CHANGE WAH TECHNOLOGY CO., LTD (6548)

March 16,2018

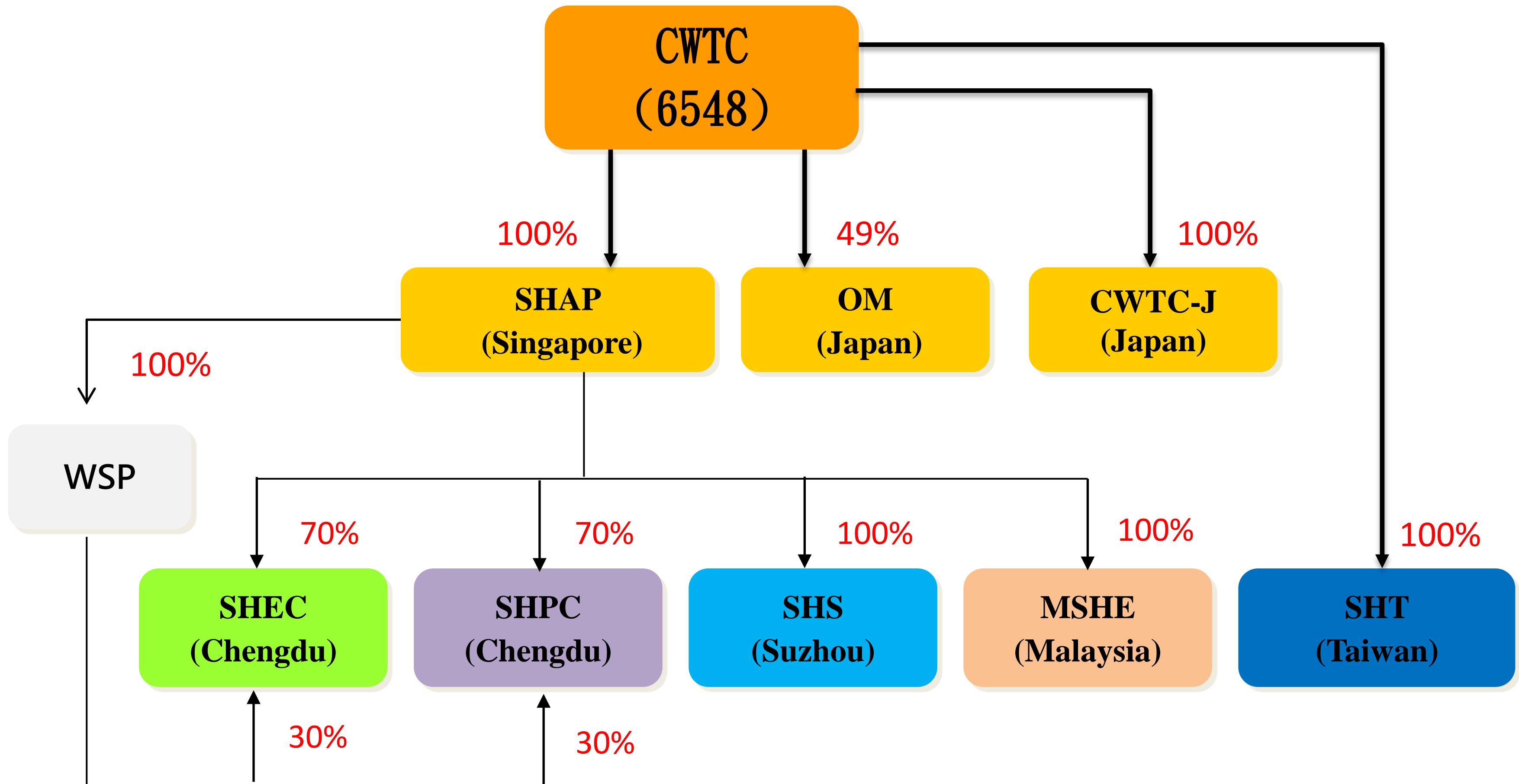
Outline

- Company Introduction
- Automotive Electronics and QFN Wettable Flank Packages
- Financial Results
- Development and Vision

