



**Global and China Automotive PCB Industry  
Report, 2014-2015**

**Oct. 2015**

## 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 Automotive PCB Industry Report, 2014-2015 highlights the followings:

1. Global and China's automobile market and industry
2. Downstream market of automotive PCB
3. Automotive PCB Industry and Market
4. 19 Automotive PCB companies

Global automotive PCB market size was around USD4.96 billion in 2014, and is expected to grow by 6.5% to USD5.28 billion in 2015, compared with an overall global PCB market scale of roughly USD59.6 billion in 2014 and an estimated growth of 0.8% in 2015. Automotive PCB is the fastest-growing field in PCB industry, and will sustain the momentum until at least 2019.

In automotive PCB field, powertrain holds the largest proportion, about 32% for the time being, including mainly Engine Control Unit, Starter, Alternator, Transmission Control, Fuel Injection, and Power Steering. For xEV, complexity, high voltage, high current and high temperature of Inverter and Converter pose extremely high requirements on PCB. Powertrain seizes over 50%, followed by Body with about 25% (primarily Lighting, HVAC, Power Door & Seat, Keyless, and TPMS). LED lighting, which enjoys a high share, is highly demanding on PCB, usually adopting MCPCB (Metal Core PCB). Thirdly, Safety systems, consisting mainly of ADAS, ABS, and Airbag, make up about 22%. The last is Cockpit systems, mainly covering Instrument Display and Infotainment.

Automotive PCB has exceedingly high requirement on reliability, creating the biggest threshold. Recall system in automobile industry requires makers to take risks of faulty products. As small makers cannot afford this, they are usually ruled out. Challenges for automotive PCB include reliability, high temperature, high frequency, and high current.

PCBs in automotive engine and gearbox need to withstand high temperature above 150°C, so ceramic substrates must be used, for ceramic multi-layer substrate contains mainly alumina (Al<sub>2</sub>O<sub>3</sub>) and aluminum nitride (AlN). High temperature co-fired ceramic (HTCC) PCB is usually sintered at temperature of over 1600°C, and the conductor is high-melting point tungsten or molybdenum, which can be sintered together at the same time. Japanese Murata puts forward low temperature co-fired ceramic (LTCC), which finds few applications. Ceramic substrates are mostly supplied by Japanese KYOCERA and U.S. Rogers. PCBs used by European and U.S. carmakers are largely provided by German Schweizer, Duwel, and Würth, and U.S. TTM. Japanese carmakers are mainly served by CMK and Meiko.

Automotive safety systems, especially ABS, generally adopt MCPCB (Metal Core PCB). Automotive ADAS needs to use a large quantity of radar which finds shipment of 19 million sets in 2014 and is expected to reach 96 million sets in 2020.

In this case, high-frequency PCB will be employed. The PCB usually needs PTFE ceramic and can only be done by the companies (mainly from U.S. Europe and Japan) that are very experienced in RF. xEV is developing rapidly, especially after the outbreak of scandal over VW cheating pollution emissions tests.

Supply of cockpit PCBs are almost taken on by Taiwanese companies. HDI may be needed, as Infotainment becomes more complicated and the size of screen larger. Moreover, the number of automotive displays used also increases, like BMW 7 series using up to 7 displays for each vehicle. All these factors fuel a robust market.

**Automotive PCB Suppliers, 2013-2015**

USD mln	2013	2014	2015	
<b>ChinPoon</b>	472	518	558	Taiwan
<b>TTM (including Viasystem)</b>	410	430	438	USA
<b>CMK</b>	444	404	390	Japan
<b>KCE</b>	290	347	388	Thailand
<b>Meiko</b>	381	365	360	Japan
<b>NOK</b>	260	288	328	Japan
<b>Tripod</b>	160	188	220	Taiwan
<b>AT&amp;S</b>	150	152	153	Austria
<b>Unitech</b>	102	128	130	Taiwan
<b>WUS</b>	97	106	120	Taiwan
<b>Schweizer</b>	92	100	116	Germany
<b>Kyoden</b>	90	100	112	Japan
<b>ELNA</b>	110	108	102	Japan
<b>Liang Dar</b>	91	98	100	Taiwan
<b>DDPI(Daeduck)</b>	76	82	96	Korea
<b>KG Board</b>	90	98	88	HK
<b>Duwei (Unimicron)</b>	71	80	86	Taiwan
<b>Shirai</b>	70	78	82	Japan
<b>3CEMS</b>	70	75	80	Taiwan
<b>Würth</b>	50	60	70	Germany
<b>Ellington</b>	45	50	53	China

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