

***Overview on
Taiwan Semiconductor
Industry
(2019 Edition)***



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Table of Contents

I.	Preface-----	3
II.	Taiwan Semiconductor Industry in 2018 -----	4
	IC Design -----	6
	IC Manufacturing -----	8
	IC Packaging and Testing-----	10
III.	Taiwan IC Market -----	12
IV.	Outlook -----	14
V.	Directory of Taiwan Semiconductor companies-	15

I. Preface

This **Overview on Taiwan Semiconductor Industry** is a translated excerpt from an ITIS (Industrial Technology Information Services) publication, which provides an overview of Taiwan semiconductor industry in 2018. Also included is a directory of Taiwan semiconductor companies. These data should be valuable to those who wish to establish business relationship in Taiwan.

ITIS is a market research project, which is supported primarily by the Taiwan government. For semiconductor portion of the project, research was conducted in Industrial Economics & Knowledge Center of Industrial Technology Research Institute (IEK/ITRI).

Since the establishment of the Electronics Research and Service Organization of the Industrial Technology Research Institute (ERSO/ITRI) in early 1970's and its successive spin-offs of UMC and TSMC in 1980's, the semiconductor industry in Taiwan has been growing at a fast pace. Currently TSIA represents approximately 75.6% of worldwide IC foundry revenue, 55.8% of worldwide package and testing revenue, and 17% of worldwide design revenue. As the industry gains significant role in the global market place, information about Taiwan semiconductor industry is desirable worldwide. TSIA hopes this Overview on Taiwan Semiconductor Industry will serve as a useful reference for our global friends who seek to establish a closer connection with Taiwan semiconductor companies. We welcome your comments.

II. Taiwan Semiconductor industry in Year 2018

Overview of the Year

Taiwan IC industry revenue (including design, manufacturing, packaging, and testing) totaled NT\$2,619.9 billion (about US\$86.8B) in 2018, up 6.4 % from 2017, with NT\$641.3 billion (US\$21.2B) in design, a 3.9% increase, NT\$1,485.6 billion (US\$49.2B) in manufacturing, an 8.6% increase, NT\$1,285.1 (US\$42.6B) in foundry, up 6.6% and NT\$200.5B (US\$6.6B) in memory and other manufacturing, up 23.7%, NT\$344.5 billion (US\$11.4B) in packaging, a 3.5% increase, and NT\$148.5 billion (US\$4.9B) in testing, a 3.1% growth from 2017. (Exchange rate NT\$/US\$ was 30.2.)

Table 1 Revenue of Taiwan IC Industry, 2018

NT\$B	18Q1	18Q1 /17Q4	18Q1 /17Q1	18Q2	18Q2 /18Q1	18Q2 /17Q2	18Q3	18Q3 /18Q2	18Q3 /17Q3	18Q4	18Q4 /18Q3	18Q4 /17Q4	2018	18/17
Industry Revenue	603.2	-10.7%	5.6%	638.2	5.8%	11.5%	691.5	8.4%	7.6%	687.0	-0.7%	1.7%	2,619.9	6.4%
IC Design	137.2	-14.7%	-1.9%	162.2	18.2%	7.7%	177.6	9.5%	7.1%	164.3	-7.5%	2.2%	641.3	3.9%
IC Manufacturing	357.3	-8.1%	11.4%	353.0	-1.2%	15.4%	381.6	8.1%	8.3%	393.7	3.2%	1.2%	1,485.6	8.6%
Foundry	310.4	-9.5%	9.0%	298.7	-3.8%	11.5%	326.3	9.2%	5.1%	349.7	7.2%	2.0%	1,285.1	6.6%
Memory & Other Manufacturing	46.9	2.0%	30.6%	54.3	15.8%	42.1%	55.3	1.8%	31.7%	44.0	-20.4%	-4.3%	200.5	23.7%
IC Packaging	75.5	-13.2%	-1.9%	87.0	15.2%	5.5%	93.0	6.9%	7.5%	89.0	-4.3%	2.3%	344.5	3.5%
IC Testing	33.2	-14.2%	-1.8%	36.0	8.4%	7.5%	39.3	9.2%	3.4%	40.0	1.8%	3.4%	148.5	3.1%
Product Revenue	184.1	-11.0%	4.8%	216.5	17.6%	14.7%	232.9	7.6%	12.0%	208.3	-10.6%	0.7%	841.8	8.0%
WW Revenue (US\$B) & Growth (%)	-	-	-	-	-	-	-	-	-	-	-	-	468.8	13.7%