Company Introduction

The Company Set Up	Dec. 24, 2009
President	Canon Huang
Capital	NTD 361 Million
Employees	1,730(Consolidated)
Main Products	IC Metal Lead Frame Pre-Mold Metal Substrate
Subsidiary	SHAP (SH Asia Pacific Pte. Ltd.) 100%
Head Office	Nan-Tze Export Processing Zone, Kaohsiung City ,Taiwan

Investment Structure



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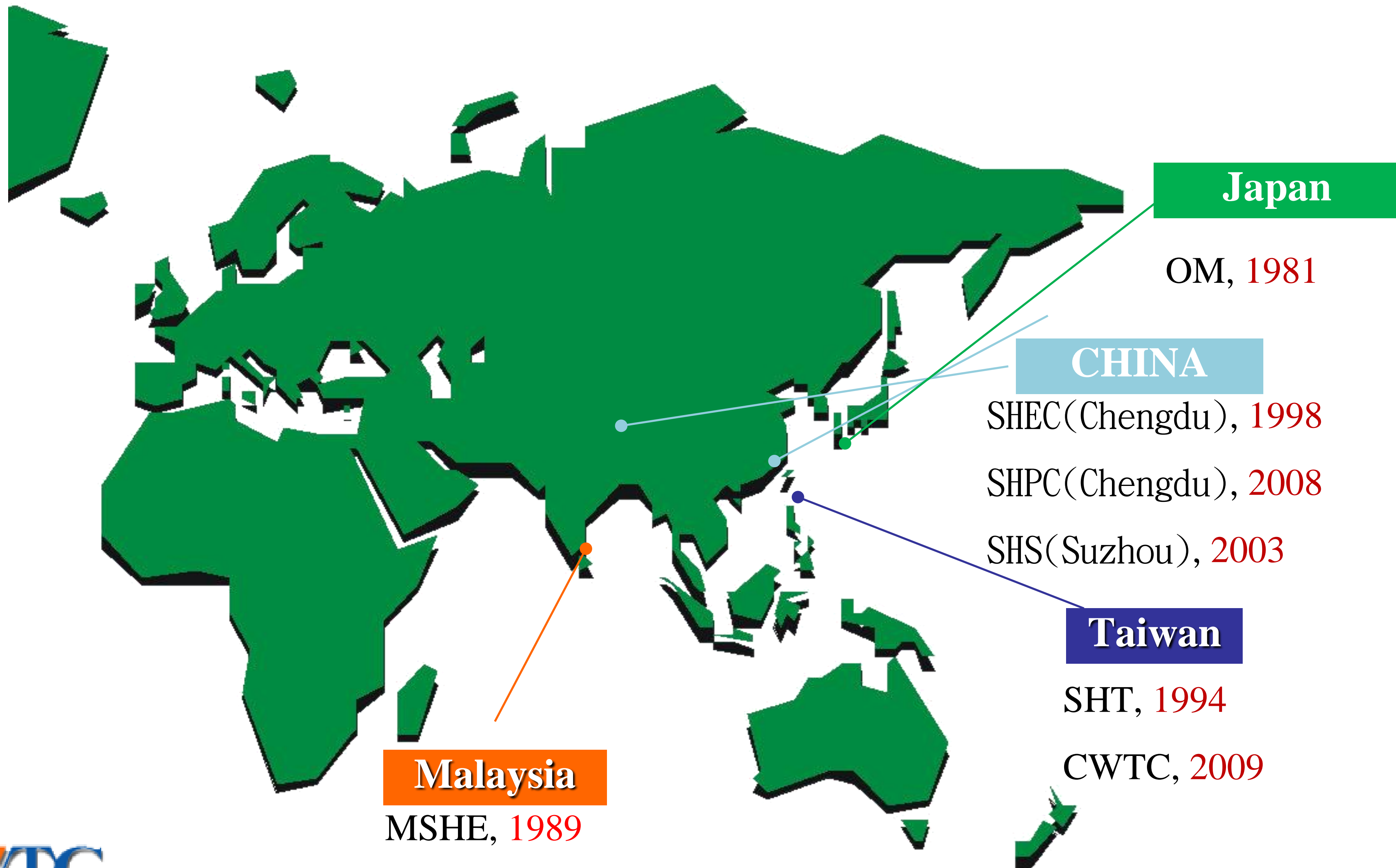
Plants and Factories



