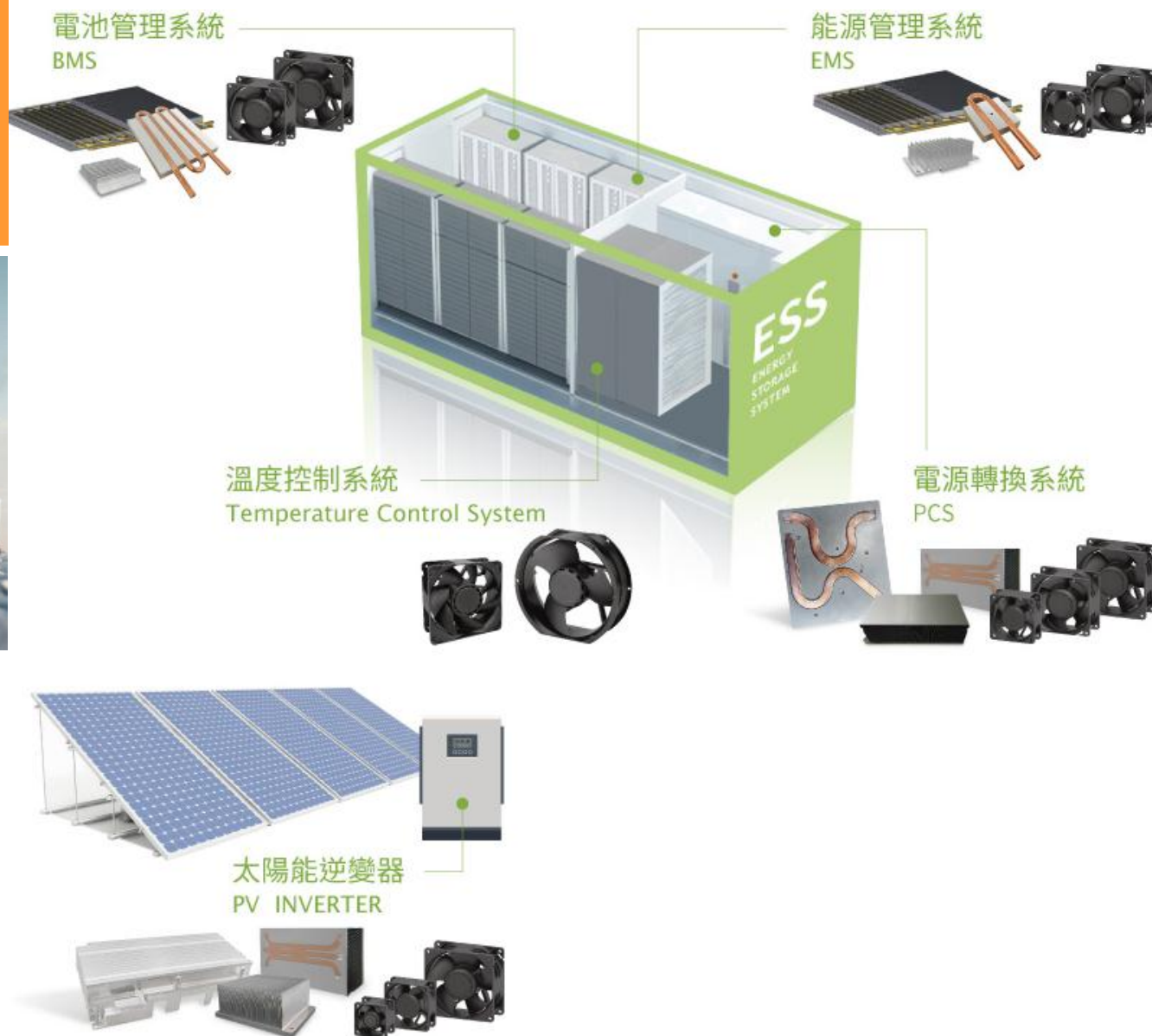
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# 汽車產業 散熱方案



# 再生能源 散熱方案



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# 42年

專注在節能馬達  
技術發明與創新

成 立 時 間



**1980**

員 工 人 數



(Taiwan)

(China)

**600 8500**

生 產 工 廠



(Taiwan)

(China)