(e): estimate

Source : TSIA, ISTI-ITRI (June 2019)

Note:

- IC Industry Revenue = IC design + Manufacturing + Packaging + Testing
- IC Production Revenue = IC Design + Memory and Other Manufacturing
- IC Manufacturing Revenue = Foundry + Memory and Other Manufacturing
- Only companies head-quartered in Taiwan are included in the revenue calculations.

Table 2 Revenue of Taiwan IC Industry, 2015-2019

NT\$B	2015	15/14	2016	16/15	2017	17/16	2018	18/17	2019(e)	19/18
Industry Revenue	2,264.0	2.8%	2,449.3	8.2%	2,462.3	0.5%	2,619.9	6.4%	2,585.0	-1.3%
IC Design	592.7	2.8%	653.1	10.2%	617.1	-5.5%	641.3	3.9%	671.8	4.8%
IC Manufacturing	1,230.0	4.9%	1,332.4	8.3%	1,368.2	2.7%	1,485.6	8.6%	1,417.1	-4.6%
Foundry	1,009.3	10.4%	1,148.7	10.4%	1,206.1	5.0%	1,285.1	6.6%	1,287.4	0.2%
Memory & Other Manufacturing	220.7	-14.8%	183.7	-16.8%	162.1	-11.8%	200.5	23.7%	129.7	-35.3%
IC Packaging	309.9	-1.9%	323.8	4.5%	333.0	2.8%	344.5	3.5%	346.3	0.5%
IC Testing	131.4	-4.7%	140.0	6.5%	144.0	2.9%	148.5	3.1%	149.8	0.9%
Product Revenue	813.4	-2.6%	836.8	2.9%	779.2	-6.9%	841.8	8.0%	801.5	-4.8%
WW Revenue (US\$B) & Growth (%)	335.2	-0.2%	338.9	1.1%	412.2	21.6%	468.8	13.7%	454.5	-3.0%

(e): estimate

Source : TSIA, ISTI-ITRI (June 2019)

By the end of 2018, Taiwan Semiconductor industry consisted of 238 IC fabless design houses, 15 fabrication companies, 37 packaging and testing houses, 7 substrate suppliers, 11 wafer suppliers, 3 mask makers, and 4 lead frames companies (Figure 1).

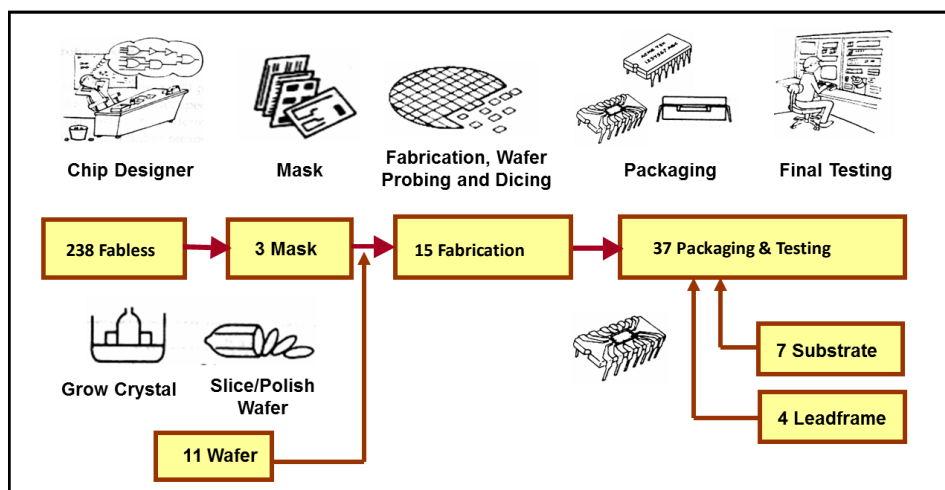


Fig. 1 Unique Infrastructure in Taiwan (2018)

