FUJITSU MICROELECTRONICS LIMITED
ASIA E-newsletter
25th Issue Mar - April 2009

THE POSSIBILITIES ARE INFINITE FUJITSU

Corporate Message

Amidst the colourful season of spring, Fujitsu Microelectronics has taken on a new look – with successful launch of industry leading products, active participation in tradeshows, further expansion on university education programs and awarding of 2008 Top Ten Most Popular Semiconductor Brands in China. Faced with the current worldwide economic crunch, the achievement encouraged Fujitsu Microelectronics to continue the persistent efforts to serve the Chinese semiconductor market with better products and services.

In its product development efforts, Fujitsu Microelectronics has launched three new series of high-performance 8-bit microcontrollers (with 8, 16, and 20 pins) as expansion to its current line-up of low pin count 8-bit microcontrollers for consumer appliances. Also on the list, is the new graphics controller (MB86298) for digital dashboards and car navigation, as well as the world's first 1394 Automotive IC for HD video - underscoring the innovative capability of the company.

On the table of glory, is a new addition of "2009 AutoTronics Innovation Award" presented at AutoTronics Taipei 2009, for the third consecutive time. Fujitsu Microelectronics is also awarded the "2008 Top Ten Most Popular Semiconductor Brands in China", by China Electronics News. It is the only Japanese multinational company to have successfully achieved it for four consecutive years. The two achievements confirmed that Fujitsu Microelectronics has gained the approval of customers and media in China, and that its efforts in China's semiconductor market have been fruitful.

In addition to participating in AutoTronics Taipei 2009 that showcases its automotive electronic products, Fujitsu Microelectronics was also present at CCBN 2009 to introduce the latest digital TV solutions. Further to its commitment towards higher education support, Fujitsu Microelectronics MB95200 Series Technology Lecture has stepped into Southwest Jiaotong University's Lab Open Week while its technology lecture at Beijing University of Aeronautics and Astronautics is now available on the university's program website at www.eefocus.com.

Last but not least, the much anticipated "Fujitsu Microelectronics MB95200 Series MCU Competition 2009" has been launched. The MCU competition is an important activity of the company's university program line-ups.

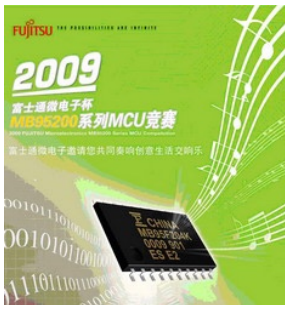
Senior Director Of Corporation Strategy & Management Office, Fujitsu Microelectronics Pacific Asia

Read more of the details in the 25th issue of Fujitsu Microelectronics Limited Asia e-Newsletter – the second issue of 2009!

Fujitsu Microelectronics' new digital TV products line-up at CCBN 2009

Fujitsu Microelectronics wins "Top Ten Most Popular Semiconductor Brands in China" award for fourth consecutive time

Fujitsu's new automotive electronic products showcased at AutoTronics Taipei 2009



"Fujitsu Microelectronics MB95200 Series MCU Competition, 2009" officially launched

- Fujitsu launches graphics controller for digital dashboards and car navigation
- Fujitsu expands lineup of low pin count 8-bit microcontrollers for consumer appliances
- Fujitsu launches world's first 1394 Automotive IC for HD video
- Activities: Fujitsu Microelectronics technology lecture steps into Lab Open Week of Southwest Jiaotong University
- Fujitsu Microelectronics technology lecture opens on university program website at www.eefocus.com
- Technical article from International Broadband Network: The Functionality and Performance of Interactive Television Set-Top Box

About Fujitsu Microelectronics Limited Asia

Collaborating collectively on its distinct strengths and expertise, Fujitsu Microelectronics (Shanghai) Co Ltd, Fujitsu Microelectronics Asia Pte Ltd and Fujitsu Microelectronics Pacific Asia Ltd collectively form Fujitsu Microelectronics Limited Asia (FML Asia), to provide a one-stop center for its semiconductor products to all customers in the Asia-Pacific region. Apart from sales and marketing of semiconductor products, FML Asia also offers flexible business and system solutions for the digital AV, automotive, consumer electronics, and mobile and wireless markets, as well as design and technical support for customers, locally and regionally.

With technology resource centers and ASIC design support centers strategically located in Shanghai, Hong Kong and Chengdu, FML Asia can speedily and competitively meet customers' stringent design-in requirements on ASSP, MCU and ASIC products. With heavy investments in design and engineering capabilities and application support resources, complemented by a regional network of design partners, suppliers and distributors, FML Asia can readily delivers innovative and value-added solutions and varied range of products to its target markets in the Asia-Pacific region.

About Fujitsu Microelectronics Asia Pte Ltd (FMAL)

Fujitsu Microelectronics Asia Pte Ltd (FMAL) was established in 1986 to provide semiconductor sales and support solutions to customers in Southeast Asia, India and Oceania. FMAL offers a diverse array of application-oriented semiconductor products and solutions such as ASIC, ASSPs, microcontrollers/microprocessors (FR-V), System Memory (FRAM/FCRAM) and System LSIs (DVD MPEG Source Decoders/MPEG –2 Encoders).

HOME

Press Releases

Fujitsu Launches Graphics Controller for Digital Dashboards and Car Navigation

Singapore, March 10, 2009 - Fujitsu Microelectronics Asia Pte Ltd (FMAL) announced the launch of a new graphics controller System-on-Chip (SoC) for automotive infotainment systems, such as next-generation car navigation and digital dashboards. The new controller, the MB86298, offers the highest-class graphics capability for embedded systems, as well as an industry first of providing output to up to 4 displays, and up to 4 video inputs.