**1 2**

2021 銷售額



NTD\$ **135.6** 億



Motor 0.1W  
Fan 8mm

80mm — 120mm — 250 mm — 3000mm — 7300mm

1500 Watts

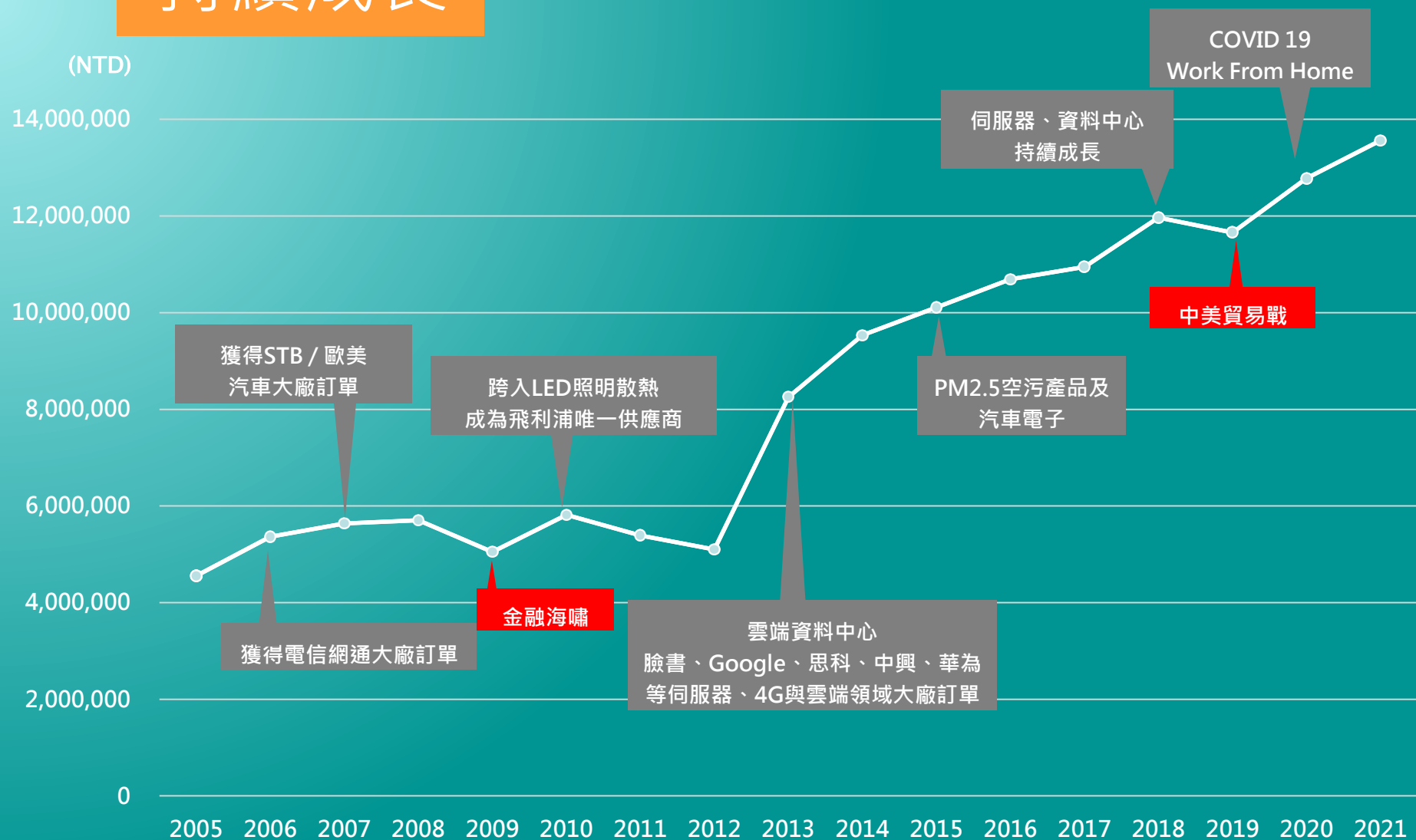
**The Smallest Fan 8 mm**

**HVLS Fan up to 7,300 mm**

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# 歷年營收 持續成長



# 建準研發 三塊論

馬達應用  
商品化

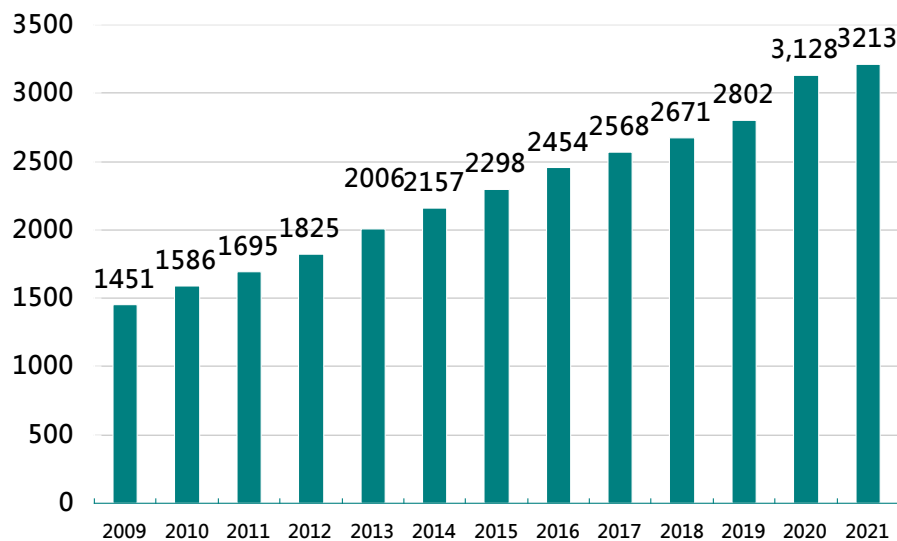


馬達發明  
應用材料的研究  
原材料開發與實驗

熱的全方位解決方案  
的設計模擬及驗證



建準累計專利件數



# 全球行銷 技術支援

**14**

子公司與辦事處

**114**

全球經銷代理商

**1000+**

全球銷售服務據點



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# 獨步全球的馬達核心技術

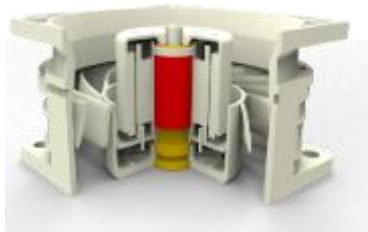
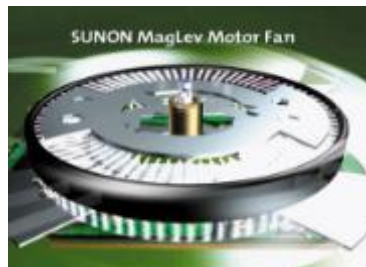
磁浮  
馬達系統

