

Chang Wah Technology Co., Ltd.

(6548.TW)

September, 2020

Outline :

- I 、 CWTC Introduction – worldwide No. 2 lead frame manufacturer
- II 、 Growth Momentum
- III 、 QFN Market
- IV 、 Future Vision – worldwide No. 1 QFN lead frame manufacturer
- V 、 Q&A and Appendix

I、CWTC Introduction

Plant Location



China

- SHEC , Chengdu, 1989
- SHPC , Chengdu, 2008
- SHS , Suzhou, 2004



Taiwan

SHT , Kaohsiung, 1994

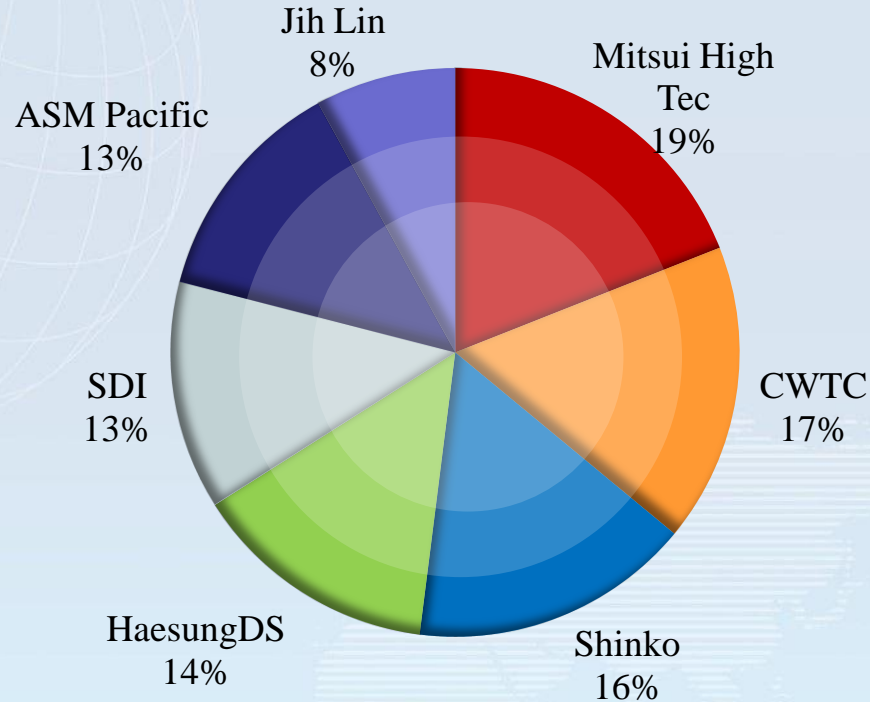


Malaysia

MSHE , Selangor, 1989



Lead frame estimated market share in Y2019



| Y2019 | MHT | CWTC | Shinko* | HDS | SDI | ASMPT | JLT |
|------------------------|-------|------|---------|------|------|-------|------|
| Annual Revenue (USD M) | 343 | 314 | 293 | 250 | 243 | 240 | 150 |
| Operating Profit Ratio | -3.8% | 8.9% | n/a | 7.1% | 6.6% | 3.1% | 5.9% |

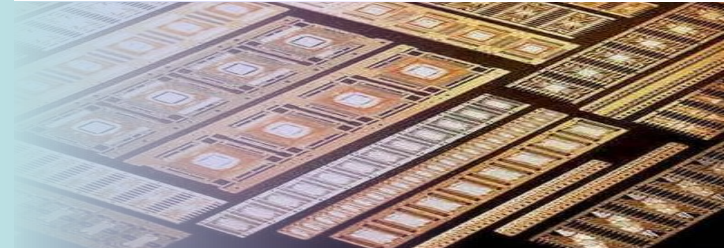
* : Shinko did not disclose operating profit rate by segment

