

# 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 lead frame manufacturer
- V 、 Q&A and Appendix

# I、CWTC Introduction

# Plant Location



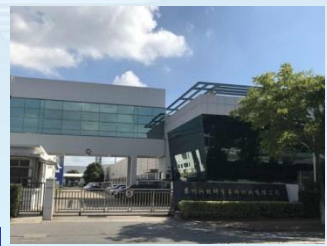
**China**

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



**Taiwan**

SHT , Kaohsiung, 1994

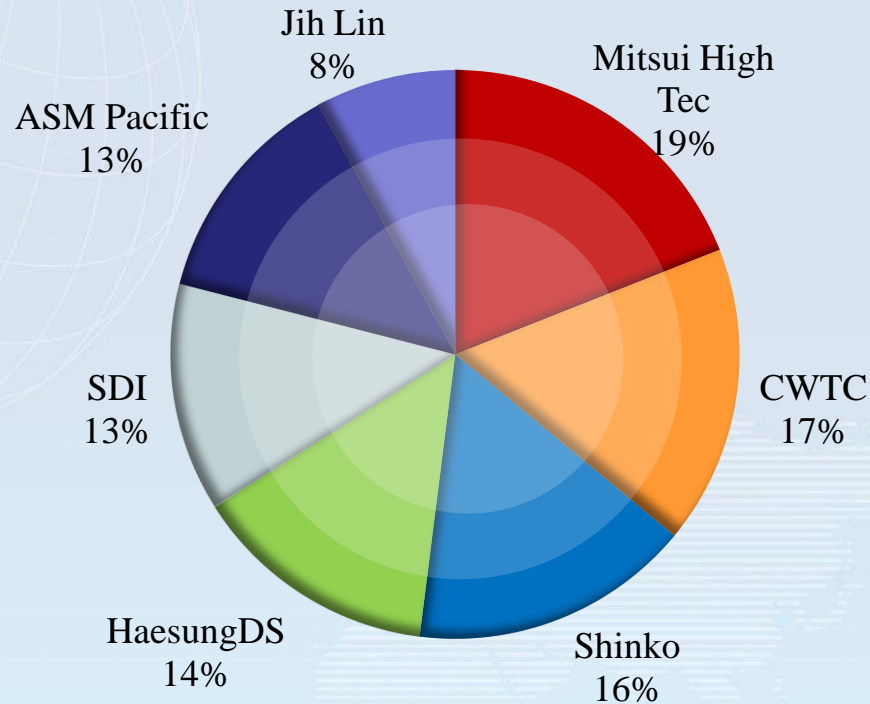


**Malaysia**

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%

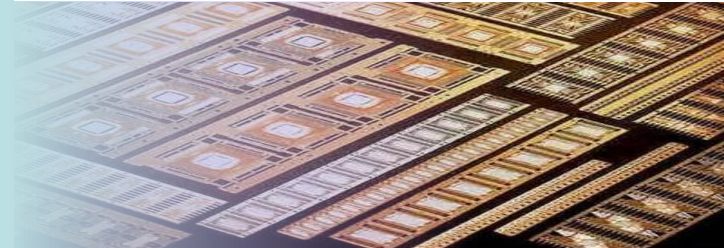
\* : Shinko did not disclose operating profit rate by segment

source : each company publicly announced finance report

# CWTC Product Information

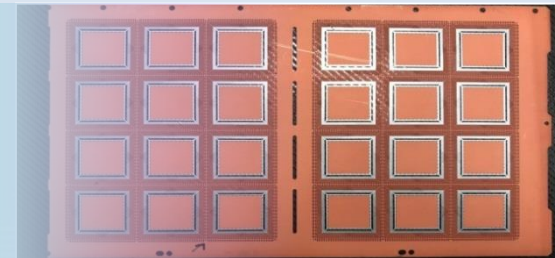
## ✘ IC Lead frame

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



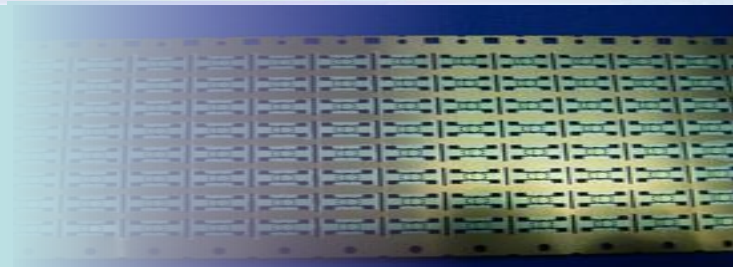
## ✘ IC Lead frame (lead less lead frame)