阻振  
馬達結構

超輕薄  
馬達

高效率  
馬達

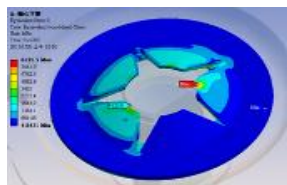
極靜音  
聲音品質工程



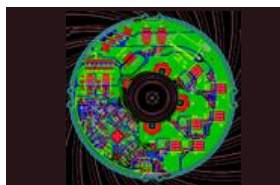
**SUNON®**



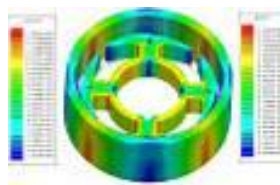
# 精準模擬分析 專業散熱方案



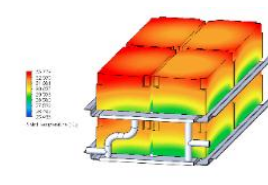
結構強度模擬分析



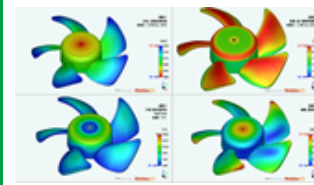
迴路模擬分析



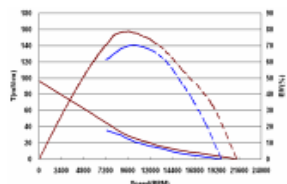
馬達磁路模擬分析



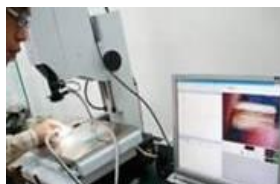
溫度熱流模擬分析



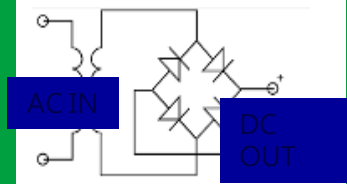
模流模擬分析



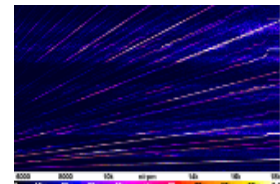
高效率馬達分析



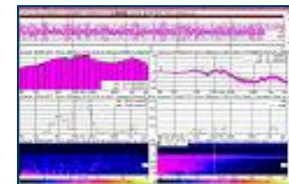
材料分析與研究



高壓直驅電源控制

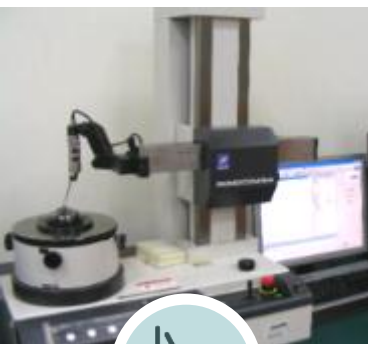


振動頻譜分析



聲音品質分析與研究

# 精確驗證實驗 品質安全可靠



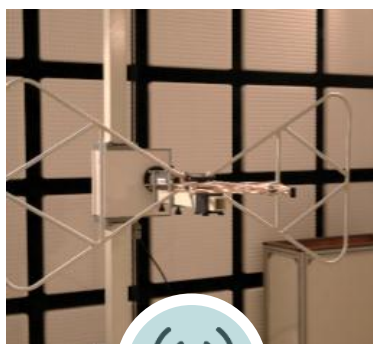
## 精密量測與材料分析

解決風扇系統的  
異音、振動、溫升等問題  
使得馬達系統更加穩定  
能有效提升風扇性能



## 音響性能實驗

透過德國量測系統(HMS)  
並經過Artemis軟體進行  
頻譜及心理聲學參數  
讓產品擁有悅耳的音質



## EMC/EMI電磁相容驗證

確保所有電子產品在運轉時  
能在同一個空間中都能  
正常運作而不互相干擾



## 產品可靠度驗證

從設計、試產到量產  
一系列嚴謹的測試驗證  
透過電腦自控驗證系統  
精確評估產品可靠度



## 安規測試認證

執行安規驗證測試與  
加速安規取證  
確保產品安全性  
讓客戶安心使用無虞

# 全方位散熱解決方案

## 風扇、馬達

### 通風散熱解決方案

馬達核心技術與微型風扇的發明創新，提供各尺寸細列風扇馬達產品，其優異性能創造出尺寸更具彈性化、更省電、更靜音、壽命更長的馬達風扇產品。



### 全面空氣淨化方案

秉承德國設計對工藝技術與極簡之美，創造居家良好空氣品質結合美學的全新體驗，讓家更清新舒適！



## 換氣扇、新風機

## 散熱模組

### 全方位解決方案

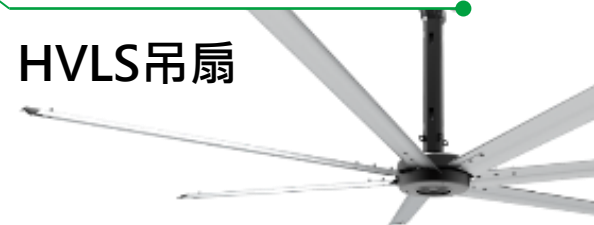
身為全球知名的散熱通風領導廠商，以39年的實務經驗和創新技術，致力於提供客製和整合的服務，輕鬆解決產品散熱的問題！



### 最適化通風方案

超薄型馬達驅動，節能省電，輕量化的外型時尚有型。葉片結合飛機級鋁製與專利尾翼設計，有效降低風阻和噪音，達到工業級的高效能，並有效降低室內溫度，讓體感溫度更舒適。

## HVLS吊扇



**SUNON  
Product**

**SUNON®**

# 豐沛產能 Capability

## 三個專業生產基地

風扇 20 M /月

散熱模組 1.5M/月



台灣高雄  
0.5M/月



江蘇昆山  
8M/月(FAN)  
1.5M/月(CM)



