

Global Mobile Phone Industry Chain Report, 2007-2008



The components of a mobile phone can be divided into four major categories.

The first category is the active components. The so-called active components, mainly composed of semiconductor and display, refer to those whose physical and chemical properties change when electrified. More than 50 percent of the total cost of a mobile phone comes from semiconductor, production of which is under the control of European and American companies. The active components include baseband, memory, application processor, power management, RF and camera module. Baseband can be classified into analog baseband and digital baseband, the two of which are as usual integrated and sometimes isolated.

Baseband is the key component of a mobile phone with the highest technical content. Only a few manufacturers possess the technology, including TI (a major supplier for Nokia and SonyEricsson), NXP (a key supplier for Samsung), Freescale (a main supplier for Motorola), Agere (a key supplier for Samsung), MTK (a main supplier for producers on Mainland China), ADI (a key supplier for LG and Sharp), Qualcomm (a leader in CDMA baseband with a market share of over 80%), EMP, Infineon, Broadcom, Skyworks, Toshiba and NEC.

Apart from baseband, memory is the second most expensive semiconductor component. In the high-priced handset, memory is the most expensive component, whose suppliers consist of Samsung, Spansion, Intel, Toshiba and STMicroelectronics. RF mainly includes power amplifier and transceiver, key power amplifier suppliers are composed of RFMD, Skyworks, Renesas and Freescale, while major transceiver suppliers include Qualcomm, STMicroelectronics, Infineon, TI, Renesas, Philips, RFMD and Skyworks.

Semiconductor component producers have a high threshold particularly in RF and analog IC fields with the highest gross profit margins, the global market of which is controlled by American and European manufacturers. The average gross profit margin is between 30% and 40%, and the gross profit margin of analog IC reaches 70%, the highest in the electronic industry. MTK is a recent dark horse in the market, grabbing vigorously handset market on the mainland, and it has got access to the supply chain of LG. The gross profit margin of MTK is also above 40%.

The second category is the passive components, which refer to the components that do not have physical and chemical changes when electrified, mainly including capacitor, inductor and resistor. Capacitor inside a mobile phone is a special MLCC capacitor, and resistor and inductor are also special chip inductor and chip resistor. The major suppliers include Murata, TDK, Kyocera, Taiyo Yuden, Panasonic and Rohm from Japan and Yageo, TA-I, Ralec, Chilisin and Walsin from Taiwan. In the field of passive components, the Japanese manufacturers dominate the high end market, while the Taiwanese counterparts control the low-end market. The Taiwanese producers are eroding the market of Japanese producers, forcing the latter to continuously upgrade its technology to develop high-end products. The gross profit margin of Taiwanese producers remains at about 10%, while that of Japanese manufacturers is at about 15-20%.

The third category is the structure components, which mainly refer to mobile phone cases and PCB board. Producers of mobile phone case include Green Point, Perlos, Nalato, Nypro, Foxconn, HI-P, Unikun and Biente, while PCB manufacturers are composed of Compeq, Unimicron and Unitech from Taiwan, Ibiden, CMK and Multek from Japan, and Elec&Eltek Group and Elec & Eltek and Ultrasonic Electronics Corp. from Mainland China.

Mobile phone case sector seems simple but actually it has a very high threshold. In particular, the design of ultra-thin handset has to consider how to control electromagnetic radiation, and at present fewer than 15 manufacturers in the world could do it. The gross profit margin of mobile phone case producers is 20% or so. Yet, the market is highly concentrated, with Perlos currently ranking the first in the world.

PCB market is monopolized by vendors from Taiwan and Japan. The high-end market is dominated by the Japanese producers, while the Taiwanese counterparts control low-end market. However, the Taiwanese producers have made much progress in recent years and their PCB production accounts for around 40% of the global total. PCB sector is experiencing a recovery and its gross profit margin is about 10%.

The fourth category refers to the functional components like electro-acoustic component, vibrating motor, display, battery and antenna. Display is a component taking up a very big proportion to the total cost of a mobile phone. Display has two working procedures, the first of which is to produce a panel, and the second is to make the panel into a module. Most the manufacturers on Mainland China are the module producers, while panel manufacturers include AUO and Wintek from Taiwan, Samsung and Samsung SDI from South Korea, and Kyocera, Sharp, Epson Sanyo, Toshiba-Panasonic Display, and Sony-Toyota ST-LCD from Japan. With the addition of many new production lines, the prices of display have dropped sharply and the gross profit margin of producers has declined to about 10%.

Acoustic component producers consist of Panasonic Electronic Devices, Hosiden, Cookson, Foster Electric, Merry, Philips, Mayloon, Kingsate Electronics, Xuanwei, Knowles Acoustics, Yuanyu Electronic, Shenzhen Linjia Electroacoustic, Hangzhou Shengyuan Electronics, Ningbo Xiangyang Group and Zhejiang Tianle Group. Its gross profit margin is relatively low.

For instance, the gross profit margin of Merry, the largest producer of acoustic component in Taiwan province, was less than 7% in the third quarter of 2006. Battery manufacturers are composed of BYD, SCUD, Sanyo Energy, Sony Chemical and TCL Hyperpower Batteries Inc. The battery market has the highest degree of concentration. The Japanese manufacturers rely on its advanced technology and the production lines valued at JPY1 billion, while the Chinese counterparts exchange its cost-effective labor force for expensive production lines. BYD and Sanyo Energy take up more than 50% of the global market share and their gross profit margin is about 15%.

Sales of Global Top 14 Mobile Phone Brands, 2007

(unit: 10,000)

Nokia	44040
<i>Samsung</i>	16100
<i>Motorola</i>	16017
<i>SonyEricsson</i>	11370
<i>LG</i>	8162
<i>Sharp</i>	1480
<i>RIM</i>	1420
<i>Bird</i>	1405
<i>TCL</i>	1190
<i>Kyocera</i>	1080
<i>K-touch</i>	1050
<i>Panasonic</i>	960
<i>Other</i>	9626

Source: ResearchInChina

Output of Global Top 15 Mobile Phone Manufacturers, 2007

(unit: million)

Nokia	220
<i>Samsung</i>	155
<i>Foxconn</i>	145
<i>LG</i>	78
<i>Flextronics</i>	75
<i>Motorola</i>	70
<i>Compal</i>	49
<i>Elcoteq</i>	46
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