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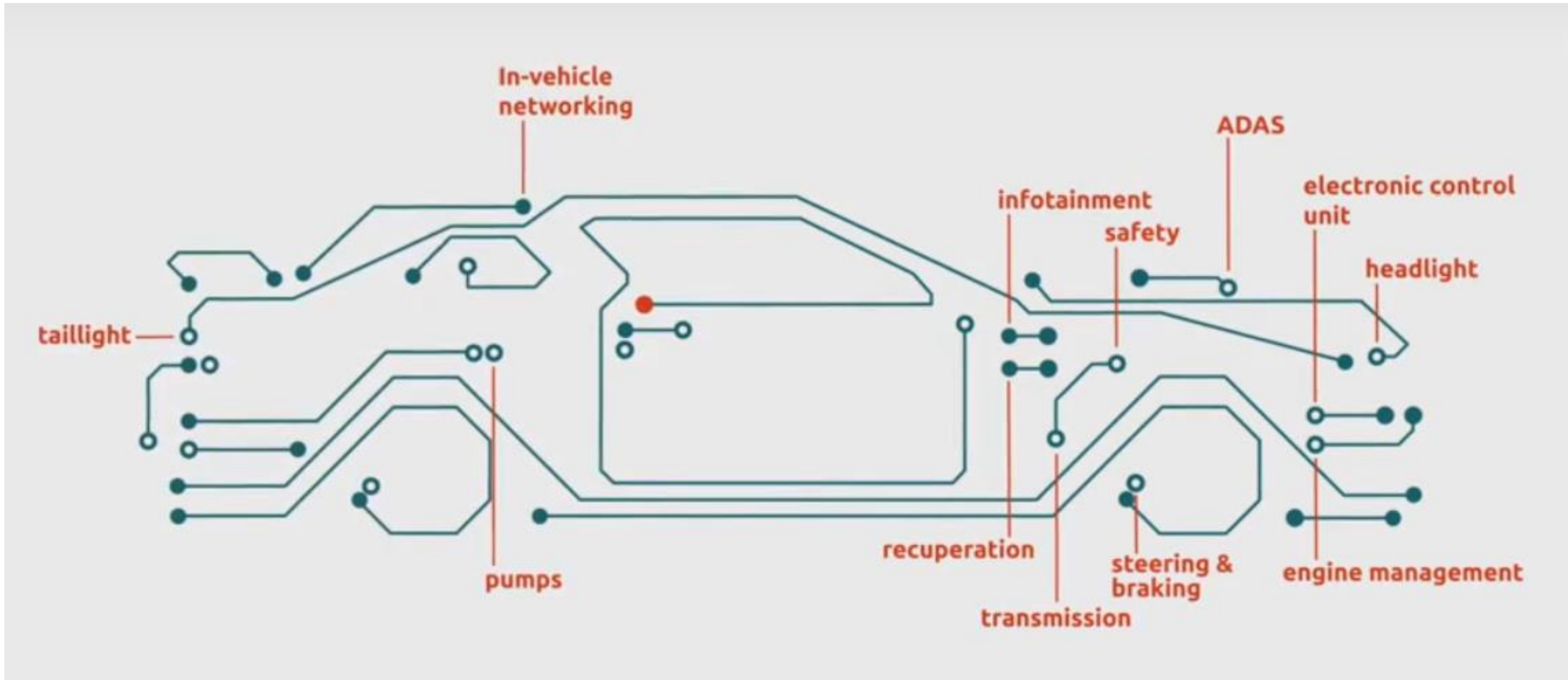
Automotive Electronics and QFN Wettable Flank Packages



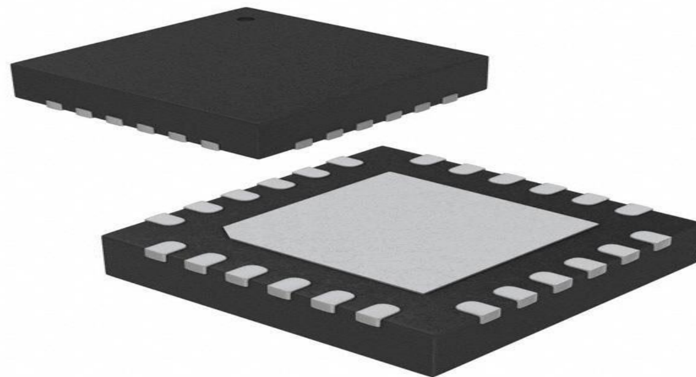
- Automotive ICs include Microcontrollers (MCU), Application Specific Standard Products (ASSP)/Application-Specific Integrated Circuits (ASIC), Analog, Power Transistors, Sensors, etc.