廣西北海  
11.5M/月



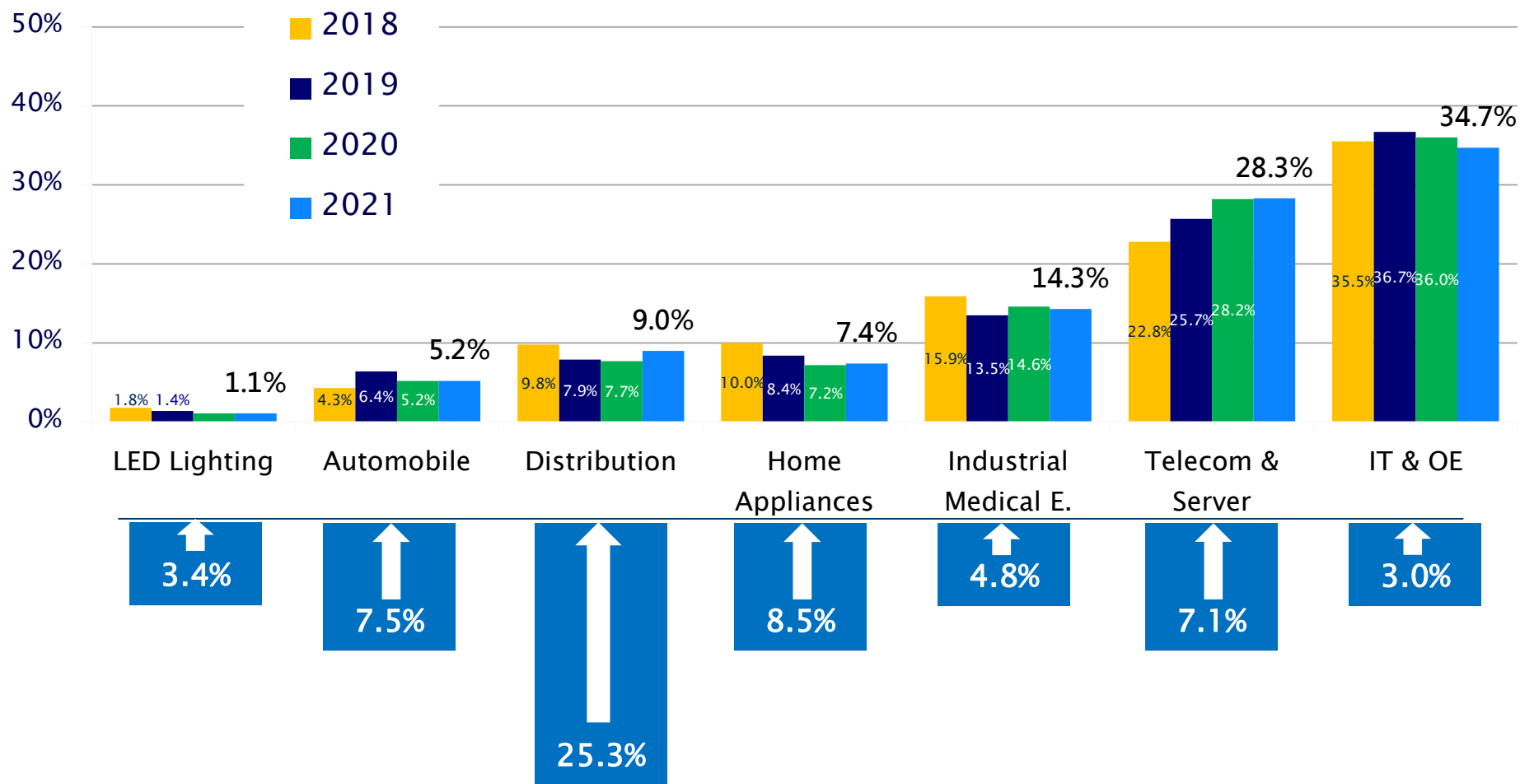
菲律賓,巴丹  
施工期 (計劃)  
2020 -2022\*



