

# Global and China CCM (CMOS Camera Module) Industry Report, 2015

Jan. 2016

## 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 CCM (CMOS Camera Module) Industry Report, 2015 highlights the followings:

1. Introduction to CMOS camera module (CCM)
2. CMOS Image Sensor (CIS) market and industry
3. Optical lens industry and market
4. Technological trends of CCM
5. 7 CIS vendors
6. 15 Lens vendors
7. 23 CCM vendors

Global CCM market size was worth USD16.247 billion in 2015, a year-on-year rise of 3.8% from 2014, the slowest rate since 2010. It is expected that growth rate will continue to decelerate in 2016, only 1.3%, but bounce back slightly to 1.6% in 2017 with a market size of USD16.732 billion.

There were several reasons for slowdown. First, the world was plagued by high deflation rates and currencies like Japanese yen, Korean won and NTD depreciated greatly. Second, the mobile phone market slowed and has become almost saturated. Smartphone market can still maintain the expansion in 2015 and may be afraid to be flat or start declining in 2016. Third, the competition, especially that in Chinese mainland market, was intense. Despite continued upgrading of CCM pixel (mostly 13M pixels for rear CCM), the ASP didn't rise but slip down. As more and more vendors enter the CCM field with OIS and high-performance AF, a price plunge is inevitable.

In CIS field, shipments are expected to amount to 4,196 million units in 2015 and 4,390 million units in 2016, up 8.8% and 4.6% against the previous year, respectively, compared with annual growth of 11.5% in 2014, indicating a further slowdown. The market size is predicted to be USD9.16 billion in 2015 and USD9.628 billion in 2016, a year-on-year rise of 4.6% and 5.1%, respectively, compared with annual increase of 10.7% in 2014. Except for On-Semi, Sony and Sharp, all other vendors experienced declines. Sony acquired Toshiba's CIS business, further consolidating its hegemony and its first place by performance, and will keep growing rapidly in 2016. On-Semi is a bellwether in automotive CIS field, seizing nearly 50% market share. As integration went well very after acquisition of Aptina by On-Semi, combined with explosive growth in automotive camera market, On-Semi embraced rapid development in its CIS business, and is expected to record revenue of USD720 million in 2015, including USD400 million from automotive field, a surge of more than 100%.

Largan Precision still outshined others in Lens field with high-speed growth, while the rest of vendors almost all suffered setback in Lens business, except for the vendors with automotive Lens business which witnessed significant growth in such field but with a low ASP. Sunny Optical still ranked first globally in automotive Lens; Kantatsu, a subsidiary of Sharp, made its way into the supply chain of Apple with considerable performance growth.

### Ranking of CCM Vendors by Revenue, 2010-2015

| USD mln     | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  |
|-------------|-------|-------|-------|-------|-------|-------|
| FOXCONN     | 902   | 1,011 | 857   | 703   | 610   | 520   |
| SEMCO       | 580   | 737   | 1,448 | 1,893 | 1,550 | 1,762 |
| SHARP       | 653   | 774   | 790   | 1,037 | 1,290 | 1,920 |
| LG-INNOTEK  | 508   | 1,098 | 1,475 | 2,304 | 2,608 | 2,525 |
| VISTA POINT | 208   | 188   | 210   | 200   | 160   | 210   |
| LITEON      | 278   | 413   | 776   | 1,108 | 1,251 | 1,050 |
| BYD         | 160   | 170   | 238   | 255   | 260   | 250   |
| TRULY       | 98    | 108   | 151   | 292   | 332   | 280   |
| CHICONY     | 366   | 425   | 437   | 355   | 362   | 286   |
| PRIMAX      | 198   | 276   | 368   | 490   | 495   | 571   |
| TOSHIBA     | 502   | 478   | 460   | 371   | 310   | 220   |
| STMICRO     | 597   | 615   | 460   | 360   | 280   | 260   |
| Patron      | 90    | 194   | 560   | 704   | 501   | 517   |
| SAMSUNG     | 310   | 320   | 362   | 350   | 360   | 320   |
| Sunny       | 158   | 186   | 380   | 713   | 1,105 | 1,245 |
| KMOT        | 160   | 140   | 267   | 10    |       |       |
| Cowell      | 70    | 323   | 528   | 814   | 887   | 1,018 |
| CAMMSYS     | 124   | 167   | 233   | 345   | 376   | 375   |
| Powerlogic  | 90    | 156   | 170   | 246   | 288   | 280   |
| MCNEX       | 130   | 165   | 155   | 271   | 389   | 463   |
| O-FILM      |       |       |       | 90    | 446   | 632   |
| Q-TECH      |       | 40    | 102   | 228   | 355   | 323   |
| SONY        |       |       |       | 390   | 480   | 420   |
| OTHERS      | 1,528 | 1,368 | 1,390 | 1,028 | 950   | 820   |

Japanese companies dominated OIS market with Alps and Mitsumi tied for the first place and both being major suppliers for Apple. In addition, Mitsumi also aggressively marched into Chinese mainland market, planning to invest JPY25 billion to expand capacity over the next two years with the aim of competing for the global champion with Alps.

