



**Global and China IC Substrate Industry  
Report, 2014-2015**

**Jul. 2014**

## STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

## REPORT OBJECTIVES

- ◆ To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- ◆ To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- ◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- ◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- ◆ To help company to succeed in a competitive market, and

## METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

## INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

## Abstract

Global and China IC Substrate Industry Report, 2014-2015 contains the followings:

1. Status quo of global semiconductor industry
2. Introduction of IC substrate
3. Analysis on IC substrate market
4. Analysis on IC substrate industry
5. Research on 11 IC substrate vendors
6. Research on the world's top 4 IC substrate packaging companies.

PCB (printed circuit board) industry can be divided into three broad categories i.e. rigid PCB, flexible PCB (FPCB) and substrate. IC substrate industry suffered a continuous decline in 2012 and 2013, rooted in two aspects: first, the PC shipment declined, and CPU substrate as the main type of IC substrate enjoyed the highest average selling price (ASP); second, to suppress the development of Japanese and Taiwanese IC substrate vendors, Korean companies slashed price, Samsung Electro-Mechanics (SEMCO), in particular, implemented a nearly 30% price cut. This led to the global IC substrate industry market scale down 10.3% to USD7.568 billion in 2013. But after suffering comes happiness, IC substrate industry is expected to bloom in 2014 and 2015.

**Revenue of Major IC Substrate Vendors, 2010-2014**

	2010	2011	2012	2013	2014E
<b>UNIMICRON</b>	983	910	925	747	790
<b>IBIDEN</b>	1,581	1,602	1,650	1,110	1,230
<b>NANYA</b>	914	980	645	702	908
<b>KINSUS</b>	556	794	694	746	820
<b>SEMCO</b>	927	1,144	1,230	1,020	1,008
<b>SHINKO</b>	1,133	1,059	870	980	1,009
<b>SIMMTECH</b>	264	294	336	316	380
<b>DAEDUCK</b>	136	230	275	258	240
<b>NGK</b>	450	220			
<b>KYOCERA</b>	330	302	286	260	308
<b>LG INNOTEK</b>	130	146	110	145	159
<b>ASE</b>			174	192	218
<b>Others</b>	479	560			

Unit: USD mln

There are several factors for the growth in 2014.

- ⇒ First, MediaTek's 8-core MT6592 adopts FC-CSP packaging. Released in October 2013, the chip will see shipment boost-up in 2014. Entering the age of 28nm, MediaTek will ensure uniform adoption of FC-CSP packaging; Spreadtrum from Mainland China will follow in its footsteps.
- ⇒ Second, LTE 4G networks are under construction, thereof IC substrate is needed by BASESTATION chip.
- ⇒ Third, wearable devices are invading the market, which will stimulate SiP module packaging, also needs IC substrate.
- ⇒ Fourth, the pursuit of ultra-thin mobile phone requires chip with good heat dissipation, FC-CSP packaging boasts obvious advantages in terms of heat dissipation and thickness. Main chip for mobile phone of the future will be the FC-CSP packaging or SiP module packaging, involving power management and memory.
- ⇒ Fifth, PC industry will revive in 2014. Tablet PC will not see high growth, even fall in 2014, since consumers have been aware of its function only as a toy but completely unable to compare with PC in performance, PC industry will usher in recovery. At last, SEMCO will not fall back on price-cutting competition, because it is Taiwan's TSMC not Samsung Electronics that on track to produce Apple's next-generation processor A8. Even slashing price, it is impossible for TSMC to turn over the order.

The global IC substrate industry market scale is expected to grow at a rate of 9.8% in 2014, and then speed up to 11.6% in 2015.

IC substrate industry falls into three camps i.e. Japan, Korea and Taiwan. Japanese companies as the IC substrate pioneer have the strongest technical strength, mastering the most profitable CPU substrate. Korean and Taiwanese companies rely on the industrial chain cooperation, the former hold about 70% of the world's memory capacity, the Apple's processor foundry provider Samsung also can produce part of mobile phone chips.

Taiwanese companies are more powerful in the industrial chain by possessing 65% of global foundry production capacity and 80% of senior mobile phone chip foundry (by TSMC or UMC), whose margin is much higher than that of traditional electronic products, (gross margin) exceeding 50%. MediaTek's MT6592, for instance, the foundry is charged by TSMC or UMC, the packaging is completed by ASE and SPIL, the substrate is offered by Kinsus and testing by KYEC; sharing the same factory, these vendors are pretty high-efficient.

The utterly disadvantaged Mainland Chinese companies in the industrial chain lack support from foundries and packaging companies, lagging behind Taiwanese counterparts several even a dozen years. Even Hisilicon and Spreadtrum have impressive shipments, Taiwanese companies still hold the discourse right of the supply chain.

### **1. Global Semiconductor Industry**

- 1.1 Overview
- 1.2 IC Packaging
- 1.3 IC Packaging and Testing

### **2. IC Substrate**

- 2.1 Introduction
- 2.2 Flip Chip IC Substrate
- 2.3 Trends

### **3. IC Substrate Market and Industry**

- 3.1 IC Substrate Market
- 3.2 Mobile Phone Market
- 3.3 WLCSP Market
- 3.4 PC Market
- 3.5 Tablet PC Market
- 3.6 FPGA and CPLD Market
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- 3.8 Wafer Foundry Market Size
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