source : each company publicly announced finance report

CWTC Product Information

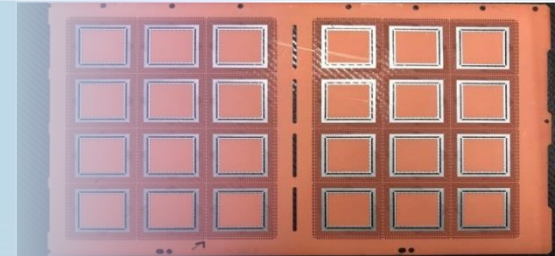
✘ IC Lead frame

SO, SOP, TSSOP, TSOP, COL, QFP,
TQFP, LQFP, PDIP



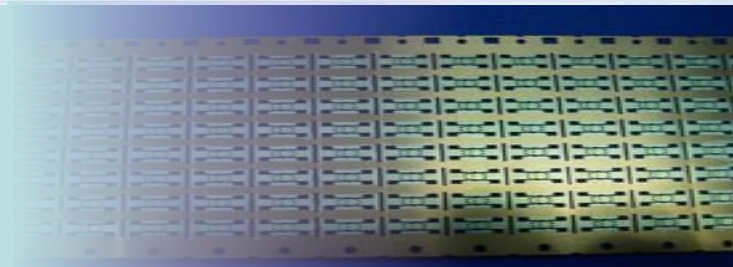
✘ IC Lead frame (lead less lead frame)

QFN, MQFN, DR-QFN, aQFN



✘ Discrete:

Discrete transistor · SOT



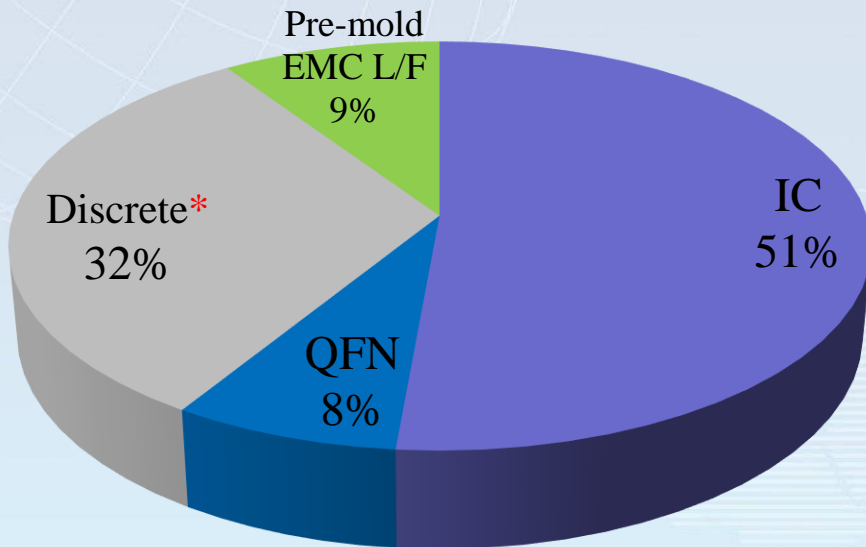
✘ EMC Lead frame

LED, Pre-mold

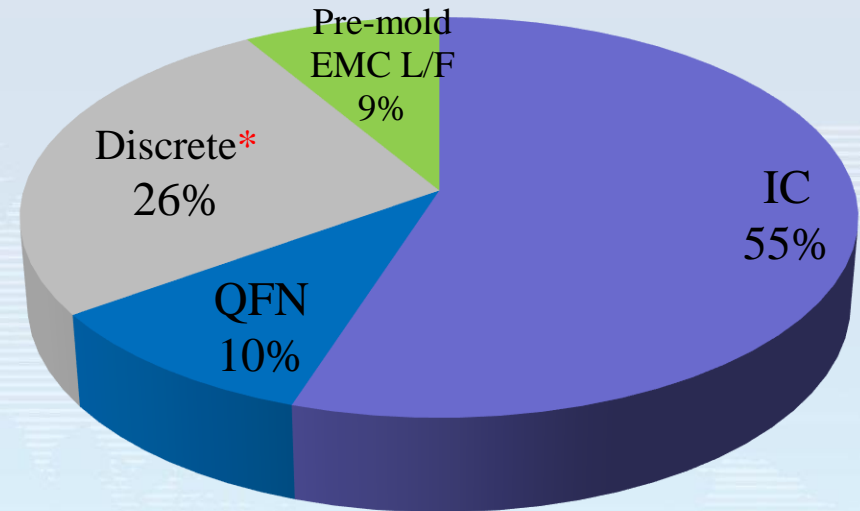