Featuring superior input and output functionality, the MB86298 can process 4 inputted video streams while outputting video to 4 displays. The inputted videos can be modified, synthesized together, and put on 3-D graphics surfaces within a single screen. Subsequently, with 4 cameras mounted on all sides of the automobile (front, back, left, and right), it is possible to freely choose the desired viewpoint and

form for display. In addition, the controller's industry-leading capabilities enable display of 8 layers and inter-layer blends, where each information stream is processed separately so that users can selectively change the information screen to be displayed, as well as being able to synthesize the information streams together smoothly and display them.

For more information, please visit:
http://www.fujitsu.com/sg/news/pr/fmal_20090310.html

Fujitsu Expands Lineup of Low Pin Count 8-bit Microcontrollers for Consumer Appliances

Singapore, April 14, 2009 - Fujitsu Microelectronics Asia Pte Ltd (FMAL) today announced three new series to expand its lineup of low pin count (LPC) microcontrollers, with 8, 16, and 20 pins, in its F2MC-8FX family of high-performance 8-bit microcontrollers. The new MB95260H series, MB95270H series, and MB95280H series feature embedded dual-operation flash memory and support EEPROM emulation. This enables a reduction in system cost, as an external EEPROM is not required. The launch of the three new series is in response to the rapid rise in demand in the Asian market for low pin count microcontrollers for use in home appliances and other consumer electronics. Samples of the new series will start shipping from April 14, 2009.

For more information, please visit:
http://www.fujitsu.com/sg/news/pr/fmal_20090414.html

Fujitsu Launches World's First 1394 Automotive IC for HD Video

Singapore, April 23, 2009 - Fujitsu Microelectronics Asia Pte Ltd (FMAL) today announced the world's first "1394 Automotive" (IDB-1394) controller IC that realizes high-definition (HD) (1,280 dots x 720 lines) video transmission over the IDB-1394 in-vehicle multimedia network protocol. The new IC, the MB88395, can simultaneously transmit multiple streams around the vehicle, such as HD video from Blu-Ray DVDs, digital TV, audio and car navigation images. The new IC realizes this by utilizing a high-speed 800Mbps physical layer as well as Fujitsu's proprietary SmartCODEC that provides high compression and which can transmit HD video without perceptible lag. This not only brings the rich HD experience to rear-seat entertainment, but reduces the system cost of in-vehicle multimedia networks by a maximum of 30%, while reducing the number of wire harnesses (cables) by a maximum of 70% to reduce vehicle weight and improve fuel efficiency. Sample shipment of the new MB88395 will begin from April 22, 2009.

For more information, please visit:
http://www.fujitsu.com/sg/news/pr/fmal_20090423.html

HOME

Activities

Fujitsu's New Automotive Electronic Products Showcased at AutoTronics Taipei 2009

Fujitsu Microelectronics Pacific Asia Ltd (Taiwan Branch) participated in AutoTronics Taipei 2009, held at Taipei World Trade Center Nangang Exhibition Hall from April 14 to 17, 2009. At the exhibition, the company showcased the latest products and technology based on the theme "Speedy, Vivid, Entertaining – Future of Automotive". Products on exhibit include the new MediaLB MB91F467MA microcontroller for automotive body control, panel and vehicle infotainment supporting MOST network as well as the MB88F332 Graphics Display Controller for RSE, HUD and CID. Fujitsu Microelectronics' MB91F467MA won the "2009 AutoTronics Innovation Award", making Fujitsu the winner for three consecutive times.

Visitors in an endless stream at the bright Fujitsu Microelectronics booth

Chikara Onodera, director of Fujitsu Microelectronics Pacific Asia Ltd Taiwan Branch, participated in the award ceremony.

Taiwan office Richard Lee made a presentation at the new product conference with the award-winning product MB91F467MA

MB91F467MA won the 2009 AutoTronics Innovation Award

Fujitsu Microelectronics' New Digital TV Products Grand Show-off at CCBN 2009

Fujitsu Microelectronics took part in CCBN 2009 held at China International Exhibition Centre, Beijing, from March 21 to 23. In this 6th participation at the major electronics event, Fujitsu Microelectronics showcases its latest digital TV products as well as reference solutions that are popularly used in cable, satellite and Terrestrial Digital TV and mobile TV. Being a player in the digital TV market for more than 10 years, Fujitsu Microelectronics has provided its customers with many innovative products and unique solutions based on its expertise in the areas of digital TV chips and applications. This year, Fujitsu Microelectronics put forward its latest and leading products and solutions in both standard definition and high definition areas. At the China DTV Operation & Management Conference in Radisson SAS Hotel, Mr Cedric Huang, Marketing Manager of Fujitsu Microelectronics, delivered a speech on the topic of "Next Generation Cable TV STB".

For more information, please visit:
http://www.fujitsu.com/cn/fmc/en/news/archives/2009/0316.html

Mr Cedric Huang, Marketing Manager of Fujitsu Microelectronics, delivering a speech on the topic of Next Generation Cable TV STB.

Brightly branded Fujitsu Microelectronics booth.

WiMAX Forum Congress Asia 2009

Fujitsu Microelectronics attended the WiMAX Forum Congress Asia 2009 held in Suntec Convention Centre Singapore from April 28 to 29. As a silver sponsor of the event, it has put up a display of 2nd Generation Mobile WiMAX devices and Dual Band solutions as well as commercial products based on Fujitsu WiMAX ICs. Concurrently held was a conference session and the company has participated in the panel discussion session, "Developing a Successful Portfolio of WiMAX Devices to Meet User Mobile Internet Experience & Offerings". Representing Fujitsu Microelectronics Asia was Mr Andrew Gan, Marketing Manager of WiMAX Business.