QFN, MQFN, DR-QFN, aQFN



## ✘ Discrete:

Discrete transistor · SOT



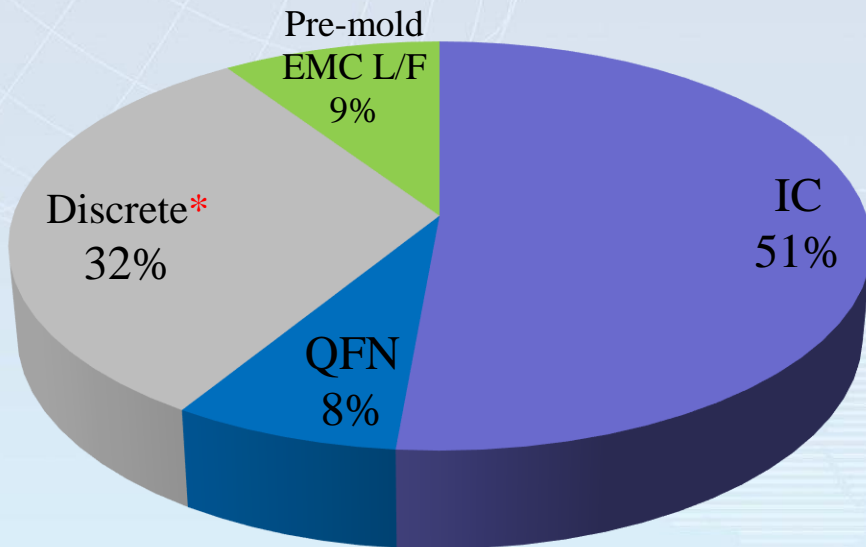
## ✘ EMC Lead frame

LED, Pre-mold