IC Fabless Companies

There were 238 design houses in Taiwan (Table 3) in 2018. Driven by the growing demand for AIoT, Touch/Display Integration (TDDI) IC and TWS, Taiwan IC design revenue was \$641.3 billion, a 3.9% increase from the previous year. Taiwan still follows behind the US as the world's second strongest presence in this field, and accounts for 17.0% of worldwide IC design market. That percentage is expected to raise up to 18.5% in 2019, benefited from the order transferring resulted from the US-China trade war.

Taiwan IC design companies invested NT\$115.5 billion in R&D in 2018, which represented 18.0% of total Taiwan fabless revenue. The R&D expense is expected to increase to NT\$120.0 billion in 2019.

Table 3 Major Indices of Taiwan IC Design Business

	2015	2016	2017	2018	2019(e)
# of Companies	245	240	240	238	238
Revenue(NT\$B)	592.7	653.1	617.1	641.3	671.8
Growth (%)	2.8%	10.2%	-5.5%	3.9%	4.8%
WW Market Share	20.5%	19.4%	18.0%	17.0%	18.5%
WW Ranking	2	2	2	2	2
Value Added (NT\$B)	168.2	163.9	158.9	179.6	185.4
Value Added Rate (%)	28.4%	25.1%	25.7%	28.0%	27.6%
R&D Employee (p)	30,277	29,887	29,555	30,005	30,000
R&D Expense (NT\$B)	99.8	109.0	108.0	115.5	120.0
R&D Expense/ Revenue (%)	16.8%	16.7%	17.5%	18.0%	17.9%
Workforce(P)	42,500	42,000	41,000	41,500	41,500
Average revenue per workforce (NT\$M)	13.9	15.6	15.1	15.5	16.2

Note: (e) stands for estimate

Source : TSIA, ISTE-ITRI (June 2019)

Table 4 Top 10 Fabless Companies in Taiwan, 2018

NT\$B

2018 Ranking	2017 Ranking	Companies	2018 Revenue	2017 Revenue	Growth (%)
1	1	Mediatek	238.1	238.2	-0.1%
2	2	Novatek	54.8	47.1	16.5%
3	4	Realtek	45.8	41.7	9.9%
4	3	PHISON	40.8	41.9	-2.6%
5	5	Himax	21.8	20.8	5.6%
6	6	Silicon Motion	15.9	15.9	0%
7	7	Global Unichip	13.5	12.2	10.7%
8	9	ESMT	11.6	10.5	10.5%
9	11	Raydium	11.0	9.3	17.4%
10	10	Sitronix	10.3	9.4	9.5%

Note: Based on companies' combined revenue.

Source : Company Statement; TSIA, ISTI-ITRI (June 2019)

Table 4 shows the top 10 Taiwan Fabless Companies in 2018. Mediatek remained at the top and generated a revenue of NT\$238.1B in 2018, a slightly decrease of 0.1% from 2017, but still accounted for 37% of Taiwan's IC Design revenue. Novatek came second, generating a revenue of NT\$54.8B, while Realtek came third with a revenue of NT\$45.8B.

IC Manufacturing

As of 2018, there were 15 IC wafer fabrication companies in Taiwan, including foundry companies such as TSMC, UMC, Powerchip, Vanguard, Epasil, Mosel, Lite-on Semiconductor, AMPI, Maxchip, Win Semiconductors, Nuvoton and AWSC; memory manufacturers such as Winbond, MXIC, and Nanya Technology. Inotera was acquired by Micron in 2016 and was not included in this list.