Sales members attending to visitors enquiries on WiMAX at the exhibition booth

A showcase of 2nd Generation Mobile WiMAX devices based on Fujitsu WiMAX ICs

Mr Andrew Gan, Marketing Manager of Fujitsu Microelectronics Pacific Asia, participating at a panel session track "Developing a Successful Portfolio of WiMAX Devices To Meet User Mobile Internet Experience & Offerings".

Embedded System Seminar 2009

On April 29, Fujitsu Microelectronics participated in the Embedded Systems Seminar 2009 organised by EDN Asia. The event was held in The Chancery Pavilion, Bangalore. Mr Lou Kai Chee, Field Application Manager of Fujitsu Microelectronics Asia, delivered a presentation on "Small Yet Highly Functional – Keeping Your System Cost Low with Embedded ICs" at the seminar. The company has also put up a showcase of cost-effective microcontrollers products with its relevant embedded solutions.

Embedded System Seminar in progress

Mr Lou Kai Chee, Field Application Manager of Fujitsu Microelectronics Asia, delivering a presentation on "Small Yet Highly Functional – Keeping Your System Cost Low with Embedded ICs"

Seminar delegates visiting Fujitsu Microelectronics booth

Fujitsu Microelectronics Wins "Top Ten Most Popular Semiconductor Brands in China" Award for Four Consecutive Times

Fujitsu Microelectronics (Shanghai) Co., Ltd. has again received the recognition of "Top Ten Most Popular Semiconductor Brands in China", an award by China Electronics News. This is the fourth time of Fujitsu Microelectronics receiving the honour – the only Japanese MNC with such achievement, to date.

The "Top Ten Most Popular Semiconductor Brands in China" award started in 2004, and has since been held four times (2004, 2006, 2007 and 2008). It is currently one of the most important and influential awards in China's semiconductor industry. It was established to recognize companies that have made outstanding contributions not only to the industry itself, but also to society.

Fujitsu Microelectronics wins "**2008 Top Ten Most Popular Semiconductor Brands in China**" award

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"Fujitsu Microelectronics MB95200 Series MCU Competition, 2009" Officially Launched

The "MB95200 Series MCU Competition", sponsored by Fujitsu Microelectronics, has officially kicked off. This is the third MCU competition held by Fujitsu Microelectronics. The competition is held for the related school students, teachers, engineers and other associated personnel. The purpose of the competition is to stimulate the innovative passions and to promote MCU technology through the leading-edge MB95200 Series MCU products and applications. The competition also aims to boost the development of the industry, while enriching people's lives and increasing the standard of living. Held during an economic turndown when severe challenges confront the industry, this competition showed Fujitsu's confidence in promoting creativity and development in the industry and also demonstrated Fujitsu's long-term commitment to the Chinese market.

Fujitsu Microelectronics Technology Lecture Steps into Lab Open Week of Southwest Jiaotong University

Recently, a group of experienced engineers in Fujitsu Microelectronics (Shanghai) Co., Ltd has stepped into Lab Open Week of Southwest Jiaotong University and introduced to students the SCM series, together with the key series MB95200. This is an initiative to support the lab's construction, provide students with an intensive knowledge of Fujitsu Microelectronics' SCM products and applications, as well as to stimulate their innovative spirits.

Engineers from Fujitsu Microelectronics introducing SCM products to
Southwest Jiaotong University students

Fujitsu Microelectronics Technology Lecture Opens on University Program Website at www.eefocus.com

Fujitsu Microelectronics' technology lecture at Beijing University of Aeronautics and Astronautics is now available online at the university program website at www.eefocus.com. The objective of this web lecture is to help more students gain in-depth knowledge of the company's latest products and technology through online teaching.

Fujitsu Microelectronics Technology Lecture Opens on
Beijing University of Aeronautics and Astronautics Website at www.eefocus.com

HOME

Special Media Coverage

Media Interview

global sources
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Electronics Supply & Manufacturing China, February 2009

Sui Jun, Senior Marketing Manager of Fujitsu Microelectronics (Shanghai) Co. Ltd, was interviewed by Electronics Supply & Manufacturing China. He discussed the development of digital TV chip technology.


稳坐家庭娱乐中心位置，数字电视产业正当红


封面故事
稳坐家庭娱乐中心位置，数字电视产业正当红


封面故事
稳坐家庭娱乐中心位置，数字电视产业正当红

English version:

Hub of Home Entertainment Market; Digital TV Industry is Prevailing

Although the whole market is being engulfed by an economic recession, there are still several markets that have maintained steady growth. LCD TV is one of these markets. Statistics from iSuppli indicate that in 2008, the shipment of LCD TVs reached 94 million, up 19.7 per cent from 2007. One thing worth pointing out is that although consumers' purchasing power has been reduced during the current financial crisis, they are still willing to pay for LCD TVs.

Digital-to-analog signal conversion warms up digital TV market

The hot sale of digital TVs in 2008 is benefiting chip manufacturers. We cannot neglect the role that North American and Europe markets played in driving the digital TV market. According to Mr Tao Yu, Digital Consumer Products Marketing Director of NEC Greater China, the company's digital TV-related chips shipment greatly increased in 2008, ranked top one in Europe's digital TV market in terms of market share. The US government planned to shut off all analog TVs this year, but in Europe, only Finland, France, Ireland and Britain are transitioning to digital TV, while other countries will provide program sources for both digital TV and analog TV within five years. China has also invested RMB2.5 billion as special fund to construct ground digital TV system and plans to make it cover the whole nation in three to five years. According to the government's plan, China is expected to be able to realize the popularization of digital TV in 2010 and will stop programs based on analog signals in 2015.