Product Portfolio

2019 H1



2020 H1

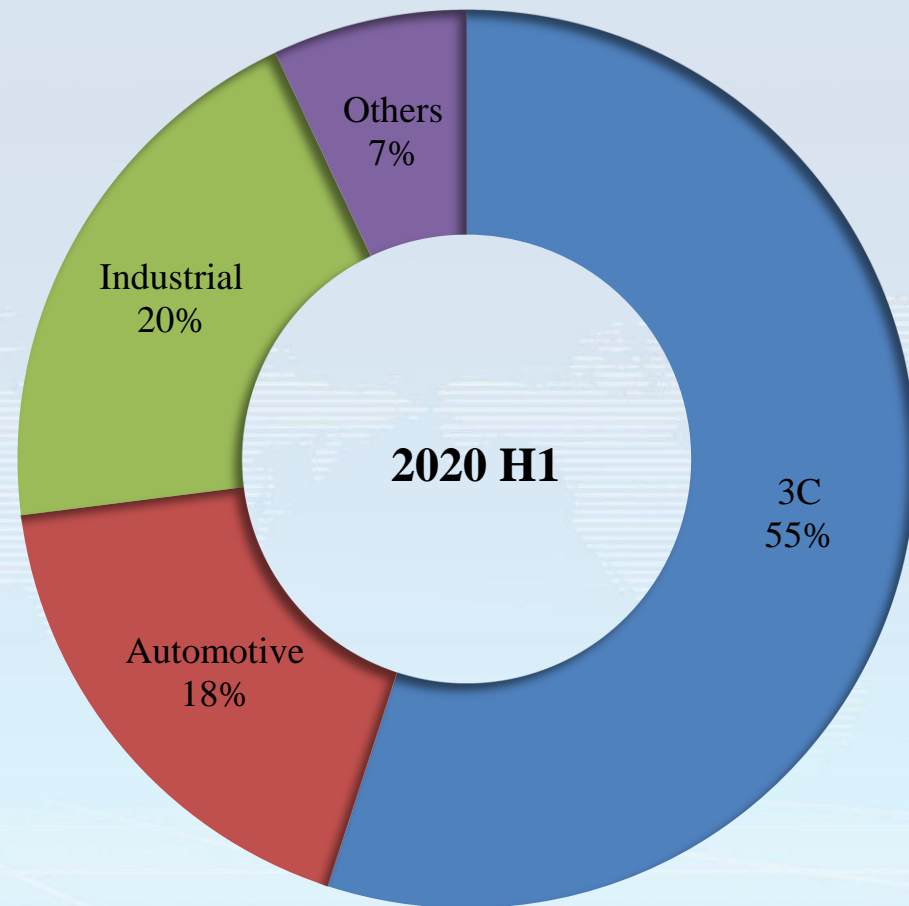
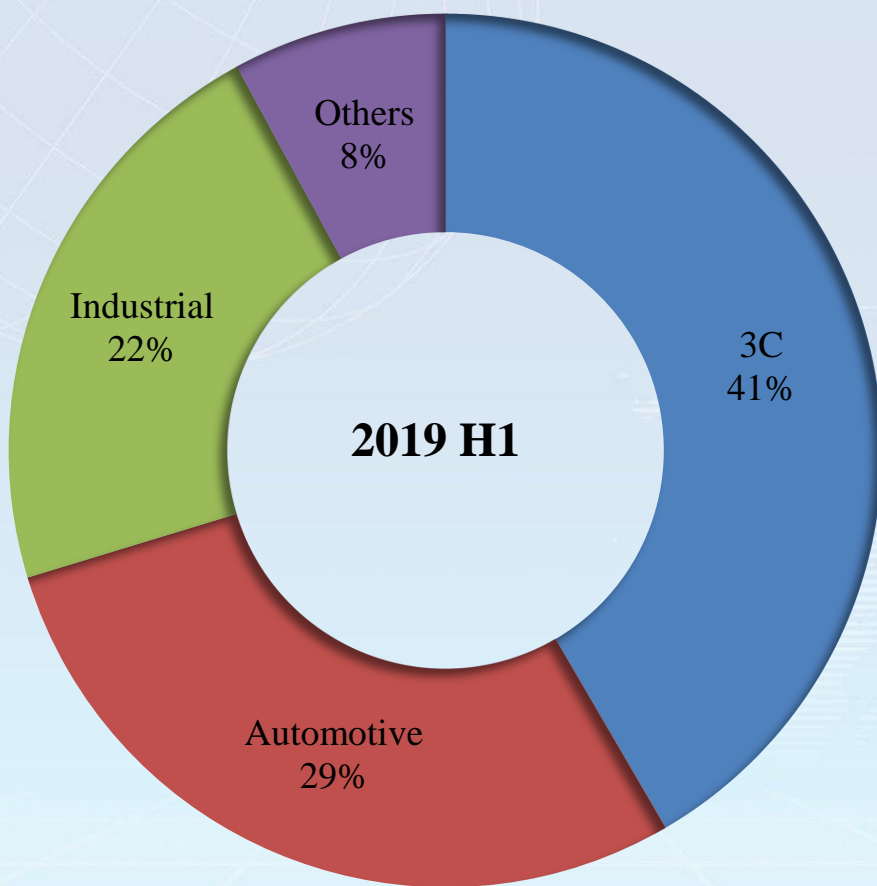