Automotive IC Features

- Automotive electronics specifically requires the resistance of electronic components to weather, especially the need for high temperature resistance over performance and power consumption.
- In addition to the high temperature environment, electronic components will also face adverse conditions such as shocks and environmental shocks, so the package design must use relatively stable pin design and solder surface connection method to strengthen the stability of the component on the PCB.
- In order to ensure effective soldering of the solder joints, the requirements for automotive electronics on the lead frame are "must be visually observed or automated optical inspection" to determine whether it is an effective solder.

QFN(Quad Flat No Lead)

- QFN has a small size and is similar to a Chip Scale Package (CSP) package type. It is relatively inexpensive and has a feature of reducing thermal resistance. Because it does not require pins to be drawn from four sides, it has excellent electrical performance and is very suitable for use in Low-speed high-speed/high-frequency system products.
- Welding characteristics: QFN uses the bottom terminal of the package as the welding point, it is generally difficult to judge whether the solderability is good from the solder point of its appearance. Even though the QFN side still has soldering feet, some of them are not plated on the cross-section, and it is difficult to take tin.



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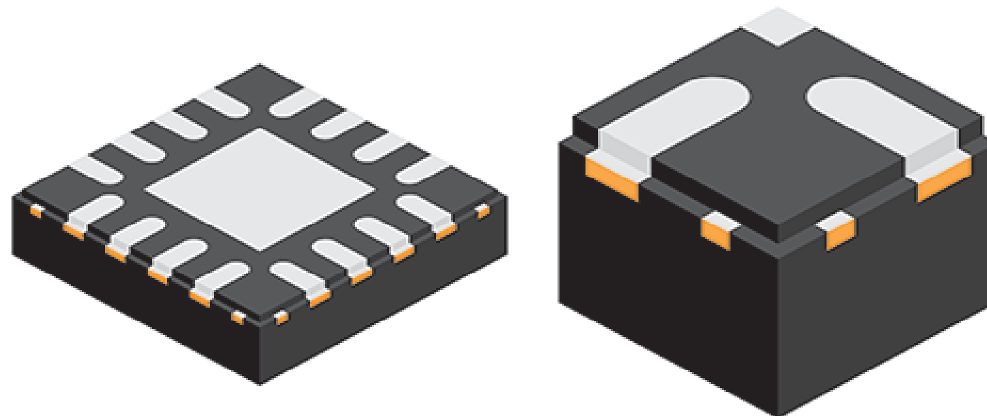
Wettable Flank

- Wettable Flank is used to improve the QFN package welding characteristics, improve reliability. The most important is that the manufacturing process can be reduced by simplifying the manufacturing process through post-weld optical inspection
- Wettable Flank significantly improves the QFN welding quality and meets the requirements of automotive electronics - visually observing the quality of welding, making it ideal for a variety of automotive electronic system applications.