It is inevitable for the television industry to transit from analog to digital, which will generate consumption demand of up to several hundred million dollars. As the whole world makes a timetable to transit to digital, mergers and acquisitions also emerge in the industry. Companies trying to do something in this industry have started to draft product line and are developing blueprint for digital TVs.

Wash away the weak, keep the strong; M&A will accelerate

Mergers and acquisitions (M&A) is a fast way to acquire critical technologies. There are many examples in the history which indicated that companies that acquire new technologies through acquisition can realize faster growth. For example, one third of Cisco's technologies are gained through acquisitions of other companies.

With the coming of digital TV era, high definition video image is becoming the hotspot in the industry. To convert standard definition image to high definition image needs to use image scaling technology. ST acquired Genesis because of the latter's scaling technology. According to Rodrigo Cordero, Senior Manager of ST Greater China Home Entertainment DTV Product Department, technologies from Genesis strengthen ST's capability in image processing and also consolidate ST's leading position in digital TV market. With the transition, digital TV market also becomes hot. At the same time, when the market becomes more matured, it will need to reduce and proportion cost through scaled production. It is worth mentioning that the design cost of the digital TV chip is in direct ratio with its complexity. As a result, acquiring companies that have the technologies you are not strong in or which you don't have is one of the ways to improve competency and to enlarge market share.

ST's acquisition of Genesis started the M&A war in the market, followed by Broadcom's acquisition of AMD's digital TV business at US$140 million in October 2008. NXP did not want to lag behind for it bought Conexant's STB business which ranked third in 2007's STB market. As a result these three companies became three giants in the market.

"M&A hasn't stopped," said Cordero who thinks the number of digital TV chip manufacturers will be reduced and solutions will be optimized. "Financial crisis brings a very good restructuring opportunity to the whole industry, accelerating mergers within the digital TV market."

"Only companies that can master complete technologies can survive the digital audio and video market," said Sui Jun, Senior Marketing Manager of Fujitsu Microelectronics, who thinks the comprehensiveness of technology is very critical for one to win in the digital TV market. "With the development of the technology, STB, networking capabilities and even some communications functions will be included in digital TV." In a digital home networking, digital TV plays as display medium, a core position in a digital home. Sui believes that if a company can grab the technology of digital TV chips, it means that it has held the critical part of the future home entertainment market. This is also why there are so many mergers and acquisitions in the market. Currently, Fujitsu hasn't formally launched digital TV-related products, but we can see that despite the economic recession, digital TV market will be one of the few markets that will still maintain growth. In 2009, Fujitsu plans to introduce the first generation digital TV chip, entering the competition war.

Multi-role intensifies digital TV's core position in entertainment

TV manufacturers hope that digital TV can play multi-roles, surpassing home PC and establishing its core position in the future home entertainment market. The rich audio and video contents available from the Internet were once the main shortcoming of televisions. But now, televisions are no longer closed devices for receiving broadcasting signals. The evolution of interface technology had expanded the openness of TV and can realize the dream of playing Internet contents on the TV.

The explosive increase of consumer electronics has diversified the range of media that can bear the load of audio/video contents. From cell phones, PSPs, MP3s to digital cameras, there are different channels that can deliver audio and video contents. Steve Tirado, President and CEO of Silicon Image noticed that as high resolution Internet video content has increased, notebook computers with HDMI interfaces are emerging so that contents can be transmitted to TV. While another regulation named MHL for mobile products and digital TV is also on the way. MHL supports audio/video contents transfer from cell phones and digital cameras to televisions, connecting all consumer electronic products, realizing the networking of home audio and video products.

In addition to transmission standard, image processing chip-related manufacturers also see the importance of network contents to digital TV, and has introduced related products. In early 2008, NXP launched its first single-chip LCD TV solution T543 which integrates MPEG4/H.26 CODEC and can receive and decode MPEG4/H.26 standard definition as well as high definition contents. Users can use one display device to show all of the network and digital video content. Broadcom also announced that it would showcase its brand new super revolution technology for digital TVs at CES 2009. This technology can convert low resolution video from Internet and standard DVD to high resolution video, realizing the best effect for large displays. According to Broadcom, the showcase of this technology means that video developed in low resolution and standard definition can be displayed in full HD.

"How to support as many broadcasting forms (satellite/wireline/ground) and video formats (MPEG2/MPEG4/H.26?/VC-1/AVS) as possible at the lowest cost will become the next hot topic of digital TV chip," summarized Sui.

Single chip not equal to Catholicon

While digital TV chips are developing to become multifunctional, the integration is also increasing. Image processing circuit like video decode, 3D comb filter and de-interlacing are integrated to one single chip, even peripheral equipment such as USB 2.0, HDMI, and so on. EMMA3TL from NEC is a multi-format decode single chip solution. It supports high decode MPEG2/H.26 and Full-HD display output, as well as integrates a dual CPU core with 1000MPIS, networking control, USB 2.0 main control and HDMI, which can help greatly save external components and increases the functions in a device.

In addition, ST will unveil a single chip digital TV solution, FREEMAN, in 2009. The product combines ST and the former Genesis' distillate. Cordero didn't say much about the details of FREEMAN. He only praised its flexibility.

Though single chip is a good choice for realizing low cost and multiple functions with high integration, but the issues of heat dissipation and signal noise can mar image quality. Both Tao Yu and Sui Jun said that bringing in more advanced manufacturing technology and improving packaging technology can optimize power consumption and heat emission.