IC : SO、TSOP、QFP

Discrete : SOT, small outline transistor

***World wide No. 1 in SOT shipment with 40% ~ 45% market share**

Application



II 、 Growth Momentum

Organic Growth

- CWTC will invest USD 100 million in Kaohsiung for expansion
 - Building etching and plating line for QFN product
- Continuous expansion in China and South East Asia

| Capacity | 2020 | 2021 |
|----------------------------|------|-----------|
| QFN capacity (M strips) | 18 | <u>32</u> |



+70%

M&A project



Advanced Machinery !

High End Technology and Know-How!

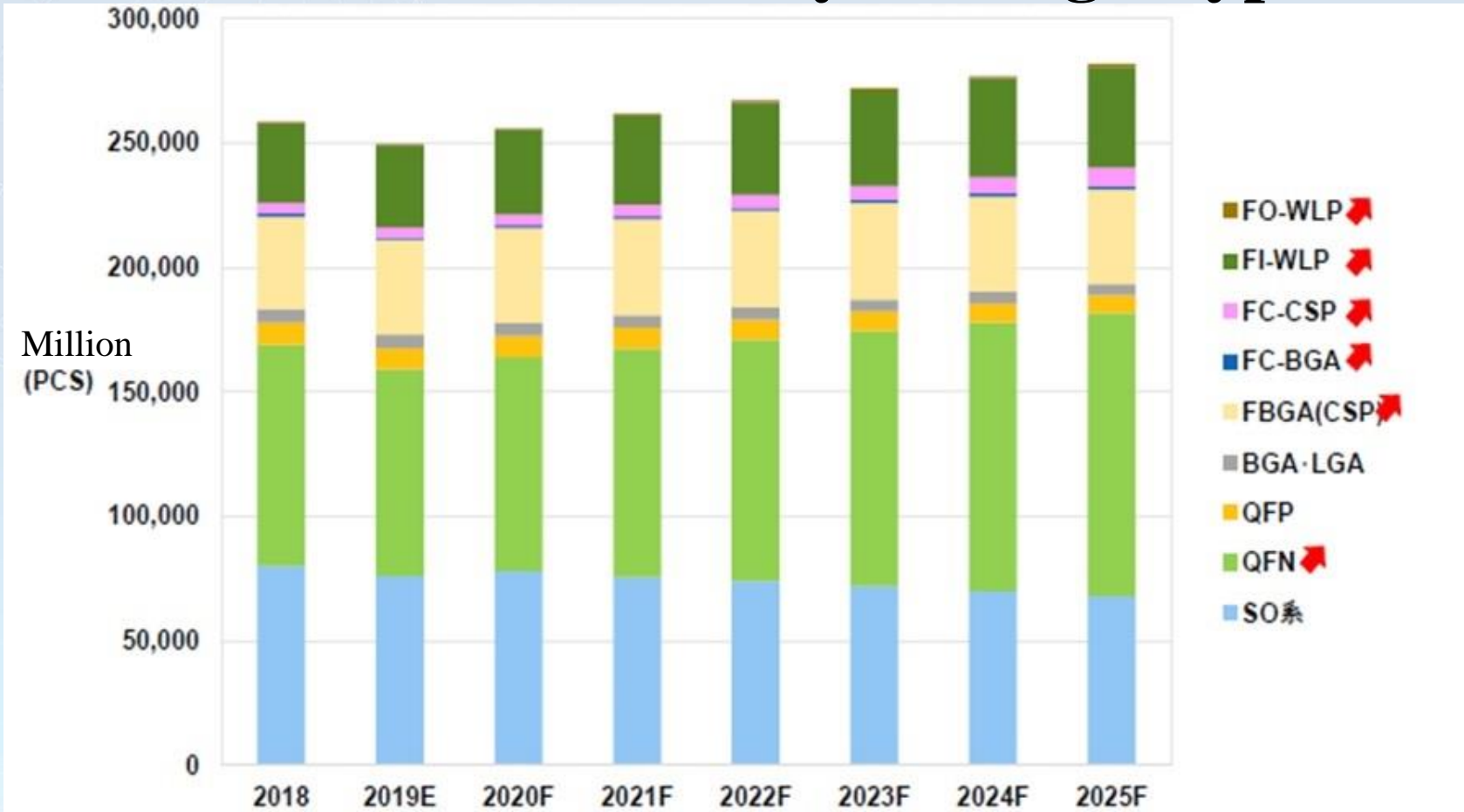
■ Material Benefit

- Installation in Y2020 Q4
- Qualification in Y2021 Q1
- More flexibility in capacity arrangement

Continuous M&A Project in Future

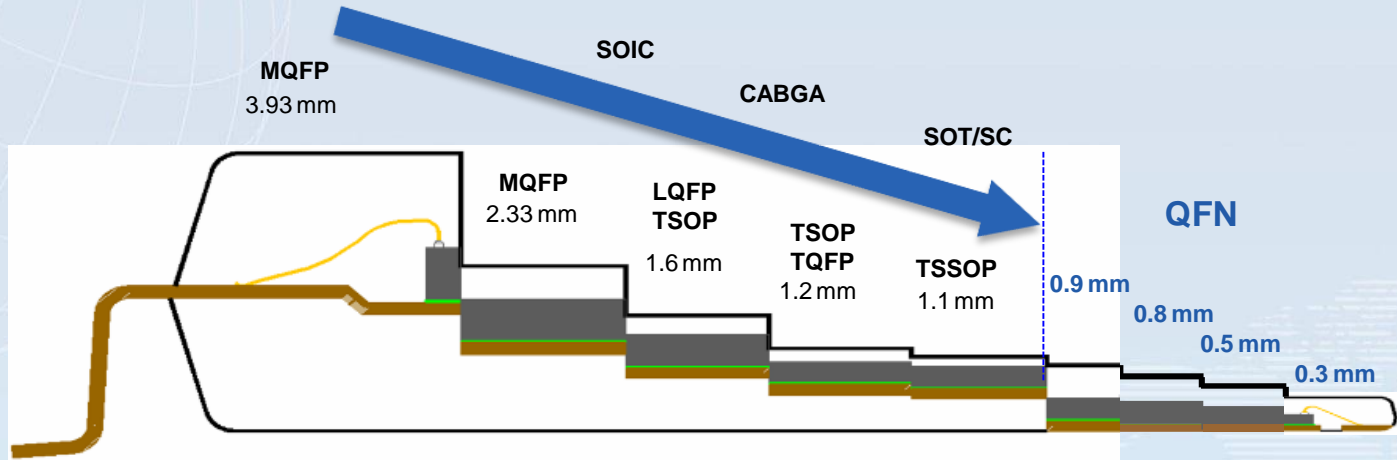
III 、 QFN Introduction

Semiconductor Market by Packages type



Source : ITRI(2019/Oct.)