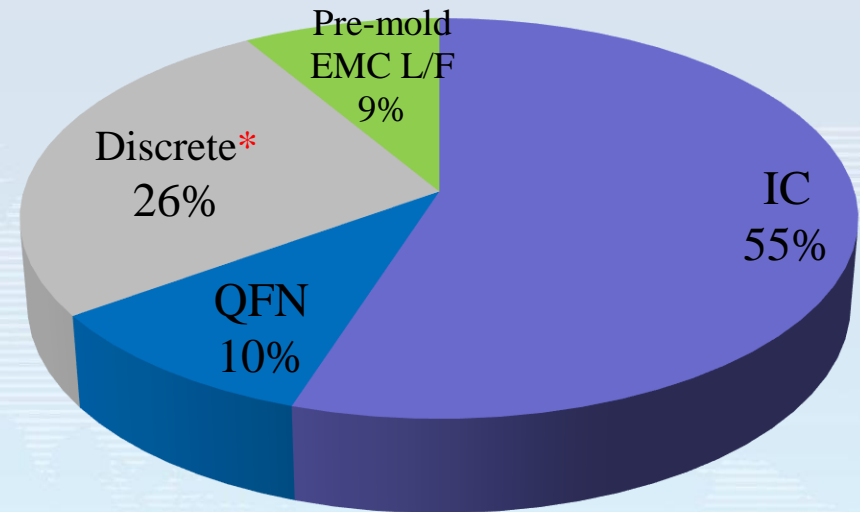


# Product Portfolio

2019 H1



2020 H1

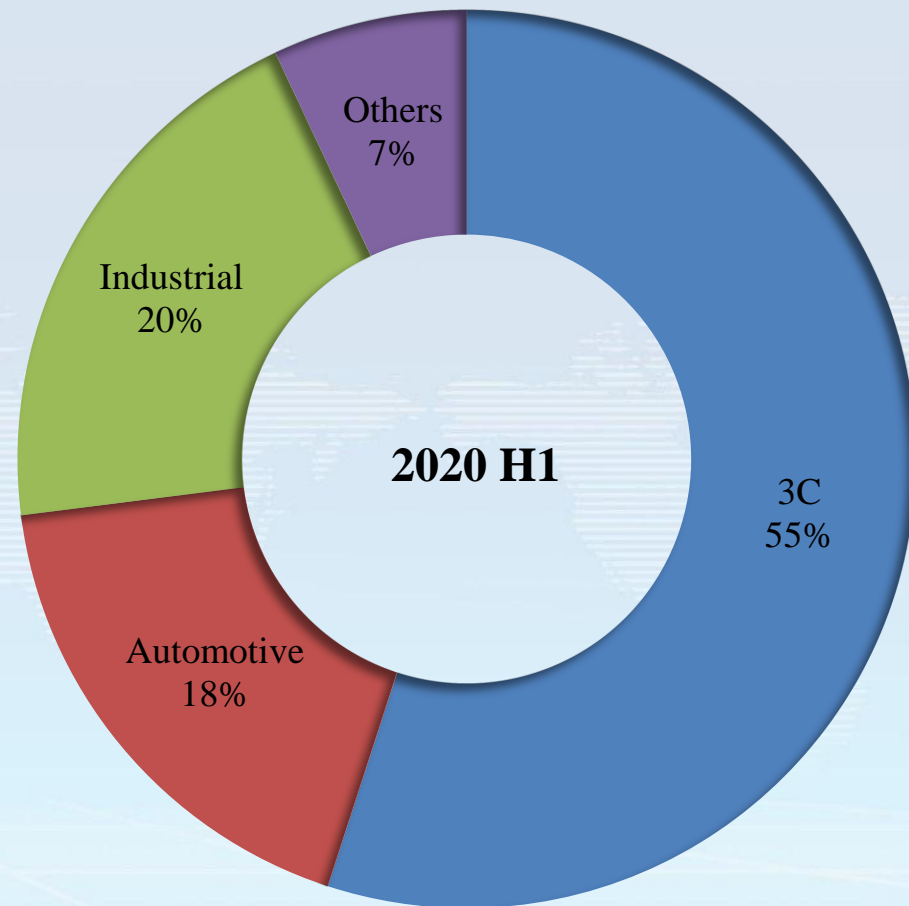
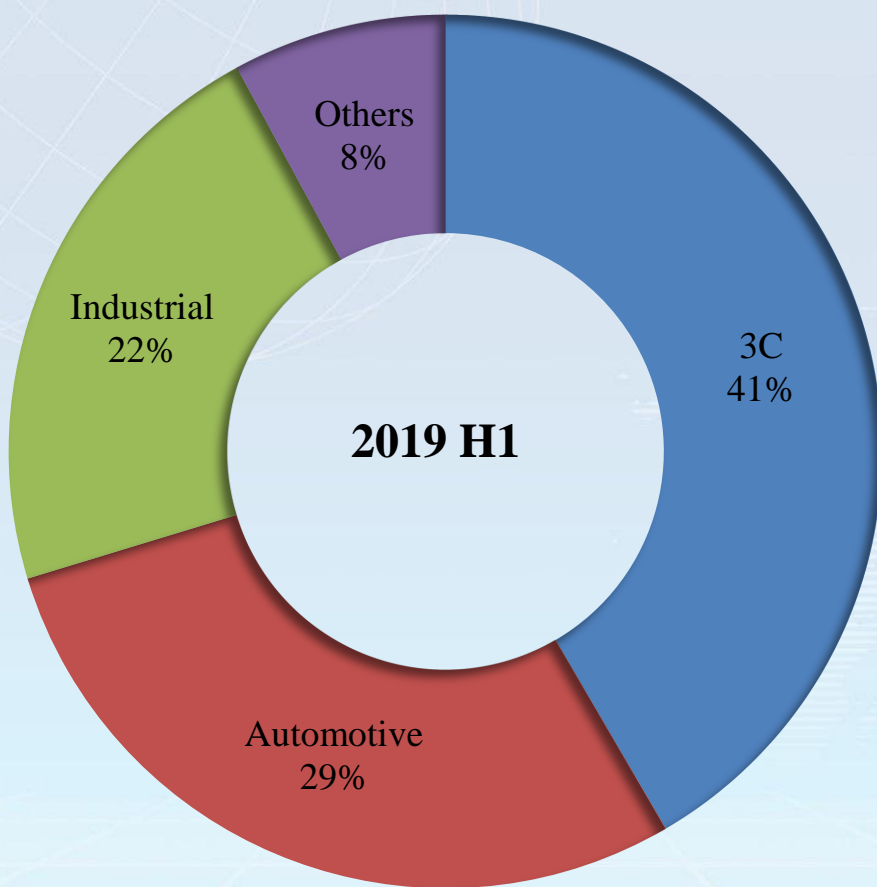