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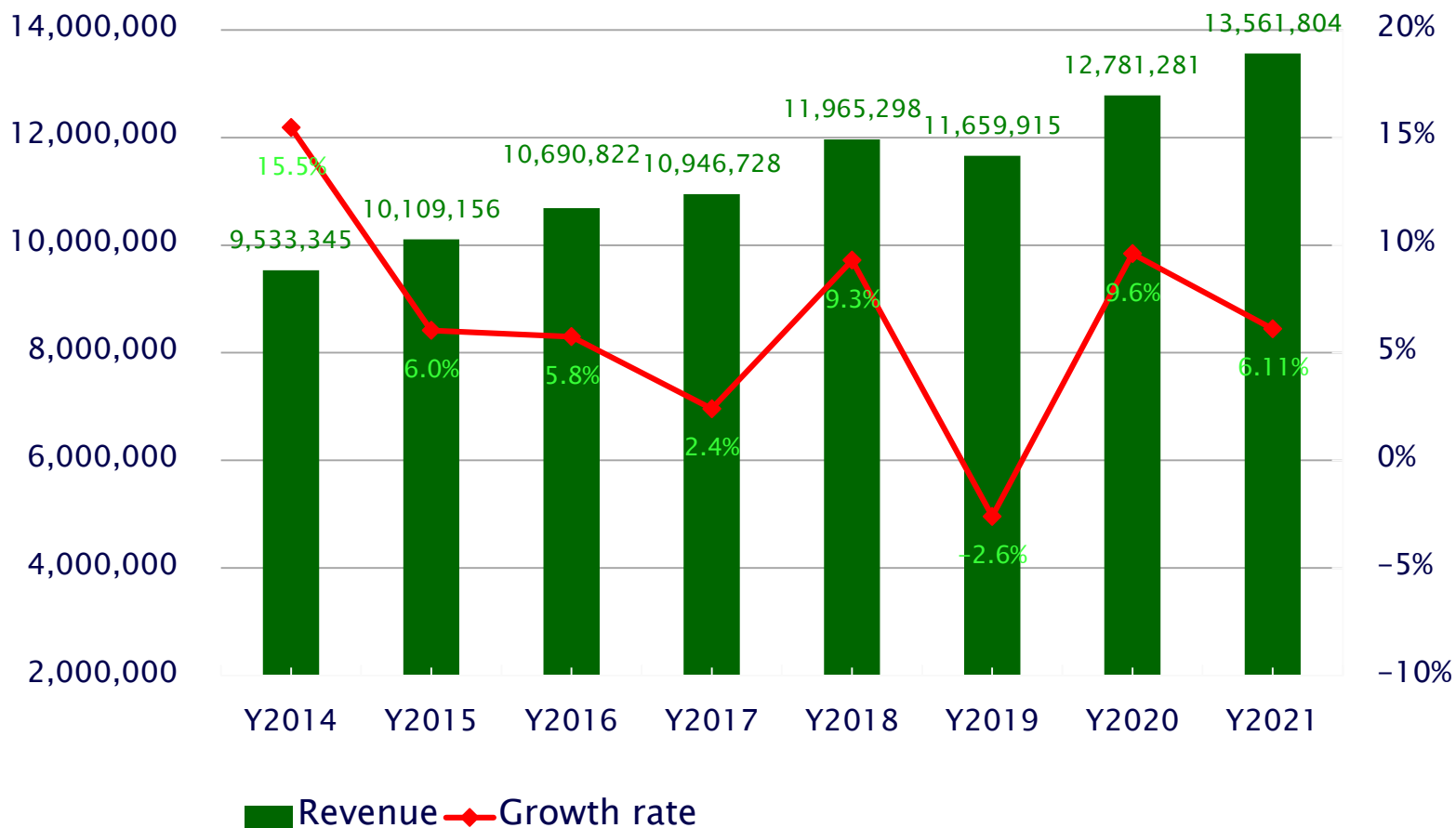