Why QFN continues growing ?



| chip design trend | L/F develop trend |
|----------------------------|-------------------------------|
| chip shrink | thinner and smaller |
| stack die | quick thermal dissipation |
| integrated function | high I/O |
| high performance computing | better electrical performance |



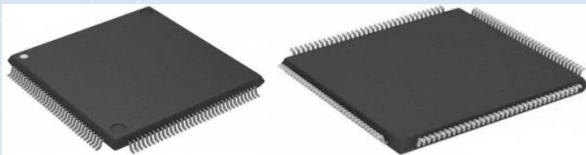
The L/F developing trend just meet QFN advantage

QFN Introduction

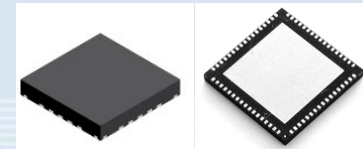
■ QFN

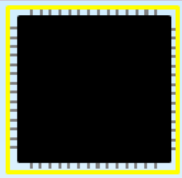
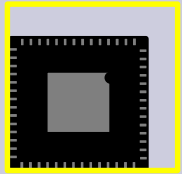

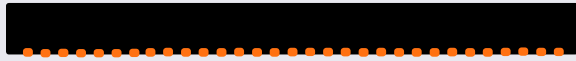
- QFN(Quad Flat No Leads Package) is a small size, lead-less package with low profile, good thermal dissipation and good electrical performance. Therefore, it's widely applied to various handset device and personal laptop.

QFP Package



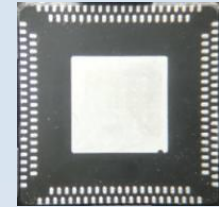
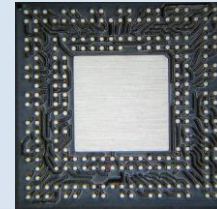
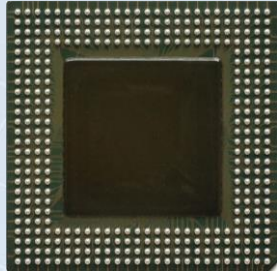
QFN Package



| | TQFP 128 | MQFN 128 |
|--------------|---|--|
| package size |  $16 \times 16 \text{ mm}$ |  $12.3 \times 12.3 \text{ mm}$ 40% reduce |
| Thickness |  1.2 mm |  0.8 mm 33% reduce |
| Pitch | 0.4 mm | 0.35 mm |

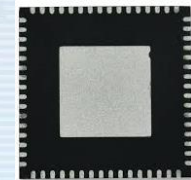
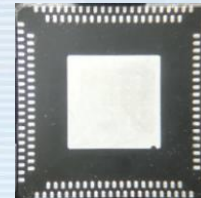
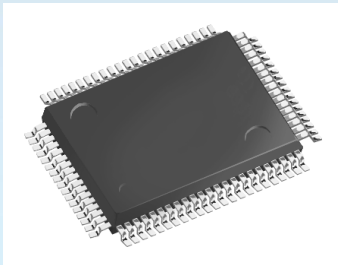
QFN Sweet box

BGA Package



| BGA | aQFN <i>(only supplier in the world)</i> | DR-QFN |
|---------------|---|---------------|
| 500~100 balls | 500~100 balls | 256~100 leads |