Digital TV chip manufacturers may seemed to be chasing the single chip wave but are they are also still focused on separate chip development because single chip absolutely cannot penetrate all of the digital TV market. TaoYu further analyzed that separate digital TV solutions will be replaced by integrated solutions in low and middle end-market due to cost factor. But in some parts of the high-end market, some TV manufacturers will continue using exclusive back-end display processing chips together with front-end video decode chips to realize ultra high definition image.

Apart from image quality, software design is also a design problem that cannot be solved with single chip. Television is no longer a platform that receives broadcasting programs. Interconnection performance challenges the intelligence of digital TVs; more open application layers increase the difficulty of developing software and easy-to-use human-computer interaction interface also test a designer's wisdom.

Different standards in different countries, FPGA becomes popular

Tao Yu: Rely on the popularization of digital TV in the global market, NEC is positive towards 2009's digital TV market

The diversification of TV transmission standards in different countries is holding back single chip integration. The cost of customizing single chip based on error correction and balancing technologies as well as modulation scheme defines the limitation of digital TV single chip market. The diversification, frequent changes of standards and relative technologies give flexible FPGA a very good position. According to Tim Schnettler, Lattice Design Tools Marketing Director, FPGA will realize an over 100 per cent growth in digital TV market in four years, reaching US$200 million in 2012. It means that more designs are choosing to use FPGA to develop digital TV systems.

The features of FPGA can quickly adapt to the ever-changing digital TV market and to establish a platform that can meet the changing standards in a short time. Schnettler points out that display technology, broadcasting standards and format, output/input, storage devices are changing all the time, and even local laws and regulations will impact the system design solutions. FPGA will be able to help engineers realize flexible designs in order to cater to the complexity and uncertainty of the digital TV market.

Lattice's main solution in display market is LatticeXP2 family. This product family provides conventional advantages like non-volatile FPGA instantaneous activation and design security, and also develops specific functions for the digital TV and display market. XP2 can use internal high performance 7:1 LVDS interface to transmit display data. Ecosystems that can support XP2 Lattice include color space conversion IP and Demo board with advanced interfaces for system evaluation and development.

FPGA can handle large amount of parallel data and provide upgradeable computing power, which is the short board of single chip. It does not matter who leads the digital TV market, whether it is the single chip, FPGA or discrete solutions because the market's hot topic will always be new functions and never-low-enough cost. Just like what Cordero said, "Market doesn't mind whether the chip uses integration or discrete solutions, they only care about the pricing and functions."

中国电子报
CHINA ELECTRONICS NEWS

China Electronic News, March 10, 2009

Mr Sunny Chan, Senior Director of Corporation Strategy & Management Office, Fujitsu Microelectronics Pacific Asia was interviewed by China Electronic News. He introduces the company's strategy and development in China.

中国 3G 数字电视商机无限　半导体巨头积极布局

调整策略加强研发　携手客户共对危机

针对中国客户量身定制解决方案

看好 3G 数字电视应用

English version:

Editor's Note: *When the winners of the 2008 Top Ten Most Popular Semiconductor Brands in China, hosted by China Electronic News, were announced, the reporters interviewed the senior executives of the brands who won awards on the issues such as how to address the international financial crisis; hot issues of the semiconductor market and technology, as well as brand-shaping strategy in the China market. Here, China Electronic News presents to its readers the key excerpts from their viewpoints.*

Infinite Business Opportunity in China's 3G Digital TV Market – which is Where Semiconductor Giants Are Actively Focusing Their Efforts

Adjust Strategy and Strengthen R&D to Address the Economic Crisis Together With Customers

Sunny Chan: Fujitsu Microelectronics has made all arrangements for resources relocation and reduced the production lines so as to face the current economic crisis. These are the measures also taken by the headquarters to improve production efficiency and resource utilization so as to address the problem of falling international orders. The strategy has been carried out in Asia-Pacific region including China. We have relocated the current resources and focused on several major production lines such as digital audio/video and system microcontroller.

With regards to employees, we stick to the Elite System, that is, try our best to keep the talents of our company and the belief that the most powerful guarantee to address the economic downtown depends on the wisdom of talents and the power of team. In terms of our spending, we aim to increase income and reduce expenditure and re-examine the costs of various businesses, seeking more ways to reduce expenditure, such as reducing large-scale business travel, using IT as a means to strengthen internal communication, and developing office energy-saving activities in combination with our concept of environmental protection.

Customize Solutions for Chinese Customers

Sunny Chan: As early as 2003, Fujitsu has established itself in the great China market and focused its efforts on several markets in China such as the communication and consumer products markets. We have accumulated advantages in wireless products for portable communication equipment such as WiMAX, powerful image processing chip and power management chip with low power and high performance.

Many of the technologies as mentioned above are designed for China market. For example, in the sector of microcontroller – to meet the requirements of home appliances and other consumer electronics market in China, Fujitsu has turned its focus from developing middle- and high-end products to low pin count microcontrollers to help Chinese engineers apply our products with simple structure, high performance and low cost into various basic consumer products more conveniently and economically.

In the sector of automotive electronic information and entertainment system, Fujitsu has a wide range of characteristic product lines. Our MCU has integrated LIN (Local Interconnect Network), CAN (Controller Area Network) and FlexRay bus and our image processing products have integrated 2D/3D graphic engine and MediaLB. We also provide standard IDB-1394 controller, FlexRay controller and OSDC character overlapping controller.

In the digital audio/video sector, Fujitsu is adept in image processing and CODEC chip. For example, in terms of STB, our products support applications in satellite TV, cable TV, terrestrial broadcasting and IPTV. We launched exclusively among the major manufacturers the low-power, small-package chips with the new 90nm process and the size of 9mm×9mm, which have received a warm welcome from Chinese customers.