# 產品應用及年增率

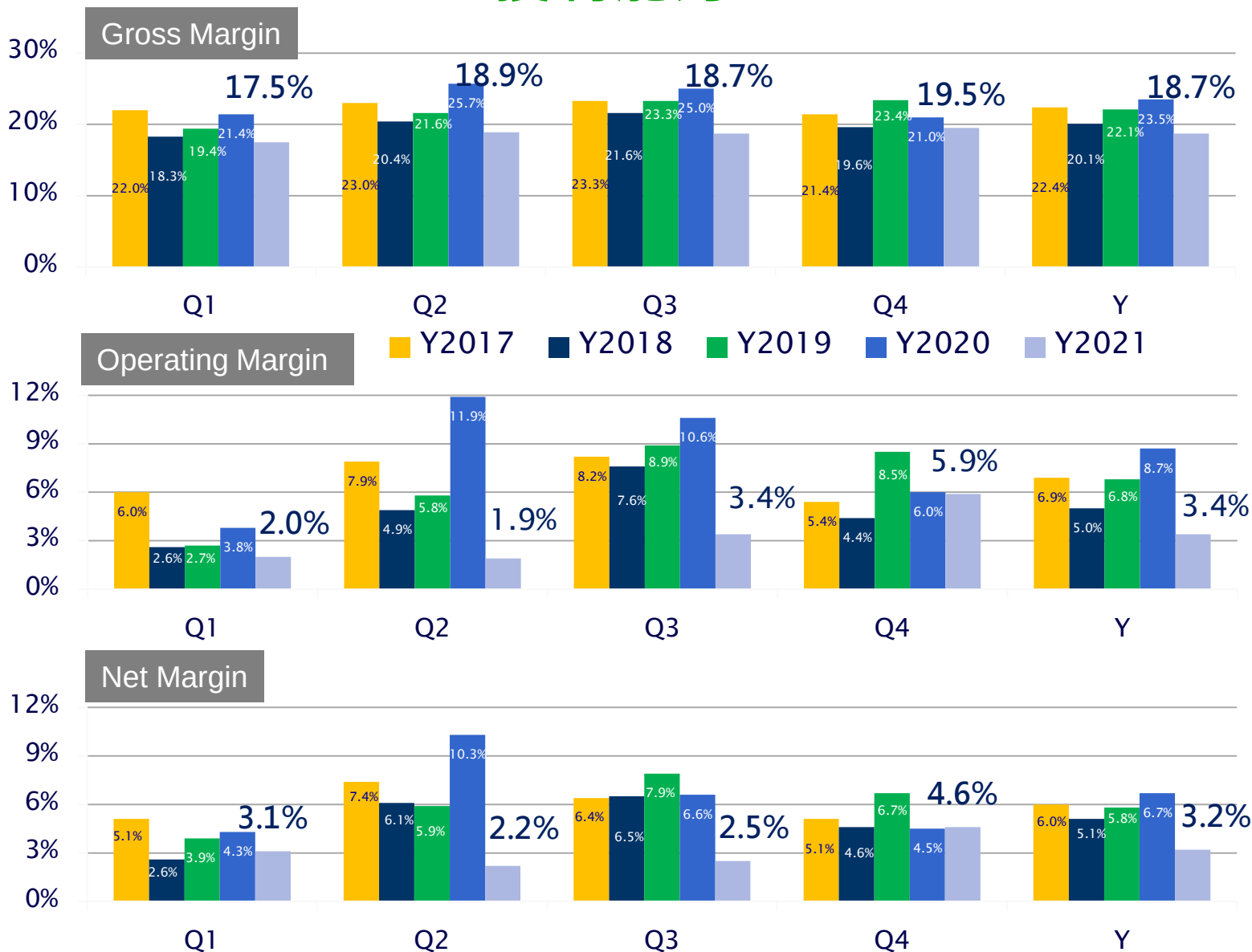


# 營收表現

UNIT: NTD (K)