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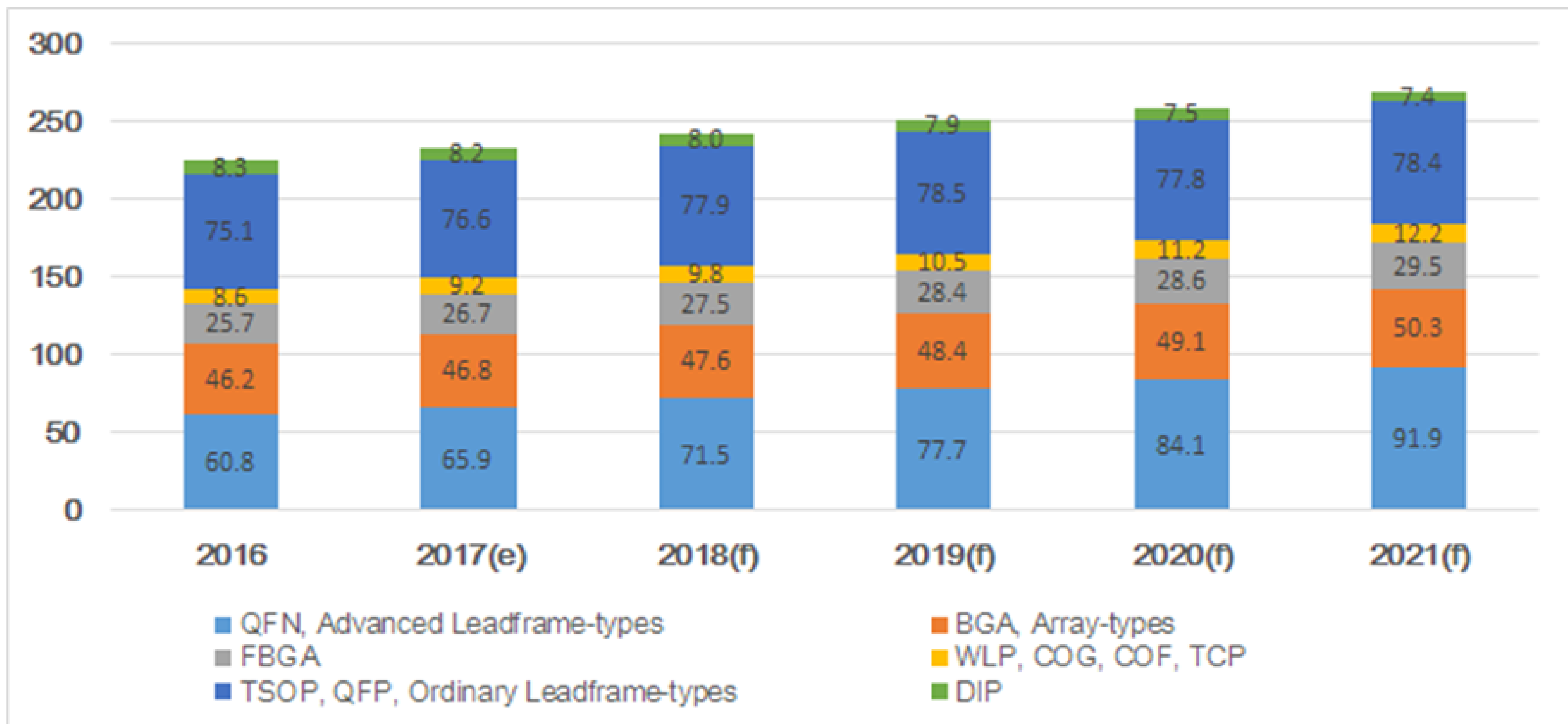
QFN Growth Trend



- In 2016, lead frame packaged ICs accounted for about 64.2% of the total IC package. Among them, the lead frame is divided into a traditional lead frame, a high-order lead frame, and a DIP lead frame with a small number of legs.
- The share of high-order leadframes (mainly QFNs) in the total package size will increase from 27.1% (in 2016) to 32.1% (in 2021).