In the area of production technology, Fujitsu first realized the mass production of 90nm products as early as 2003, and has been taking the lead in the industry. Next, we realized the mass production of 65nm products in 2007 and that of 65nm and 90nm RF CMOS in 2008. With advanced process of high performance and low power consumption, our products can meet the requirements of products from different sectors. In addition, the rich simulated IP library, high cost-effective CPU core and powerful back-end design ability are enabling us to provide Chinese customers with one-stop flexible wafer foundry solutions.

Think Highly of 3G Digital TV Application

Sunny Chan: As the global financial crisis has led to the low requirements at the macro level, the Chinese government has taken

several measures to expand domestic demand and many of them are related to infrastructure, in which our products can be applied, such as microcontroller, special chip and wireless communication products for communication equipment and base station and some products for automobile, home appliance and digital audio/video. Therefore, we can find business opportunities in the new measures.

中国电子报 CHINA ELECTRONICS NEWS

China Electronic News, March 19, 2009

Bu Yangchun, product manager of Fujitsu Microelectronics (Shanghai) Co. Ltd, was interviewed by China Electronic News. He discussed the development of digital TV market.


16 CCBN 2009 特刊 芯片

芯片巨头主攻数字电视双向互动七大技术

为互动业务提供全系列平台

Linux 平台
为互联互通带来益处

将 Java 虚拟机移植到芯片平台是趋势

English version:

Bu Yangchun, product manager of Fujitsu Microelectronics (Shanghai)

More and more customers will be attracted by Java-based games, Karaoke, TV banking and TV shopping. According to foreign experiences, the combination of chips and mainstream middleware has played an important role.

On-chip Java Virtual Machine is The Trend

Fujitsu Microelectronics believes that high-definition and interaction are the trends for the development of digital TV. As a main set-top box chip provider, we provide not only two-way protocol stack and drivers based on our hardware, but also help customers to build up the software platform for interaction. For instance, in order to facilitate the applications of interactive games, we embedded the Java Virtual Machine on the chip platform and passed the Sun's TCK certification. Up to now, it is the one and only of this kind in the current market.

As a chip provider, we provide complete and multiple software selections for customer solutions to meet the different applications. In addition, drawing from the experience abroad, we have established a strategic partnership with the leading Chinese middleware manufacturers to help customers add new applications.

As for multifunctional devices, we've been continuously pushing forward the multifunctional standard/high definition solutions for the cable, terrestrial, satellite broadcasting market since last year. At present, the multifunctional devices are mainly shipped to Europe and North America, but it's just a beginning in China. We believe China's domestic market will take more and more market share over time and the high-definition multifunctional devices will account for a large proportion.

China is a very important market in which Fujitsu Microelectronics attaches great importance and keeps a close watch on the development of standards in China's terrestrial digital television, satellite broadcast and AVS. We also made technical reserves and product plans accordingly. When the time comes, we will work with customers to put forward the solutions which are Chinese standard compliant.

Chip Giants Focus on the Area of Digital TV Two-Way Interaction Technology (Seven technologies)

Chip makers keep a close watch on the television network operators who play a leading role in the industry and occupy the top level of the set-top box industrial chain.

One of the Chinese television network operators said," A few years ago, the industry was involved in the digitizing analog TV. In recent years, the industry has been involved in digitizing two-way interactions. In the coming years, the industry will enlarge the scale of its interactive business." The words above revealed the current core work of the operators; it also tells the chip makers what their technology selling point is. Therefore, at the CCBN exhibition, the chip makers put forward two-way interaction together with seven technologies update:

First, the integration of various interfaces – this is the basic condition for the common use of the chip and Ethernet, USB, cable modem as the suitable interfaces for Chinese market. However, up to now, there are only a few chip makers who integrate these interfaces onto a single chip.

Second, the processing speeds of the chips. To deal with a variety of interactive business, the processing power of the set-top box chip is becoming increasingly important. At present, the processing speed of high-definition set-top box is up to 800MIPS to 1,000MIPS.

Third, the operating systems switch to Linux. Previously, many chip makers developed their own embedded operating systems, but these are relatively weak in supporting interactive business. Therefore, some chip makers are switching to the Linux platform.

Fourth, chip makers are more clearly defining the limit between the underlying chip platform driver and the upper application software, so as to make an easy access for newly added applications.

Fifth, the support forJava technology. Because online games are being considered as a promising business, some enterprises transferred the Java virtual machine into the chip platform. Of course, if we can solve the complex business problems, it will give our customers more convenience in the development of their business

Sixth, the support of interoperability standards. Supporting a variety of interoperability standards which are similar to DLNA is under consideration by all the chip makers.

Seventh, the support of a wide range of decoding formats, so as to support different sources from different channels

According to the above mentioned seven technologies, it seems that there's no one who can meet all the demands, so, there is still a long way ahead.

網易科技
tech·163·com

Tech.163.com, March 24, 2009

Cedric Huang, Marketing Manager of Fujitsu Microelectronics (Shanghai) Co. Ltd, was interviewed by tech.163.com. He discussed the development of STB market.

English version:

Huang Zili: Two-Way System is the Key in Making Set-Top Box Industry for Gaining Profit

21/03/2009 15:31:24 Source: Netease technology report

Video: Interview with HUANG ZILI from Fujitsu Microelectronics
(More information about the video interview)

21 March, Netease Tech News, --- Huan Zili, the marketing director of Fujitsu Microelectronics (Shanghai), accepted an exclusive interview from Netease technology. During the interview, Huang expressed it is necessary to make the set-top box system profitable, if you want to make money from the set-top box industrial chain, whereas, the two-way interactive system is the basic for value-added services.