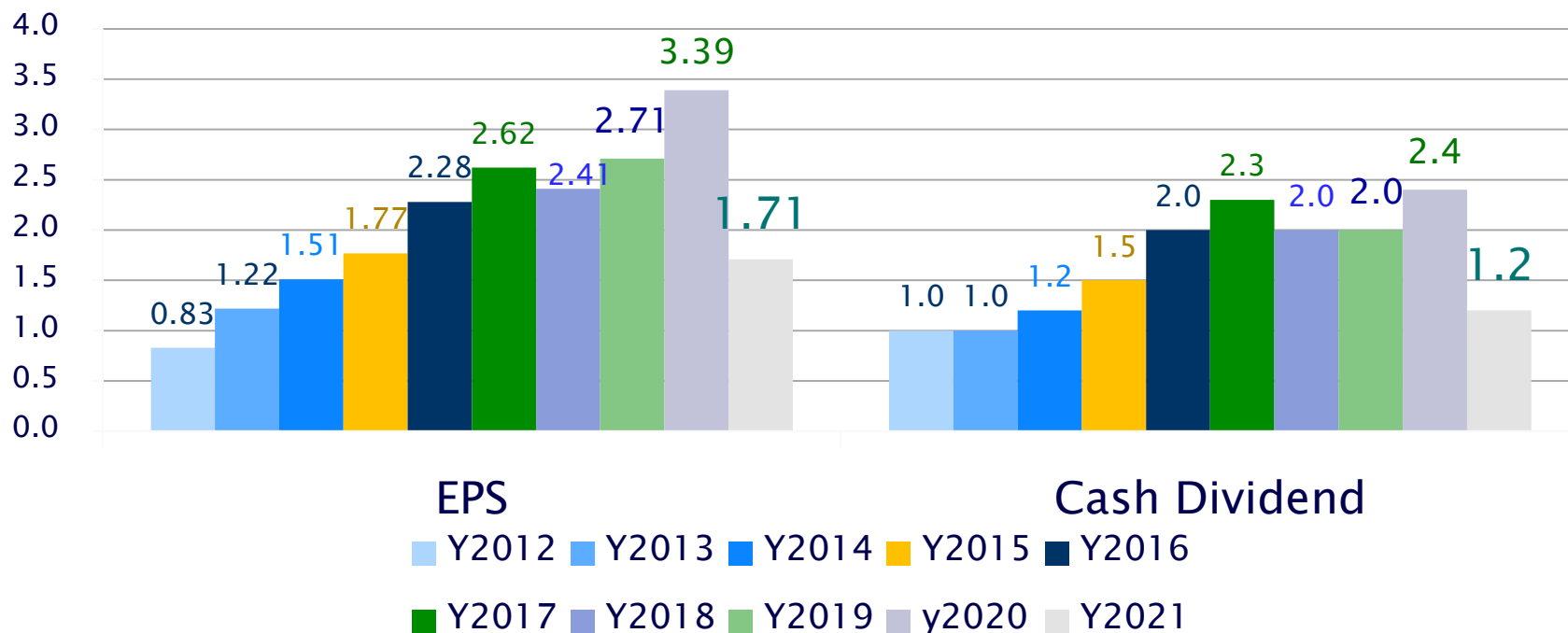


# 獲利能力



# 每股盈餘與現金股利

UNIT: NTD



|           | 2012    | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 2021   |
|-----------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Payout R. | 120.48% | 81.97% | 79.47% | 84.75% | 87.72% | 87.79% | 82.99% | 73.80% | 70.80% | 70.18% |



# 產品發展

止推動壓  
軸承架構開發

高運算系統  
水冷系統

抗重力低熱阻  
散熱模組開發

自我健康  
風扇開發

5G基站散熱  
裝置開發

車載系統  
散熱裝置

# 成長動能

Server



5G  
Base Stations



Metaverse



Electric  
car



Renewable Energy



Industry 4.0  
Inverter / Drive



Industrial  
Ventilation



Air Purifier  
UVC Solution



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Environmental  
Social  
Governance

## 品牌、創新、價值 實現 企業永續 環境永續 願景



產品研發節能績效共

節能省電**2.48億度**

減少**1.26億**公斤 CO2



合併營收 **135.6**億元，較2020年增加**6.1 %**

合併稅後EPS **1.71**元

業界市佔率為**全球前3大領導品牌**

專利件數累計**3,213 件**

女性董事占董事席位**1/3**



員工教育訓練**超過15小時/每人每年**，員工滿意度**4.67分** (滿分5分)

聘用身心障礙員工人數**超越法規規範1.6倍**

「勵志關懷活動」累計**弱勢關懷家庭 7,699 戶** (2018-2021年)

