Global and China IC Substrate Industry Report, 2011-2012

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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 NBS(National Bureau of Statistics of China), Wind, and Ministry of Industry and Information Technology of the P.R. China etc .

Abstract

With the improvement of IC operating frequency and integration, traditional leadframe packaging is out of use, and IC has to be packaged by substrates. By packaging mode, the mainstream IC substrates include BGA (Ball Grid Array), CSP (Chip Scale Package) and FC (Flip Chip), of which the latter two now prevail.

In 2012, the global IC substrate market will value USD8.67 billion. IC substrates mainly find application in PC, mobile phone and base station, particularly PC is the biggest consumer. Inside PC, CPU, GPU and Northbridge IC all employs FC-BGA packaging, featuring large packaging area, many layers and high unit price. CPU and GPU of smartphones use FC-CSP packaging, so does CPU of some feature phones. In addition to CPU and GPU, most of the IC in mobile phone (such as Bluetooth / WiFi / FM, CMOS image sensor, USB controller, GPS, Touch Screen Controllers, Audio Codec, MOSFET, DC / DC converter) adopt WLCSP packaging. The mobile phone IC shipment is huge, but with the small sized substrates, the mobile phone IC substrate has a far smaller market size than the PC IC substrate.

IC substrate vendors are principally PCB manufacturers, yet the direct customers of IC substrate are the IC packaging companies. IDMs or IC Foundries produce IC die at first; then, packaging companies complete IC packaging; next, the products are delivered to IC design companies or IDMs, and finally shipped to electronics manufacturers. In general, packaging companies exerts greatest influence on substrate suppliers.

Taiwan IC packaging and testing industry ranks first in the world, with 56% market share, while Chinese Mainland packaging and testing industry just shares 3%. The reason why Taiwan has the developed IC packaging and testing industry lies in that Taiwan boasts the globally largest wafer foundries. 60% of the 50 nm (or below 50 nm) IC business is undertaken by TSMC. Nearly all IC in smart phones is fabricated by TSMC and UMC. Three out of the global top four packaging and testing corporations are from Taiwan. In the global IC substrate packaging market, Taiwanese players sweep more than 70% share.

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Japanese manufacturers occupy the market of CPU, GPU and Northbridge IC substrate for PC. In 2012, NGK quitted, and its market share was taken by Taiwan's Nanya PCB. Also, Japanese companies reign in the high-end market, they develop the FC-BGA technology with Intel and their positions remain quite stable. IBIDEN is building a base in the Philippines to lower prices. IBIDEN and Shinko focus on ABF substrates, both of which take no interest in BT substrates in the field of communications.

When it comes to the South Korean manufactures, SEMCO involves in the widest range of business. On the one hand, it obtains many orders from Qualcomm and Samsung Electronics. On the other hand, SEMCO also receives a small portion of orders from Intel or AMD. SIMMTECH, also a leading memory PCB maker, is mainly engaged in the memory substrate packaging. Memory PCBs will apply substrate packaging widely, in particular all of MCP memory PCBs may utilize substrate packaging in 2013.

Among Taiwanese manufacturers, Nanya PCB takes Intel as its major client, while Kinsus is a PCB supplier for Qualcomm and Broadcom, 90% shipment of which goes to BT substrate.

Revenue of Major IC Substrate Manufacturers, 2010-2011 (USD mln)

Manufacturer	2010	2011
UNIMICRON	983	910
IBIDEN	1,581	1,602
NANYA	914	980
KINSUS	556	794
SEMCO	927	1,144
SHINKO	1,133	1,059
SIMMTECH	264	294
DAEDUCK	136	230
NGK	450	220
LG INNOTEK	330	346

Source: Global and China IC Substrate Industry Report, 2011-2012

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