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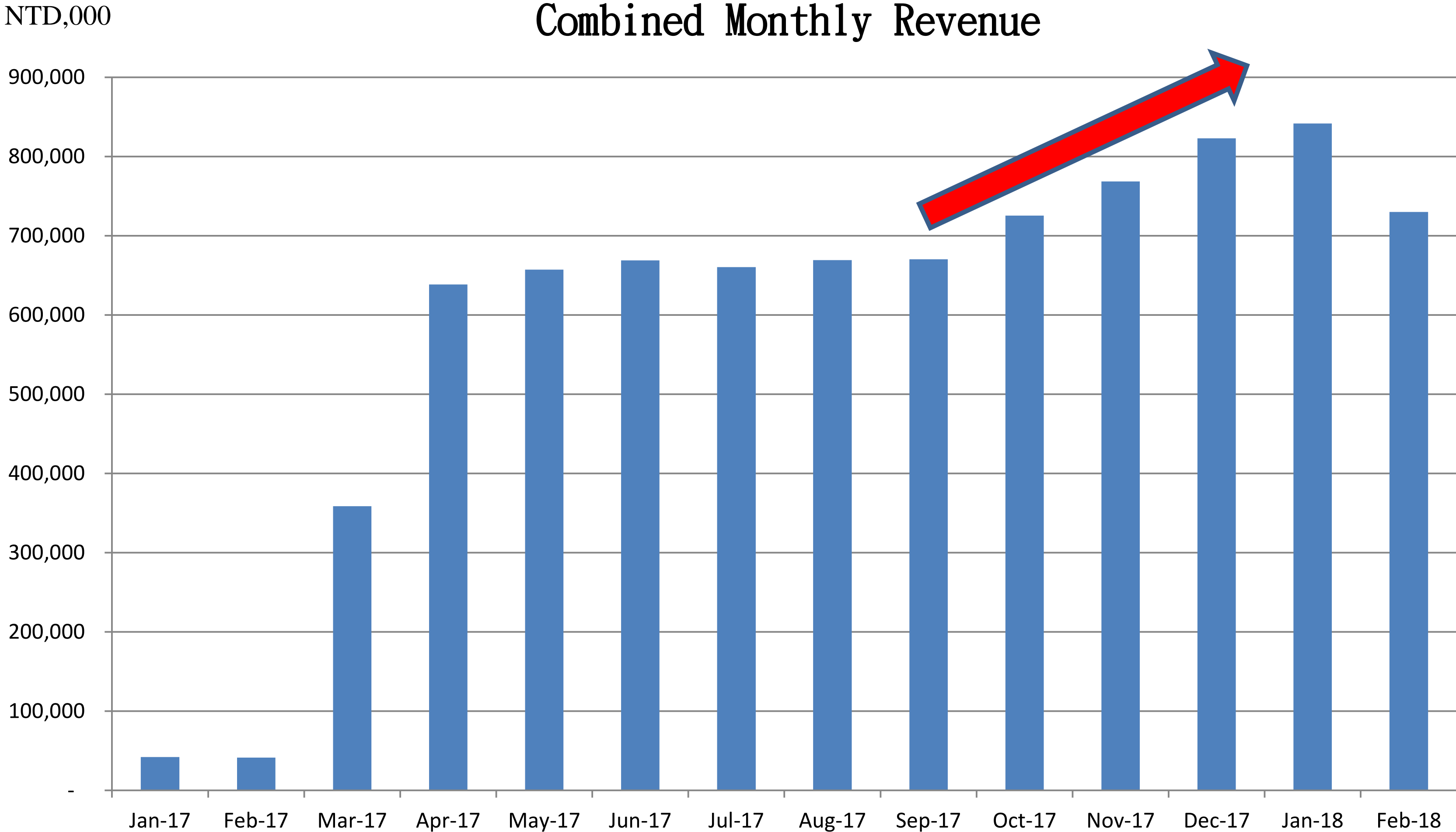
Advantages of CWTC's Wettable Flank Process

- CWTC uses Pre-Mold technology to 1’st etch the standard QFN substrate → Molding → 2’nd etch → plating.

- 2’nd etch, To directly etch the wettable side stages, directly reducing the 50% cutting process of the OSATs in the Wettable Flank package. Significantly increase the yield and reduce costs.

Financial Results
(Consolidated Monthly Revenue Trend)



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Financial Results(Consolidated Income Statement)

Amount NTD MN	4Q 2017 Amount	4Q 2017 %	4Q 2016 (After renumbering) Amount	4Q 2016 (After renumbering) %	4Q 2016 (Before renumbering) Amount	4Q 2016 (Before renumbering) %	YoY %	3Q 2017 (After renumbering) Amount	3Q 2017 (After renumbering) %	3Q 2017 (Before renumbering) Amount	3Q 2017 (Before renumbering) %
Revenues	2,317	100.0	422	100.0	110	100.0	448.8	2,276	100.0	2,000	100.0
Cost of Goods Sold	1,873	80.8	374	88.6	81	73.8	400.6	1,817	79.8	1,559	78.0
Gross Profit	444	19.2	48	11.4	29	26.2	825.1	459	20.1	441	22.1
Operating Expenses	219	9.4	33	7.8	23	20.5	562.4	168	7.4	162	8.1
Operating Income	225	9.7	15	3.5	6	5.7	1,403.9	291	12.8	279	13.9
Non-operating Income	14	0.6	43	10.2	7	6.4	(68.2)	(9)	(0.4)	(6)	(0.3)
Income before Income Tax	239	10.3	58	13.7	13	12.1	311.9	282	12.4	273	13.7
Income Tax Expenses	62	2.7	8	1.8	2	2.2	715.3	89	3.9	85	4.3
Net Income	177	7.7	50	11.9	11	9.8	251.5	193	8.5	188	9.4
Shareholders of the parent	175		11		11		1,537.8	165		165	
EPS(NTD)	5.76		0.44		0.43			5.49		5.49	