Table 5 Major Indices of Taiwan IC Fabrication Business

	2015	2016	2017	2018	2019(e)
# of Companies	16	16	15	15	15
Revenue(NT\$B)	1,230.0	1,332.4	1,368.2	1,485.6	1,417.1
Growth (%)	4.9%	8.3%	2.7%	8.6%	-4.6%
WW Market Share (Foundry)	70.3%	70.7%	73.2%	75.6%	75.3%
WW Ranking (Foundry)	1	1	1	1	1
Value Added (NT\$B)	844.1	888.4	932.7	1,022.1	975.0
Value Added Rate (%)	68.6%	66.7%	68.2%	68.8%	68.8%
Capital Investment (NT\$B)	392.6	466.0	432.5	401.8	408.8
Capital Investment /Revenue (%)	31.9%	35.0%	31.6%	27.0%	28.9%
R&D Employee (p)	8,907	9,131	8,339	8,414	8,507
R&D Expense (NT\$B)	102.7	135.4	116.4	117.3	119.1
R&D Expense/ Revenue (%)	8.3%	10.2%	8.5%	7.9%	8.4%
Workforce(P)	87,559	88,960	83,392	83,475	83,559
Average revenue per workforce (NT\$M)	14.0	15.0	16.0	18.0	17.0

Source : TSIA, ISTI-ITRI (June 2019)

Communication remained the largest application area in foundry business and comprised around 54.8% of foundry revenue in 2018. Capital expense was NT\$401.8 billion, which accounted for 27.0% of total Taiwan manufacturing revenue and a 4.6% decrease from the year before. Companies became more conservative in capital investment in 2018 due to the uncertainty caused by the

US-China trade war and the fear of potential over supply of memory products. R&D expense, mainly on the development of advanced process technology in 2018, increased slightly to NT\$117.3 billion, which accounted for 7.9% of total manufacturing revenue.

TSMC remained the top IC manufacturing company in Taiwan in 2018, with NT\$1,031.5 billion in revenue, up 5.5% from 2017. UMC remained number two, with revenue increased by 1.3% to reach NT\$151.3 billion.

Table 6 Top 10 Fabrication Companies in Taiwan, 2018

NT\$B

2018 Ranking	2017 Ranking	Companies	2018 Revenue	2017 Revenue	Growth (%)
1	1	TSMC	1,031.5	977.4	5.5%
2	2	UMC	151.3	149.3	1.3%
3	3	Nanya	84.7	54.9	54.3%
4	4	Winbond	51.2	47.6	7.5%
5	5	Powerchip	49.9	46.3	7.8%
6	6	MXIC	37.0	34.2	8.0%
7	7	Vanguard	28.9	24.9	16.2%
8	8	Win Semiconductors	17.3	17.1	1.2%
9	9	Lite-On	12.1	11.5	5.3%
10	10	Nuvoton	10.0	9.2	9.1%

Source : Company Statement, TSIA, ISTI-ITRI (June 2019)

IC Packaging & Testing

As of 2018, there were 37 packaging and testing companies in Taiwan. Revenue reached NT\$493.0 billion, which represented 55.76% of worldwide packaging and testing revenue and ranked number one worldwide, followed by China and the United States.