Mr. Huang believes that in order to achieve a two-way interactive system, the performance of the hardware needs to be qualified to meet the requirements of the value-added services, plus the expandable general-purpose application software together with stability and reliability.

Fujitsu provides the chips in this area. Mr. Huang said Fujitsu is ready to help the other manufacturers to benefit from the industry. (Wang Jiecong)

The above photo is Huang Zili, Marketing Director of Fujitsu Microelectronics (Shanghai)
(More photos for the event)

The Interview is as Follow:

Host: Hello, everyone, I'm Lu Hongmei from internet Broadcasting Corporation. Today, we are very happy to have Mr. Huang Zili here and he's the marketing director of Fujitsu Microelectronics (Shanghai).

Host: Mr. Huang, as far as I know, Fujitsu is engaged in providing chip solutions, and taking a leading position in the industry whose business covers the area of Asia. What is your market share in China? And how's the development of Fujitsu in Chinese market?
HUANG ZILI: Thank you for Netease and internet Broadcasting Corporation. I'm in charge of Chinese market and the whole Asia business. Our business in China takes a major part in Asia. At present, the volume of our chips used by China's cable digital television is ranked as second, and we are very pleased to note that many customers use our products.

Host: Nowadays, the social welfare service takes a big part in radio and television industry. As a chip manufacture, stationed in the forefront of the industry, how the operators can make money in your opinion? This is the issue that operators care. Could you give some comments and advice on it?

HUANG ZILI: This is a very good question, and also a very interesting one. As we all know, in the past, most of the radio and television operators are backed up by the government and the government did the investment in social welfare service. But after transferring for original TV signal to the digital signal, the government plans to extend the coverage of the social welfare services. Apart from government investments, a big part of investment is coming from the operators, so they are most concerned about how to make the set-top box industry a profitable one. From the point of industry chain analysis, the broadcasting system need to be upgraded, the system is must to be operated which should be two-way interactive. Therefore, a lot of work can be done in value-added services.
Host: What do you think problems that hinder the development?

HUANG ZILI: We couldn't say there are problems as we are just starting. To a certain segment of the industrial chain, we are willing to help the industry to be profitable. Just as I said, there are technical requirements from the front end of the industrial chain to the very end-users. It should be two-way system in order to make money, and the set-top boxes play a vital role in this. We know very well about the applications of set-top boxes, since we are set-top box chip makers.

HUANG ZILI: As we all know, set-top boxes are the key devices that link digital TV and customers. So the performance of set-top boxes is essential in making money. What performances are needed in order to make money? I would like to say something about it:

HUANG ZILI: First, the hardware should be able to support two-way system. If it only supports the one-way system, it is the same as the original application mode: program transmission and social welfare services. If it is two-way system, it can do a lot of value-added services, and the value-added services are money making services. In order to better the value-added services, I think the following should be taken into considerations: First, the hardware selection, choose the advanced technology, for instance, the rich interfaces such as Ethernet interface, USB interface, and maybe hardware interface such as video recorder.

HUANG ZILI: Second is the software election. It is better to choose general purpose application software with easy access to add other applications. Many set-top boxes nowadays support JAVA function. It is easy to work with the value-added services.

HUANG ZILI: Third is the stability and reliability. If your set-top boxes always go wrong, no body will pay for it..

HUANG ZILI: In this case, the choice of set-top box providers and chip makers appears to be important. I'd like to give a few tips on provider choice: First, the provider should have a long-term stable operation. For example, our chips have been used in the Chinese market for a decade, and we have a very good word of mouth. Our products are stable and reliable and support a lot of applications with rich interfaces, one USB interface can support two, rarely seen in set-top boxes. Second, our product support JAVA virtual machine, with this function, the users will be able to surf the internet and play interactive networking games just like using PC, it is also basically in line with the standards abroad.

HUANG ZILI: The last but not least, the provider should be able to provide with product series in continuity. In order to have a sustainable development the long-term plans are absolutely needed.
Host: Just now Mr. Huang gave us some very good advices. I have a last question, could you say some thing about the industrial chain services as the transferring is already starting?

HUANG ZILI: OK, We were among the first international companies to enter the China Digital TV market, we can provide good supports in the digital TV industry chain, including, front-end digital TV dedicated chips, chips used for transmission, and complete solutions for

set-top boxes, these are based on our products. As for R&D, we set up a chip design center and application center in Shanghai, which can provide very good services in Chinese market. For customer services, we provide best technical services for both manufacturers and operators, such as, overall solutions, product designs, functional requirements, as well as product update. We also hold regular seminars to do some training and update the knowledge of the customers.

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global sources 电子系统设计 Electronic Design – China

Electronic Design-China, March 2009

Jiezao Ding, product manager of Fujitsu Microelectronics, had an interview with the journalist from Electronic Design-China, and introduced the advantages of in-vehicle infotainment solutions from Fujitsu Microelectronics.


global sources 电子系统设计 Electronic Design – China

中国专家视角

Top 3选择富士通汽车信息娱乐解决方案的理由

丁造早
富士通微电子产品经理

首先，在汽车的信息处理和娱乐系统领域，富士通的产品线系列广泛并且富有特色。微控制器(MCU)集成了LIN、CAN和FlexRay总线；图形显示控制器(GDC)产品集成了2D/3D图形引擎和MediaLB。我们还提供标准IDB-1394控制器、FlexRay控制器和OSDC字符叠加控制器。

其次，每一个GDC产品都有它独特的功能，方便中国客户可以根据市场的要求开发差异化的汽车应用。如Lime集成了双数字显示，可以很方便地用于前后座娱乐系统；Jade集成了2D/3D功能，可以开发汽车的DVD/GPS导航系统、数字虚拟仪表和各种形式的车内中央信息显示系统。

最后，富士通的GDC产品含有专门的图形引擎单元，而且完全支持多种操作系统，如uITRON、QNX和WinCE。■

ID号：于www.ed-china.com输入本文ID号可阅读全文及相关文章：20090304

English version:

Why Does Top 3 Select In-vehicle Infotainment Solutions from Fujitsu Microelectronics?