Bi-Direction and Close-Loop have become two main technologies in VCM field. Japanese vendors exited from low-end VCM field and focused on OIS or Bi-Direction and Close-Loop. The emergence of mainland Chinese companies in low-end market resulted in fierce competition.

In an increasingly competitive CCM field, the majority of companies were caught in the price war and the market became more concentrated. Many vendors registered higher shipments but smaller revenue, even the number of pixel increased. Sharp, performing the best, became the second largest supplier for Apple that placed more orders with Sharp so as to reduce its reliance on LG-INNOTEK, but LG-INNOTEK was still the largest supplier for Apple and ranked first by revenue globally. Cowell, the third largest supplier for Apple, also did very well, and was one of few companies with improved gross margin. SEMCO won more orders from Samsung. Sunny Optical, the No. 1 mainland Chinese vendor, maintained the momentum of strong growth but with a stagnant gross margin, and started shifting its focus to Lens field in the hope of raising its overall growth margin. LITEON selectively gave up low-end business and saw a decline in orders from its major customer Samsung, leading to a collapse in revenue. MCNEX found strong growth in revenue by relying on automotive business.

### 1 CCM Industry

- 1.1 CCM Industry Chain
- 1.2 CMOS Image Sensor Industry
- 1.3 CMOS Image Sensor Market
- 1.4 Market Share of CMOS Image Sensor Vendors
- 1.5 Chinese CMOS Image Sensor Market
- 1.6 Optical Lens Industry
- 1.7 CCM Industry
- 1.8 Relationship between CCM and Brand Vendors
- 1.9 Introduction to AFA (VCM)
- 1.10 AFA (VCM) Industry Pattern
- 1.11 VCM Industry in China
- 1.12 Introduction to OIS
- 1.13 Mobile Phone OIS Market
- 1.14 Automotive Camera Module Market
- 1.15 Market Share of Major Automotive Camera Module Vendors

### 2 CCM Market

- 2.1 Global Mobile Phone Market
- 2.2 Global Smartphone Market
- 2.3 Chinese Mobile Phone Market
- 2.4 Laptop Computer Market
- 2.5 Tablet PC Market
- 2.6 Development Trend of Mobile Phone Camera
  - 2.6.1 Improvement in Speed of Focusing
  - 2.6.2 Shooting in Dim Light
  - 2.6.3 4K
  - 2.6.4 Rotary, Array, Dual Camera
  - 2.6.5 Curved CMOS Sensor

### 3 CIS Vendors

- 3.1 Samsung Electronics
- 3.2 Omnivision
- 3.3 APTINA (ON-SEMI)
- 3.4 Sony
- 3.5 Toshiba
- 3.6 Galaxycore
- 3.7 SuperPix Micro Technology

### 4 Optical Lens Vendors

- 4.1 Largan
- 4.2 GSEO
- 4.3 Asia Optical
- 4.4 Newmax
- 4.5 Ability Opto-Electronics Technology
- 4.6 KANTATSU
- 4.7 Hitachi Maxell
- 4.8 DIOSTECH
- 4.9 SEKONIX
- 4.10 Korea Optical
- 4.11 FUJINON
- 4.12 GLORY
- 4.13 HOKUGANG
- 4.14 KMOT
- 4.15 Digital Optics

### 5 Camera Module Vendors


- 5.1 Chicony
- 5.2 Vista Point Technologies
- 5.3 Hon Hai

- 5.4 LG INNOTEK
- 5.5 Mitsumi Electric
- 5.6 Truly Opto-Electronics
- 5.7 BYD Optical
- 5.8 Lite-On
- 5.9 Primax
- 5.10 SEMCO
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- 5.12 Sunny Optical
- 5.13 CAMMSYS
- 5.14 Powerlogics
- 5.15 MCNEX
- 5.16 Cowell
- 5.17 O-film
- 5.18 Q-TECH
- 5.19 Globaloptics
- 5.20 Shine Tech
- 5.21 Sharp
- 5.22 STMicroelectronics
- 5.23 Others
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### 6 AFA Vendors

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- 6.2 JAHWA Electronics

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