Table 7 Major Indices of Taiwan Packaging and Testing Industry

	2015	2016	2017	2018	2019(e)
# of Companies	37	37	37	37	37
Revenue (NT\$B)	441.3	463.8	477.0	493.0	496.1
Growth (%)	-2.8%	5.1%	2.8%	3.4%	0.6%
WW Market Share	54.2%	55.5%	55.84%	55.76%	55.28%
WW Ranking	1	1	1	1	1
Value-Added (NT\$B)	200.8	223.1	228.0	232.7	237.6
Value-Added Rate (%)	45.5%	48.1%	47.8%	47.2%	47.9%
Capital Investment (NT\$B)	85.7	95.0	97.5	107.2	104.0
Capital Investment/ Revenue (%)	19.4%	20.5%	20.4%	21.7%	21.0%
R&D Employee (p)	4,250	4,200	4,220	4230	4250
R&D Expense (NT\$B)	16.2	15.2	15.5	15.7	16.5
R&D Expense/Revenue (%)	3.6%	3.3%	3.2%	3.2%	3.3%
Workforce (p)	95,100	97,200	98,800	99,200	99,800
Average revenue per workforce (NT\$M)	4.6	4.8	4.8	5.0	5.0

Source : TSIA, IST-ITRI (June 2019)

Table 8 Top 10 IC Packaging and Testing Companies

NT\$B

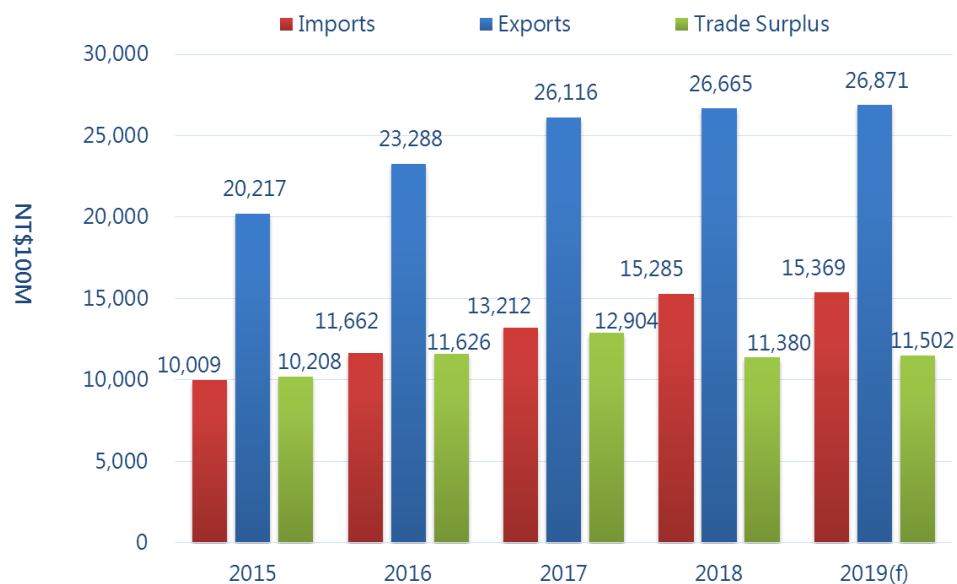
2018 Ranking	2017 Ranking	Companies	2018 Ranking	2017 Ranking	Growth (%)
1	1	ASE	152.5	152.4	0.1%
2	2	SPIL	87.4	83.6	4.5%
3	3	PTI	68.0	59.6	14.1%
4	4	KYEC	20.8	19.7	5.6%
5	5	Chipbond	18.7	18.4	1.6%
6	6	Chipmos	18.5	17.9	3.4%
7	7	OSE	15.2	13.9	9.4%
8	12	Signure	9.5	6.8	39.7%
9	9	FATC	8.8	7.9	11.4%
10	8	OSE	8.6	9.4	-8.5%

Source : Company Statement; TSIA, ISTI-ITRI (June 2019)

Table 8 shows the top 10 Taiwan packaging and testing companies in 2018. Total revenue of top 5 (ASE, SPIL, PTI, KYEC, and Chipbond) companies comprised 70.49% of total Taiwan packaging and testing revenue and revenue of top 10 comprised 81.04%, demonstrating the dominance of the top companies in the industry.