QFP Package



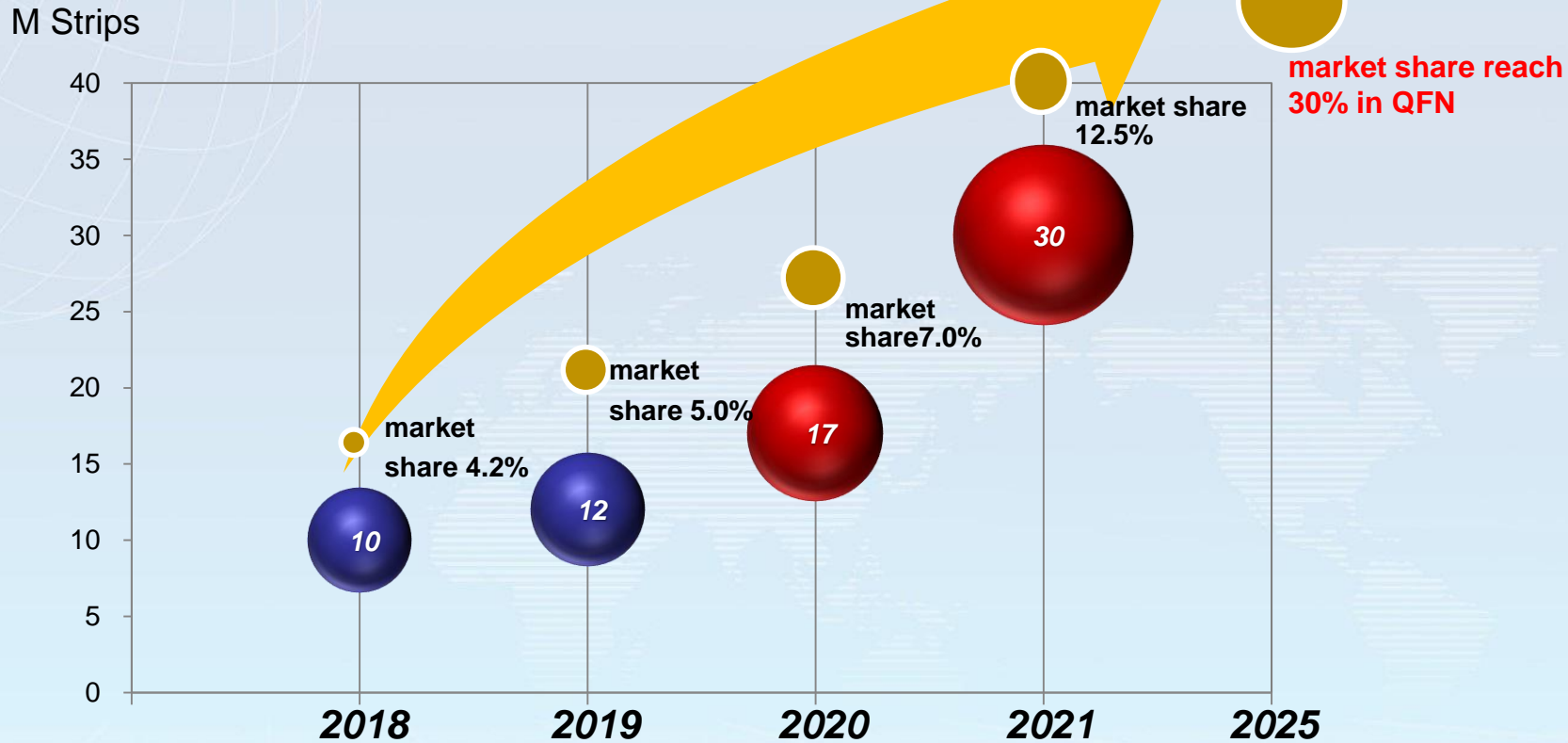
| QFP | DR-QFN | QFN |
|--------------|---------------|--------------|
| 256~32 leads | 256~100 leads | 180~32 leads |

- QFN can replace BGA and QFP in above I/O range
- DR-QFN is CWTC major QFN product. We will acquire aQFN technology from OM in Y2020 Q4 and provide qualification sample in Y2021 Q1

IV 、 Future Vision

Worldwide No.1 L/F manufacturer

To be worldwide No.1 QFN L/F manufacturer



Notes 1 : Y2018 estimated worldwide QFN shipment quantity are 240 M strips / year

Notes 2 : The amount in Y2020 and Y2021 are CWTC estimated QFN shipping quantity in k strips

Source : CWTC



One world ; Two segments

V、Q & A and Appendix

Y2017 ~ Y2020 H1 Balance Sheet

| units : NTD in million | 2017.12.31 (IFRSs) | 2018.12.31 (IFRSs) | 2019.12.31 (IFRSs) | 2020.06.30 (IFRSs) |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| Cash and short term investment | 2,131 | 2,304 | 3,076 | 3,326 |
| Account Receivable | 1,816 | 1,925 | 2,002 | 1,965 |
| Current Assets | 5,350 | 5,791 | 6,502 | 7,338 |
| Current Liability | 2,150 | 2,758 | 2,964 | 2,969 |
| Total Liability | 3,970 | 4,617 | 5,558 | 6,524 |
| Total equity attributable to owners of parent | 5,064 | 5,098 | 4,904 | 4,904 |
| Total Assets | 9,100 | 9,788 | 10,544 | 11,516 |
| Net Assets Value per share | 140.0 | 144.3 | 13.9* | 13.5** |
| Current Ratio | 249% | 210% | 219% | 247% |
| Debt Ratio | 44% | 47% | 53% | 58%*** |
| EBITA | 1,310 | 1,733 | 1,499 | 709 |