IC : SO、TSOP、QFP

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 (k strips)	18,000	<u>32,000</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

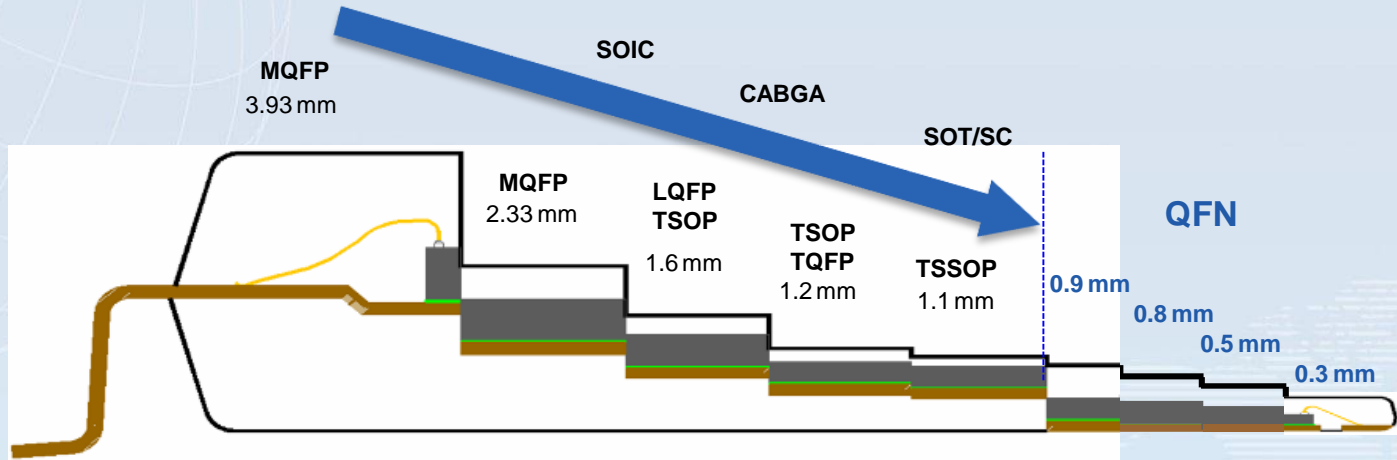
# III 、 QFN Introduction

# Semiconductor Market by Packages type

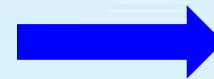


Source : ITRI(2019/Oct.)

# 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



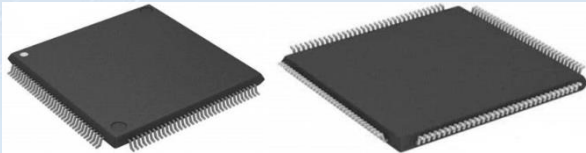
**The L/F developing trend just meet QFN advantage**

# QFN Introduction

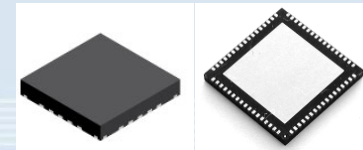
## ■ QFN

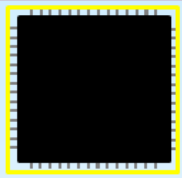
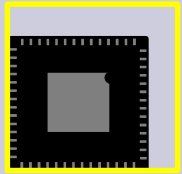

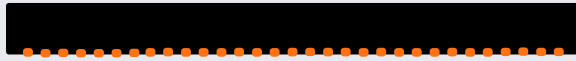
- QFN(Quad Flat No Leads Package) is a small size, lead-less package with low profile, good thermal dissipation and good electrical performance. Therefore, it's widely applied to various handset device and personal laptop.