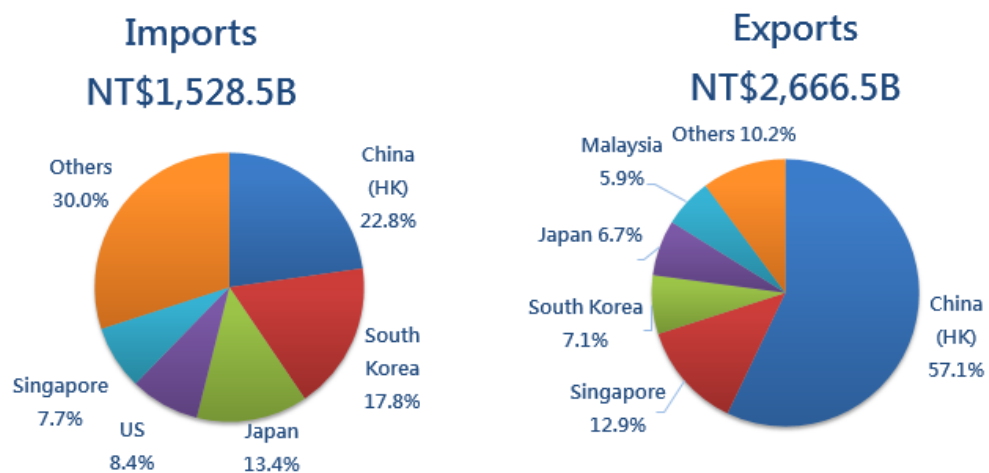
III. Taiwan IC Market

In 2018, imported ICs increased 15.7% to NT\$1,528.5 billion (NT\$1,321.2 in 2017) and exported ICs increased 2.1% to NT\$2,666.5 billion (NT\$2,611.6B in 2017). Major import countries of Taiwan in 2018 were China (including HK), South Korea, Japan, The US, and Singapore. Major export countries of Taiwan were China (including HK), Singapore, South Korea, Japan, and Malaysia. Surplus was NT\$1,138.0 billion in 2018, down 11.8%% on-year and is expected to increase 1.1% to reach NT\$1,150.2 billion in 2019.



Source : Taiwan Customs ; TSIA, ISTI-ITRI (June 2019)

Figure 2 Import/Export Value of Taiwan IC Market



Source : Taiwan Customs ; TSIA, ISTI-ITRI (June 2019)

Figure 3 Major Import/Export Regions of Taiwan IC Market

In 2018, Taiwan imported the most from China (including HK) (22.8%) followed by South Korea (17.8%), Japan (13.4%), the United States (8.4%), and Singapore (7.7%).

In terms of exports in 2018, Taiwan exported the most to China (including HK) with 57.1%, followed by Singapore (12.9%), South Korea (7.1%), Japan (6.7%) and Malaysia (5.9%).

IV. Outlook

Taiwan Semiconductor revenue (including design, manufacturing, packaging, and testing) is expected to reach NT\$2,585.0 billion in 2019, down 1.3% from 2018 due to the impact of the US-China trade war, with NT\$671.8 billion in design, a 4.8% increase, NT\$1,417.1 billion in manufacturing, a 4.6% decline, and NT\$496.1 billion in packaging and testing, a 0.6% increase.