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Financial Results(Consolidated Income Statement)

Amount NTD MN	2017 Amount	2017 %	2016 (After renumbering) Amount	2016 (After renumbering) %	2016 (Before renumbering) Amount	2016 (Before renumbering) %	YoY %
Revenues	7,505	100.0	1,668	100.0	456	100.0	350.0
Cost of Goods Sold	6,061	80.8	1,449	86.9	320	70.2	318.3
Gross Profit	1,444	19.2	219	13.1	136	29.8	559.6
Operating Expenses	607	8.1	122	7.3	78	17.2	397.9
Operating Income	837	11.1	97	5.8	57	12.6	763.1
Non-operating Income	234	3.1	135	8.1	(3)	(0.7)	74.2
Income before Income Tax	1,071	14.3	232	13.9	54	11.9	362.6
Income Tax Expenses	251	3.3	24	1.4	9	2.0	955.8
Net Income	820	10.9	208	12.5	45	9.9	294.7
Shareholders of the parent	431		45		45		858.0
Common control of the pre-hand equity	305		149		0		
Minority interests	84		14		0		-
EPS(NTD)	14.62		1.97		1.97		

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Consolidated Balance Sheet Summary,2015~2017

Amount NT$ MN	2015.12.31 (IFRSs)	2016.12.31 (IFRSs) (重編前)	2016.12.31 (IFRSs) (重編後)	2017.12.31 (IFRSs)
Cash & Short-Term Investments	259	487	637	2,131
Accounts Receivable	135	160	523	1,825
Current Assets	477	805	1,625	5,350
Long-Term Investments	308	306	292	146
Current Liabilities	123	161	295	2,150
Long-Term Liabilities	124	163	299	3,970
Shareholders' Equity	685	966	966	5,064
Total Assets	809	1,129	2,333	9,100
Book Value Per Share (NT$)	31.15	39.25	39.25	140.26
Current Ratio	387%	498%	550%	249%
Debt Ratio	15%	14%	13%	44%

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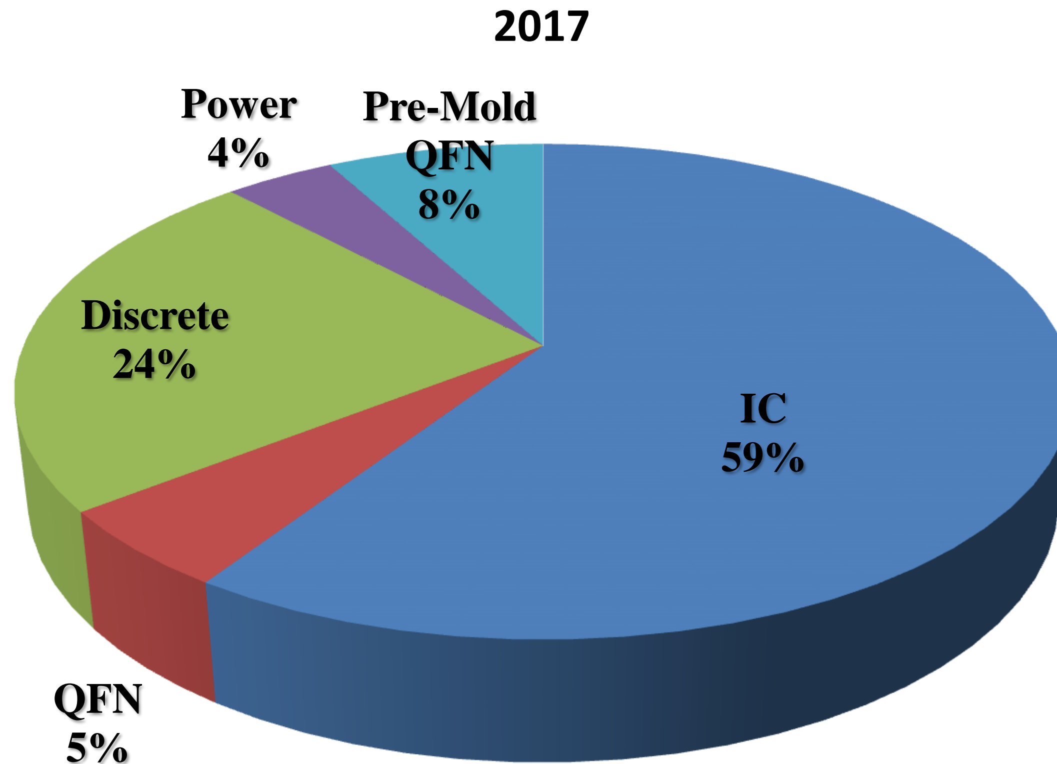
Products Mix-1(Application)



