Mobile Phone Application Processor IC (Multimedia IC) Industry Report, 2007-2008

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Background of Application Processor

Application processor of a handset is developed for certain specific type of applications of a handset, which can be classified into three types, including an all-round type, a multimedia type and a single-media type. The all-round type has not only the function of a multimedia application processor, but also the ability to run complicated operating system similar to Linux. Vendors of this type include Samsung, ST, TI, Renesas and Marvell. The multimedia type refers to the processors that are capable of processing over two media as usual like image, audio, video and 3D graphics, and most of application processors belong to this type. The single-media type only handles static image or audio, which is not studied in this report.

Emergence of application processor is the outcome of ceaseless innovation and development mobile phone applications. For the majority of handset manufacturers, they all have rich experience in the design of mobile phone platforms and own intellectual property rights. In early years, those platforms merely served for communication but could do nothing beyong communication. Therefore, application processor came into being. The biggest advantage of application processor lies in its independence from mobile phone communication platform, thus making it flexible and convenient. Also, the design flow is shortened and the existing experiences and IP are brought into full play. Emergence of camera handset has created a great number of application processor producers, specialized in the processing of camera back-end. Baseband vendors as SoC specialists integrated JPEG decoding function of camera back-end into baseband in 1-2 years, resulting in a market downturn for numerous vendors of application processor with JPEG decoding function. However, new application of mobile phone has conduced to another round of usage peak of application processor, and those applications comprise complex operating system, mobile TV, high-quality 3D graphic, 3-megapixel-and-above camera, intelligentization, GPS, high-definition photographing of video flow, etc. Yet, application processor vendors should attend to it that some baseband vendors have integrated the functions supporting 5-mega pixels, 30fps, H.264, MPEG4, H263 and WMV9 video playing, VGA resolution output and 16-bit color depth into baseband. Those high-performance basebands are expected to be massively applied in mobile phone in 2011, when application processor vendors will face another market downturn. But some application could not be integrated, like smart phone functions, mobile TV, high-quality 3D image, 3D human-machine interface, big screen (larger than 2.4 inches and resolution of over 240*320) and H.263 decompression video streaming.

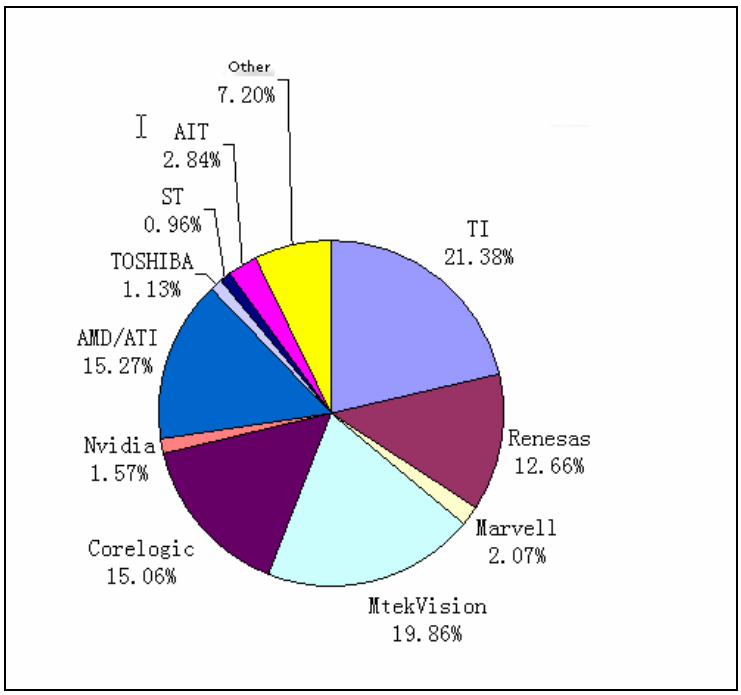
Application Processor Industry and Market

Application Processor Vendors

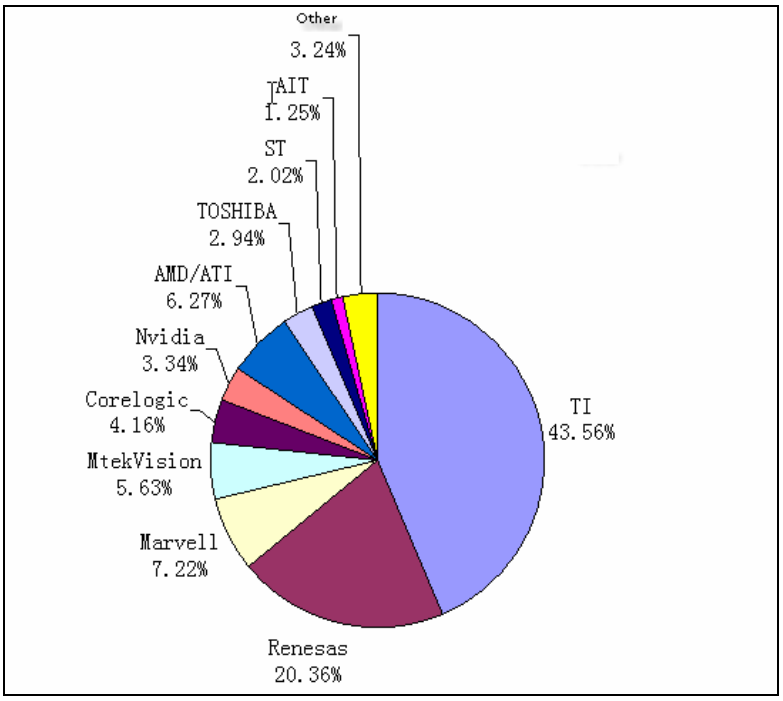
	OEM or IC Vendors	Main Technique (node)	Technique in Next 18 Months (node)
TI	TI	90nm	65nm
Samsung	Samsung	90-65nm	65nm
Renesas	Renesas	90-65nm	45nm
Marvell	TSMC	65nm	65nm
Mtekvision	Dongbu	130-90nm	65nm
Corelogic	Dongbu	130-90nm	65nm
Nvidia	TSMC	90-65nm	45nm
AMD/ATI	TSMC/Chartered	130-90nm	65nm
ST	ST	90nm	65nm
Toshiba	Toshiba	90nm	65nm
AIT	UMC	130nm	90nm
Vimicro	SMIC	130nm	110nm
Winbond	Winbond	110nm	90nm
Ankai	SMIC	180-130nm	110nm
Chipnuts	SMIC	180-130nm	110nm
Freescale	TSMC	90nm	65nm
Broadcom	TSMC	130-90nm	65nm