V. Directory of Taiwan Semiconductor Companies

Fabless

5V Technologies

TEL:886-2-27888118

FAX:886-2-27887366

www.5vtechnologies.com

AAT

TEL:886-3-6209588

FAX:886-3-6209599

www.aat-ic.com

ACARD

TEL:886-2-85122290

FAX:886-2-85122548

www.acard.com

AccFast

TEL:886-3-6662756

FAX:886-3-6662758

www.accfast.com.tw

AIC

TEL: 886-3-5772500

FAX:886-3- 5772510

www.analog.com.tw

AiT

TEL:886-2-26961202

FAX:886-2-26961201

www.ait-ic.com

Airoha

TEL: 886-3-6128800

FAX:886-3- 6118833

www.airoha.com.tw

Alchip Technologies

TEL: 886-2-27992318

FAX:886-2-27997389

www.alchip.com

Alcor Micro

TEL:886-2-26535000

FAX:886-2-26534000

www.alcormicro.com

AlfaPlus

TEL:886-3-5163270

FAX:886-3-5163267

www.alfaplus.com.tw

ALI

TEL:886-2-87522000

FAX:886-2-87511001

www.ali.com.tw

Alpha

TEL:886-3-5736660

FAX:886-3-5736661

www.ealpha.com.tw

Altus

TEL:886-37-586860

www.altus-tech.com

Amazing Microelectronic

TEL:886-2-82278989

FAX:886-2-82278969

www.amazingic.com

AMIC

TEL:886-3-5679966

FAX:886-3-5679977

www.amictechnology.com

AMICCOM

TEL:886-3-5601717

FAX:886-3-5601715

www.amiccom.com.tw

Amtek

TEL:886-2-29998989

FAX:886-2-29992929

www.amtek-semi.com

AnaGlobe

TEL:886-3-5613650

FAX:886-3-5612310

www.anaglobe.com.tw

ANDES

TEL:886-3-5726533

FAX:886-3-5726535

www.andestech.com

ANPEC

TEL:886-3-5642000

FAX:886-3-5642050

www.anpec.com.tw

AnSC

TEL:886-3-6669898

FAX:886-3-5632246

www.ansc.com.tw

AP Memory TEL:886-3-5601588 FAX:886-3-5601518 www.apmemory.com.tw	APEC TEL:886-3-6215899 FAX:886-3-6215999 www.a-power.com.tw	APLUS TEL:886-2-27829266 FAX:886-2-27829255 www.aplusinc.com.tw
Appo Tech TEL: 886-3-5719960 FAX: 886-3-5719969 www.appotech.com	ASIX TEL:886-3-5799500 FAX:886-3-5799558 www.asix.com.tw	Asmedia TEL:886-2-22196088 FAX:886-2-22196080 www.asmedia.com.tw
Asolid TEL:886-3-5736032 FAX:886-3-5736300 www.asolid-tek.com	ASPEED TEL:886-3-5789568 FAX:886-3-5789586 www.aspeedtech.com	ASUKA TEL:886-3-6667117 FAX:886-3-6667104 www.asuka-mobile-tv.coms
ATECH TEL:886-2-82215488 FAX:886-2-82215489 www.8tec.com	AuMOS TEL:886-3-5790567 FAX:886-3-5775909 www.aumos.com.tw	AverLogic TEL:886-2-87523988 FAX:886-2-87523989 www.averlogic.com
AVID TEL:886-3-5795222 FAX:886-3-5787789 www.avid.com.tw	Avisonic TEL:886-3-5778077 FAX:886-3-6661301 www.avisonic.com	AviQ TEL:886-3-5225019 FAX:886-3-5225839 www.aviqtech.com
AXElite TEL:886-3-5776662 FAX:886-3-5788661 www.axelite.com.tw	BiTEK TEL:886-2-77082528 FAX:886-2-77081258 www.bitek.com.tw	BEST SOLUTION INC. TEL:886-2-26558797 FAX:886-2-26558796 www.bestsolution.com.tw
CDT TEL:886-2-22994908 FAX:886-2-22990133 www.cdt.com.tw	CFP TEL:886-2-22326558 FAX:886-2-22327558 www.cfpt.com.tw	Champion TEL:886-3-5679979 FAX:886-3-5679909 www.championmicro.com.tw
CHESEN TEL:886-2-82265589 FAX:886-2-82265181 www.chesen.com.tw	Chip Goal TEL:886-3-5169219 FAX:886-3-5169197 www.chipgoal.com	Chip Hope TEL:886-2-82271166 FAX:886-2-822711296 www.chiphope.com