# 附錄一：合併資產負債表

| CONSOLIDATED BALANCE SHEETS |              |              |              |               |               |               |              |               |               |
|-----------------------------|--------------|--------------|--------------|---------------|---------------|---------------|--------------|---------------|---------------|
| NT\$ M                      | 2017         | 2018         | 2019         | 2020          | 2021          | Growth YOY(%) |              |               |               |
|                             |              |              |              |               |               | 2018          | 2019         | 2020          | 2021          |
| <b>TOTAL ASSETS</b>         | <b>8,813</b> | <b>8,972</b> | <b>9,439</b> | <b>10,419</b> | <b>11,517</b> | <b>1.80%</b>  | <b>5.21%</b> | <b>10.38%</b> | <b>10.54%</b> |
| Cash                        | 1,387        | 1,145        | 1,271        | 1,575         | 1,912         | -17.45%       | 11.00%       | 23.92%        | 21.40%        |
| A/R, N/R                    | 2,724        | 3,091        | 3,323        | 3,226         | 3,459         | 13.47%        | 7.51%        | -2.92%        | 7.22%         |
| Inventories                 | 1,744        | 1,794        | 1,519        | 1,752         | 2,508         | 2.87%         | -15.33%      | 15.34%        | 43.15%        |
| PP&E                        | 2,294        | 2,378        | 2,277        | 2,106         | 2,059         | 3.66%         | -4.25%       | -7.51%        | -2.23%        |
| <b>TOTAL LIABILITIES</b>    | <b>4,639</b> | <b>4,832</b> | <b>5,211</b> | <b>5,825</b>  | <b>7,150</b>  | <b>4.16%</b>  | <b>7.84%</b> | <b>11.78%</b> | <b>22.75%</b> |
| Short-term loans            | 636          | 843          | 927          | 671           | 1,950         | 32.55%        | 9.96%        | -27.62%       | 190.61%       |
| A/P                         | 2,550        | 2,671        | 2,705        | 2,823         | 2,926         | 4.75%         | 1.27%        | 4.36%         | 3.65%         |
| Long-term loans             | 320          | 220          | 220          | 520           | 524           |               |              | 136.36%       | 0.77%         |
| <b>TOTAL EQUITY</b>         | <b>4,174</b> | <b>4,139</b> | <b>4,229</b> | <b>4,594</b>  | <b>4,367</b>  | <b>-0.84%</b> | <b>2.17%</b> | <b>8.63%</b>  | <b>-4.94%</b> |
| Days sales outstanding      | 93           | 89           | 100          | 94            | 90            |               |              |               |               |
| Days sales of inventory     | 67           | 68           | 67           | 61            | 70            |               |              |               |               |
| Current Ratio               | 1.4898       | 1.4247       | 1.4272       | 1.4984        | 1.3448        |               |              |               |               |

## 附錄二：合併綜合損益表

| CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME |        |        |        |        |        |               |        |        |         |
|------------------------------------------------|--------|--------|--------|--------|--------|---------------|--------|--------|---------|
| NT\$ M                                         | 2017   | 2018   | 2019   | 2020   | 2021   | Growth YOY(%) |        |        |         |
|                                                |        |        |        |        |        | 2018          | 2019   | 2020   | 2021    |
| OPERATING REVENUES                             | 10,947 | 11,965 | 11,660 | 12,781 | 13,562 | 9.30%         | -2.55% | 9.61%  | 6.11%   |
| GROSS PROFIT                                   | 2,454  | 2,402  | 2,579  | 2,998  | 2,536  | -2.12%        | 7.37%  | 16.25% | -15.41% |
| INCOME FROM OPERATIONS                         | 756    | 602    | 787    | 1,114  | 464    | -20.37%       | 30.73% | 41.55% | -58.35% |
| INCOME BEFORE INCOME TAX                       | 842    | 784    | 910    | 1,088  | 585    | -6.89%        | 16.07% | 19.56% | -46.23% |
| NET INCOME attribute to owners                 | 657    | 605    | 681    | 852    | 429    | -7.91%        | 12.56% | 25.11% | -49.65% |
| EPS (NT\$)                                     | 2.62   | 2.41   | 2.71   | 3.39   | 1.71   |               |        |        |         |
| Gross Margin                                   | 22.42% | 20.08% | 22.12% | 23.46% | 18.70% |               |        |        |         |
| Operating Margin                               | 6.91%  | 5.03%  | 6.75%  | 8.72%  | 3.42%  |               |        |        |         |
| Net Margin(*)                                  | 6.00%  | 5.06%  | 5.84%  | 6.67%  | 3.16%  |               |        |        |         |

(\*)Net Margin=Net Income attribute to owners / Revenue





# Thanks

for Your Attention !



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