*Classified by sales amount (US$)

IC類：計有 59%，主要為SOP、TSSOP、TSOP及QFP封裝所組成

Discrete類：計有 24%，主要採SOT封裝

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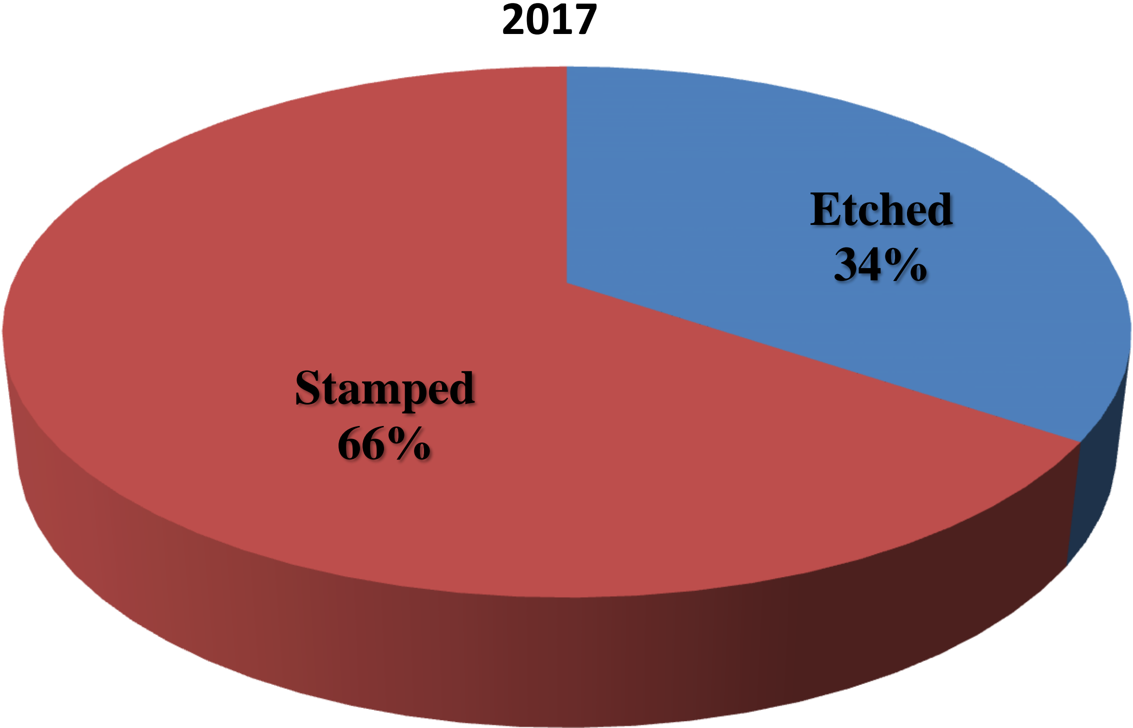
Products Mix-2(Process)



*Classified by sales amount (US$)

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Division and Vision

- Expand QFN Capacity
- TO promo Pre-Mold technology, development of Wettable Flank QFN
- Etching components for other applications
- Industry mergers and acquisitions

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