QFP Package



QFN Package



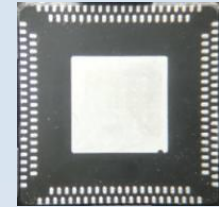
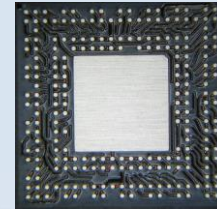
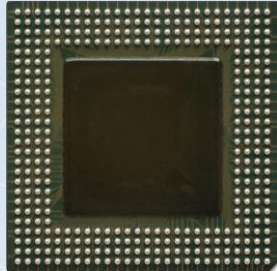
	TQFP 128	MQFN 128
package size	 16 × 16 mm	 12.3 × 12.3 mm
Thickness	 1.2 mm	 0.8 mm
Pitch	0.4 mm	0.35 mm

40%  
reduce

33%  
reduce

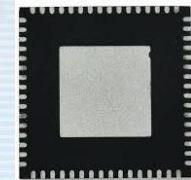
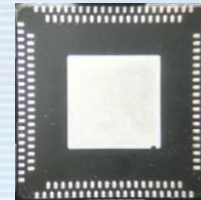
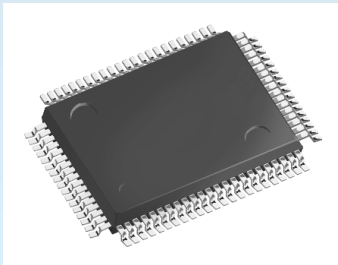
# QFN Sweet box

BGA Package



BGA	aQFN <u>(only supplier in the world)</u>	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

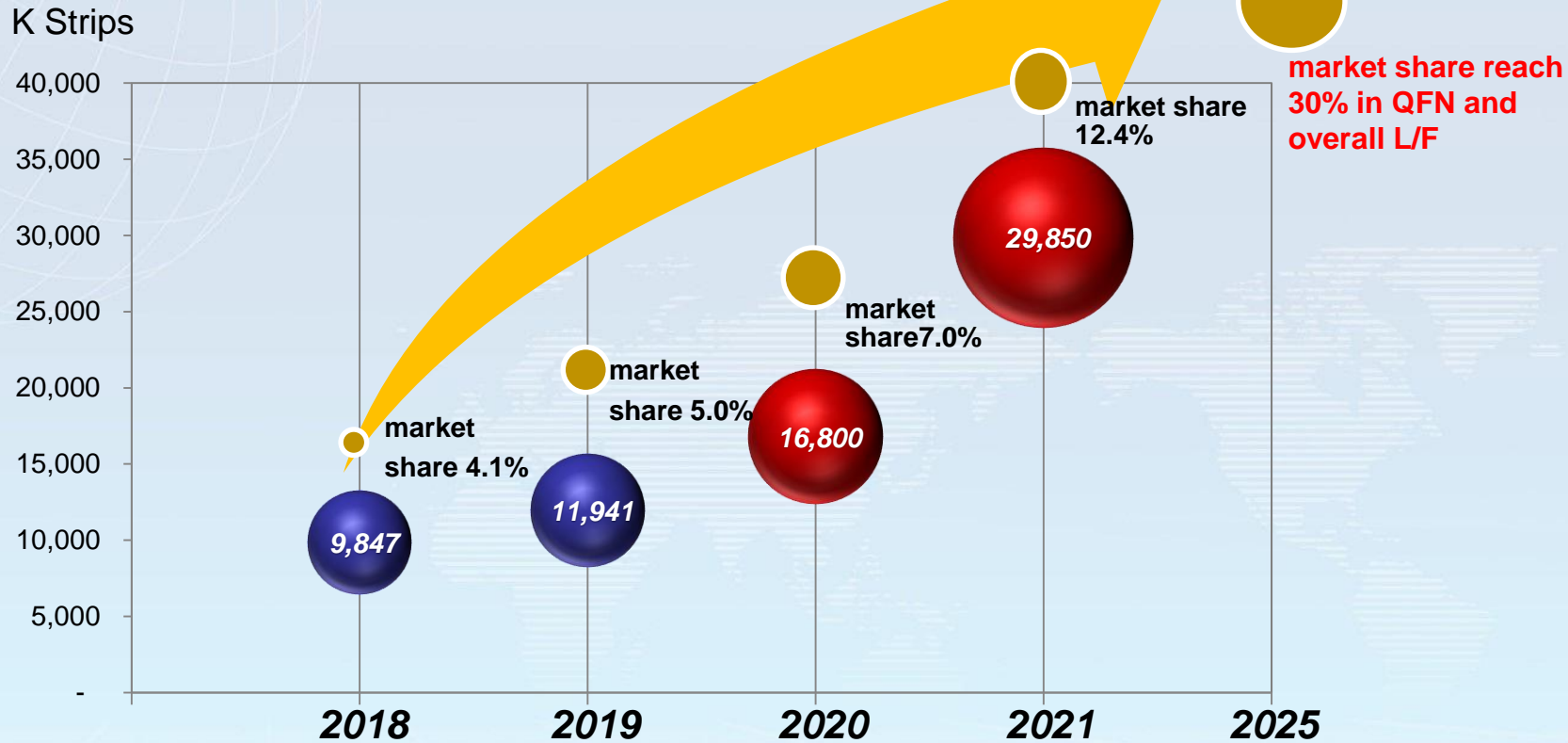
- QFN can replace BGA and QFP in above I/O range
- DR-QFN is CWTC major QFN product. We will acquire aQFN technology from OM in Y2020 Q4 and provide qualification sample in Y2021 Q1



