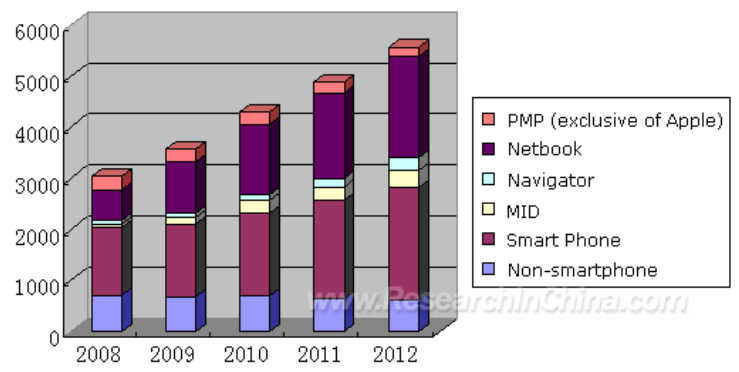
Global Mobile Application Processor Industry Report, 2008-2009

The so-called mobile application processor is centered on a variety of particular applications such as Algorithm, graphic processing, 3D formation, MPEG-4/H.264 decoding and full-function online surfing; and is the application processor focus on mobile products. The mobile application processor contains a Modem of mobile communications, and can play as a kernel or an auxiliary role in its applied products. By application fields, mobile application processor can be classified into five categories as following:

Purpose	Description	Typical Processor
Non-Smartphone	Taking single image or video processing as the core applications; acting as the role of auxiliary processor; excluding Modem of mobile communications; and being incapable to run the operating systems.	TCC8222 of Telechips
Smartphone	It can operate the operating systems, taking algorithm as the core; and is provided with multimedia functions, can contain Modem of mobile communications; and can be either the host processor or the auxiliary processor.	Qualcomm's MSM7201 is the host processor has a Modem of 3G communication; TI's OMAP-series2430 is the auxiliary processor does not have a communication Modem
Navigator	The majority of navigators are in-car navigators, being provided with navigation MCU and multimedia playing functions. In the future, will be added with the full-function online surfing, and thus can run the operating systems, excluding a Modem of mobile communications.	SH7770 and SH7775 of Renesas
Netbook	It can operate the operating systems, taking algorithm as the core; and with its crucial application for the internet surfing. It can be provided with multimedia functions or without; it can alternatively contain Modem of mobile communication. Moreover, and it can be either the host processor or the auxiliary processor.	Intel's Atom processor
MID	It can operate the operating systems, taking algorithm as the core; and with its crucial application for the internet surfing, it is provided with multimedia functions and is as usual exclusive of a Modem of mobile communications. It must be a host processor.	35XX, 36XX and 4 Series of TI's OMAP Series
PMP	It can not always run the operating systems. It is provided with multimedia functions; and must be a host processor, undoubtedly excluding a Modem of mobile communications.	ARJ2137 of Actions Semiconductor Co., Ltd

Application Processor Market Scale by Category, 2008-2012E



The application processor stems from instant innovation and development of mobile phone applications. Application processor rests its biggest merit with its absolute independence from mobile phone communication platform, being flexibly and conveniently with the shorter design flow and maximum utilization of own experiences and IP. The emergence of camera mobile phone created a group of application processor vendors focus on camera back-end processing, then baseband vendors integrated the IPEG decoding function for camera back-up 1-2 years later, thus resulted the sharp revenue drop and shipment decline of those application processor vendors in the year of 2006.

The application processor of smart phone can be divided into two types, one is the IC highly integrated with Modem, taking Qualcomm's SNAPDRAGON, Freescale's MXC300-30 and Marvell's PXA930 for instance; another is the single algorithm-based IC without Modem, represented by Texas Instruments and Samsung. In opposition to the latter type, the former type featured as high degree of fulfillment and simple design but not quite well in algorithms and flexibility. Any communication protocol in 3G field cannot avoid Qualcomm, but Qualcomm also means a high patent fee. Therefore, the both types have a reason of coexistence.

Portable navigators are under great influence of smart phones. To add much functions on portable navigators seem superabundance, in this sense, application processor has no market, but the situation is different for an in-car navigator due to it will alternatively become the in-car information system which can play sundry stream media and DVD, or become the in-car computer. The in-car navigator is mainly produced by Japanese vendors; therefore, Renesas almost monopolizes the market, and its latest product was SH7775.

MID is defined both in a narrow sense and in a broad sense. As usual, the insiders prefer the definition in the narrow sense, so do this report. MID refers to the mobile network equipment by size between netbook and smartphone. MID has superior portability to netbook and bigger screen size than smart phone, and it seems to have a considerable market prospect. However, the screen size of smart phone is becoming bigger with an average size of 3.2 inches, and the biggest is over 4 inches. MID is of single functionality and has neither the function of traditional mobile phone nor the capability to run the simple office system as Netbook. It also short of full sized keypads, its portability also far inferior to that of mobile phone; The vital defect of MID lies in the price due to its small sales volume. As a whole, MID market has a dim prospect, however, considering MID can be the upgrade of PMP, it will enjoy some market potentials.

Netbook is the highlight of electronic products, and also is the battle field between ARM and Intel. OMAP3640, the masterpiece of Texas Instruments, enjoy the overwhelming advantage regarding cost, volume and power consumption, while Intel enjoys the advantages of performance, the operation of complicated software, and industrial support.

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