N95 and N82 make KAV001002M and OMAP2420 into PoP package, while N93 makes OMAP2420 and K5W1G13ACM into PoP package. Among IPHONE, Marvell ‘s PXA300 and Samsung’s K4X1G153PC-XGC3 are made into PoP package. ST STN8810S12 makes STN8810, 1Gb NAND, and 512DDR SDRAM into PoP package.

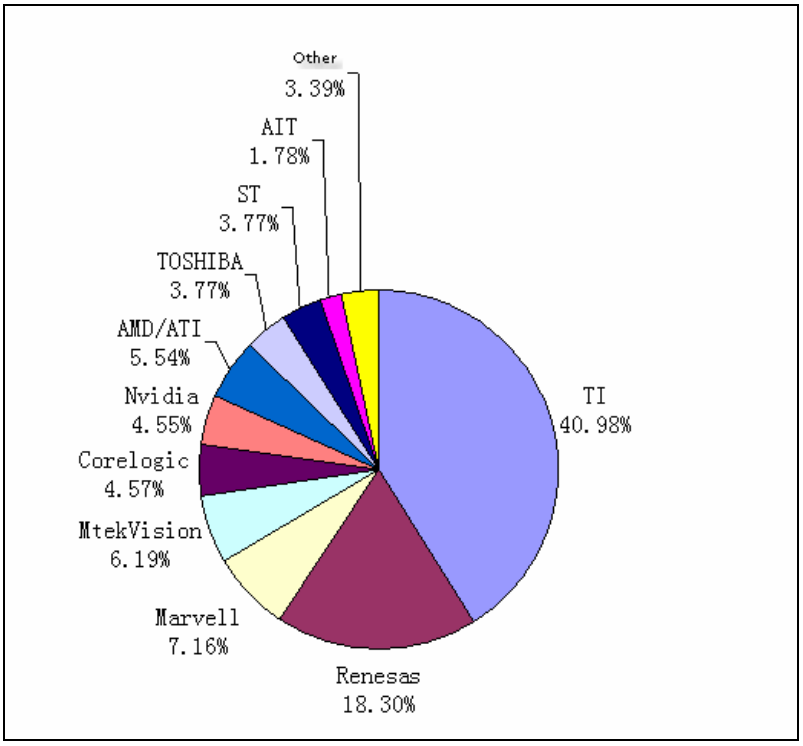
Market Shares of Global Main Handset Application Processor Vendors by Shipment, 2007



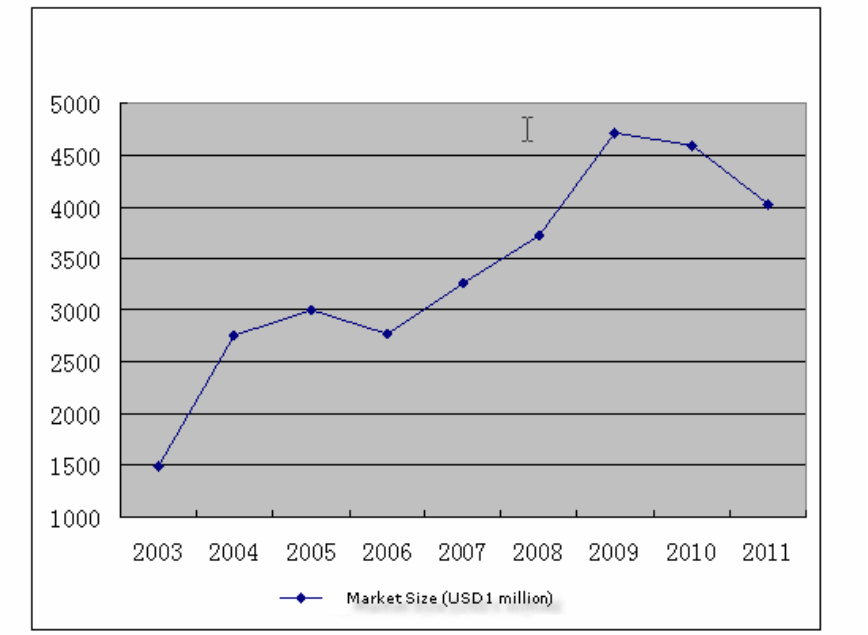
Market Shares of Key Global Handset Application Processor Vendors by Sale, 2007



Forecast of Market Shares of Global Main Handset Application Processor Vendors by Sale, 2008



Statistics and Forecast of Global Handset Application Processor Market Scale, 2003-2011



Global Handset Application Processor and Average Price Statistics, 2003-2011