CHIPMAST

TEL:886-3-5510850

FAX:886-3-5510860

www.chipmast.com.tw**C-Media**

TEL:886-2-87731100

FAX:886-2-87732211

www.cmmedia.com.tw**CTC**

TEL:886-3-5311161

FAX:886-3-5338403

www.ctcasic.com.tw**Davicom**

TEL:886-3-5798797

FAX:886-3-5646929

www.davicom.com.tw**Dorado**

TEL:886-3-5730608

FAX:886-3-5735136

www.dorado-da.com**EE Solutions**

TEL:886-3-5678568

FAX:886-3-5678611

www.e2-solutions.com.tw**ELAN**

TEL:886-3-5639977

FAX:886-3-5639966

www.emc.com.tw**ENE**

TEL:886-3-6662888

FAX:886-3-6662999

www.ene.com.tw**CHiPLUS**

TEL:886-3-5637887

FAX:886-3-5637877

www.chiplus.com/tw/**CMSC**

TEL:886-3-5634866

FAX:886-3-5634863

www.cmssc.com.tw**CYRUSTEK**

TEL:886-3-5910216

FAX:886-3-5910217

www.cyrustek.com.tw**DenMOS**

TEL:886-3-5665886

FAX:886-3-5665809

www.denmos.com.tw**E-CMOS**

TEL:886-3-5785888

FAX:886-3-5783630

www.ecmos.com.tw**EETI**

TEL:886-2-87515191

FAX:886-2-27978808

www.eeti.com**ELANsat**

TEL:886-3-5635105

FAX:886-3-5635107

www.elansat.com**EOREX**

TEL:886-3-5585138

FAX:886-3-5585139

www.eorex.com**CHIPSIP**

TEL:886-2-82271799

FAX:886-2-82271798

cht.chipsip.com**CoAsia**

TEL:886-2-26557699

FAX:886-2-26557189

www.coasia.com.tw**DATARiT**

TEL:886-3-6589597

FAX:886-3-6589902

DIGIWELL

TEL:886-3-5782910

FAX:886-3-5639464

www.digiwell.com.tw**E-COM**

TEL:886-2-22180516

FAX:886-2-22180780

www.eecom.com.tw**Egis Technology**

TEL:886-2-26589768

FAX:886-2-26588368

www.egistec.com**eMemory**

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FAX:886-3-5632148

www.epi.episil.com**PSi**

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FAX:886-3-5670888

www.psi.com.tw

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TEL:886-3-3852130

FAX:886-3-3852120

www.sanchih.com.tw**Sellingware**

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FAX:886-3-5601077

www.sellingware.com.tw**Shin-Etsu**

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www.shinetsu.com.tw**Sino-American**

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www.saswafer.com**Waferworks**

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FAX:886-3-4815002

www.waferworks.com**Mask****PDMC**

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FAX:886-3-5678158

www.pdmc.com.tw**TCE**

TEL:886-3-3643300

FAX:886-3-3649911

www.tce.com.tw**TMC Mask Corp.**

TEL:886-3-5634370

FAX:886-3-5780752

www.tmcnet.com.tw**Discrete****LITE-ON**

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www.liteon-semi.com**Mospec**

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www.mospec.com.tw**Prosperity**

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FAX:886-2-22683703

www.rectron.com.tw**Taiwan Semiconductor**

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www.ts.com.tw**Vishay**

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FAX:886-2-29160846

www.vishay.com**Zowie**

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FAX:886-2-22191133

www.zowie.com.tw

Opto-Semiconductor

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www.aocepi.com

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FAX:886-2-82271855

www.cosmo-ic.com

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FAX:886-2-82211336

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FAX:886-2-26856699

www.everlight.com

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www.epistar.com.tw

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www.kingbright.com

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www.hw.com.tw

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www.ledtech.com.tw

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www.ligitek.com

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www.liteon.com

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www.opto.com.tw

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www.tyntek.com.tw

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www.uocnet.com

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www.avery-design.com

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www.cadence.com.tw

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www.incentia.com.tw

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www.mentorg.com.tw**Silvaco Taiwan**

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FAX:886-3-5679682

www.silvaco.com**Synopsys**

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www.synopsys.com