## **IV 、 Future Vision**

**Worldwide No.1 L/F manufacturer**

# To be worldwide No.1 L/F manufacturer



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

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

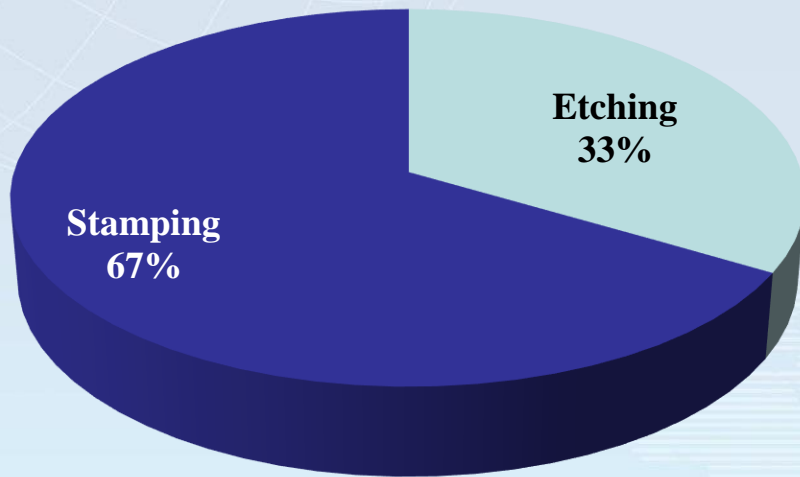
<b>units : NTD in million</b>	<b>Y2020 2Q</b>	<b>Y2020 1Q</b>	<b>QoQ</b>	<b>Y2019 2Q</b>	<b>YoY</b>
Revenue	2,438	2,154	13%	2,251	8%
Gross Profit	423	359	18%	361	17%
Operating Profit	227	177	28%	200	14%
Non operating profit and expense	5	12		20	
Profit before tax	232	189	23%	220	5%
Tax expense	27	58		73	
Profit attributable to owners of parent	200	127	57%	145	38%
EPS	0.57	0.36		0.41	
<b>Profit ratio (%)</b>					
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

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

# Process portfolio

2019 H1



2020 H1