*stock split · outstanding share enlarge 10 times

** overseas subsidiary valuation decrease due to NTD appreciation, leading the equity and net assets value per share decrease 0.4 / per share

*** debt ratio increase due to capex expansion

Consolidate P&L – 2Q Y2020

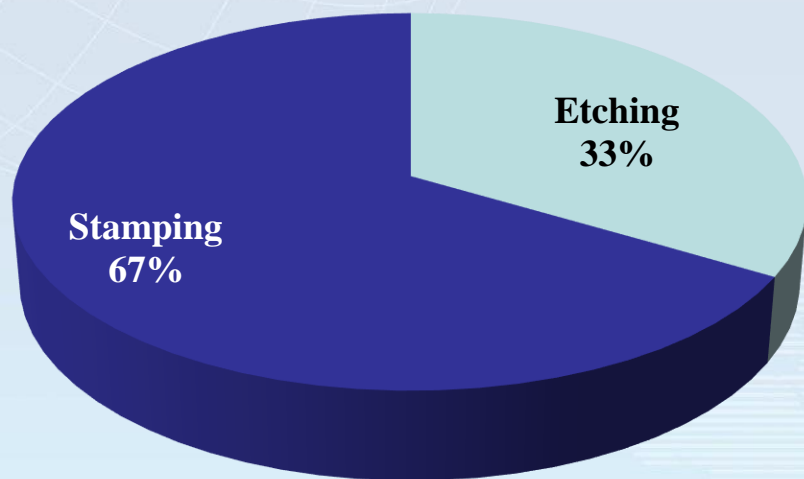
| units : NTD in million | Y2020 2Q | Y2020 1Q | QoQ | Y2019 2Q | YoY |
|---|----------|----------|-----|----------|-----|
| Revenue | 2,438 | 2,154 | 13% | 2,251 | 8% |
| Gross Profit | 423 | 359 | 18% | 361 | 17% |
| Operating Profit | 227 | 177 | 28% | 200 | 14% |
| Non operating profit and expense | 5 | 12 | | 20 | |
| Profit before tax | 232 | 189 | 23% | 220 | 5% |
| Tax expense | 27 | 58 | | 73 | |
| Profit attributable to owners of parent | 200 | 127 | 57% | 145 | 38% |
| EPS | 0.57 | 0.36 | | 0.41 | |
| Profit ratio (%) | | | | | |
| Gross profit ratio | 17.4 | 16.7 | | 16.0 | |
| Operating profit ratio | 9.3 | 8.2 | | 8.9 | |
| Profit ratio before tax | 9.5 | 8.8 | | 9.8 | |
| Net profit ratio | 8.4 | 6.0 | | 6.6 | |

Consolidate P&L – H1 Y2020

| units : NTD in million | Y2020 H1 | Y2019 H1 | YoY |
|---|-----------------|-----------------|------------|
| Revenue | 4,592 | 4,407 | 4% |
| Gross Profit | 782 | 709 | 10% |
| Operating Profit | 404 | 375 | 8% |
| Non operating profit and expense | 17 | 30 | |
| Profit before tax | 421 | 405 | 4% |
| Tax expense | 85 | 133 | |
| Profit attributable to owners of parent | 328 | 272 | 21% |
| EPS | 0.93 | 0.76 | |
| Profit ratio (%) | | | |
| Gross profit ratio | 17.0 | 16.1 | |
| Operating profit ratio | 8.8 | 8.5 | |
| Profit ratio before tax | 9.2 | 9.2 | |
| Net profit ratio | 7.3 | 6.2 | |

Process portfolio

2019 H1



2020 H1