By Jiezao Ding
Product Manager
Fujitsu Microelectronics

First of all, Fujitsu Microelectronics provides various rich-featured products in the field of in-vehicle information processing and entertainment system. Microcontrollers (MCU) integrate LIN, CAN and FlexRay buses, while graphic display controllers (GDC) combine 2D/3D graphic engine and MediaLB. We also offer standard IDB-1394 controllers, FlexRay controllers and OSDC character-overlay controllers.

Secondly, each GDC product features unique functions and allows Chinese customers to develop differentiated automotive applications based on market requirements. For example, Lime integrates double digital displays and is suitable for front and rear seat entertainment systems, while Jade combines 2D/3D functions and can be used to develop DVD/GPS navigation system, digital virtual instruments and various in-car central information display systems for automotives.

Fujitsu's DGC products also include dedicated graphic engine units and fully support many operating systems, such as µITRON, QNX and WinCE.

ID Number: Inputting the ID number of this article to www.ed-china.com will allow you to read full text and related articles: 20090304

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global sources
电子工程专辑

Electronic Engineering Times-China, April 2009

Sui Jun, senior marketing manager of Fujitsu Microelectronics, was interviewed by Electronic Engineering Times-China. He discussed the development trend of multimedia family entertainment.


封面故事

新一代家庭娱乐多媒体的发展趋势

网站精粹


封面故事

新一代家庭娱乐多媒体的发展趋势

Advertiser Index

English version:

Development Trend of Next Generation Home Entertainment Multimedia

Quintessence of Website

Design More Excellent High Definition Multimedia with Video Pre-/Post-processing

At present, consumer video applications are experiencing explosive growth, which is driven by digital video compression technology which can provide vivid images and allow customers to adjust the picture according to different display devices. The popularization of digital video technology makes drowsy television market prosperous again, and consequently video products also become hot products in consumer electronics market. How to use video enhancement technology to differentiate your products becomes extremely important.
http://www.eetchina.com/ART_8800557288_617685_TA_bc0b0505.HTM

At present, many video products are transforming towards high definition (HD) videos, such as high definition TV set, cable TV set-top-box, satellite TV set-top-box, blue light player, personal computer (high definition internet streaming video), game console, video camera, digital still camera with high definition video recording function, and mobile phones with high definition camera and video playing functions. Since high definition and other multimedia functions are quickly adopted by next generation home entertainment and portable equipments, many semiconductor companies are continuously driving the development of home entertainment platform to create the condition for more functions and higher connectivity. In the following text, Yujing Wei (Senior Industry Strategy Development Manger of Broadcom Corporation), Jun Sui (Senior Manager of Marketing Department of Fujitsu Microelectronics Co., Ltd.), Yong S. Choi (Senior Marketing and Business Development Director of Home Entertainment Department of NXP Semiconductors) and Chuanghou Xu (Product Manager of ITE Tech. Inc.) will discuss the development trend of home entertainment multimedia from different aspects.

Yujing Wei: Home entertainment devices began to transform towards full high definition (Full HD) long time ago, and high definition video is gradually finding its way to portable consumer field. The support of 1080p full high definition is the long-term trend in portable devices. However, due to cost, size and power consumption, it is predicted that many products will support 720p high definition first. TV set manufacturers takes the upper hand in the transformation towards full high definition. Due to lack of unified CA interface like OpenCable/TrueTwoWay used in the US, the capability of integrating digital conversion function into high definition TV set is limited. In addition, content providers and set-top-box manufacturers are facing many challenges, such as high cost of high definition program, high development cost of receiving devices/terminals and compliance with the requirements of high definition content protection.
As for home entertainment products, the biggest challenge lies in integrating appropriate function combination into specific solution, working out a reasonable development plan, and accelerating the time-to-market. Therefore, to meet video processing requirements of home entertainment products, the following several components are necessary: video decoder incorporating high quality scaler and motion compensation processor, and state-of-art transmission and IP processing engine. Interconnection seems like a critical function too, and digital recording is almost necessary. Furthermore, high speed 2D/3D graphic is also needed to enhance the appeal for user interface.

Yujing Wei, Broadcom Corporation

Jun Sui: High definition is one of the hottest trends in digital audio/video field. In television broadcast, optical disk industry and home video game consoles field, high definition products are continuously released. As the State Administration of Radio, Film and Television is transferring its working focus towards high definition broadcasting, the demand for high definition set-top-box also increases. Meanwhile, more and more TV set manufacturers will consider introducing integrated machines for receiving terrestrial and satellite high definition radio. Although blue light DVD has dominated the market abroad, its high cost and limited source restrain its popularization in Chinese market. Due to the prevalence of P2P technology, Chinese consumers will use hard disk player rather than blue light DVD to play internet videos. For this reason, many television manufactures have begun to directly build similar functions in TV set. Currently, the biggest challenge Chinese high definition market is facing is standard uncertainty. There are several video coding technologies (such as MPEG2, H.264 and AVS), many audio coding technologies and even more encryption systems. Since national standards related to high definition haven't been set up, manufactures can only wait and see what will happen, or integrate all technologies they can imagine into the products, making the cost extremely high and the product unaffordable to consumers.

Steven Sui, Fujitsu Microelectronics (shanghai) Co., Ltd.

Yong S. Choi: Standardization organization in China pays little attention to global concern – standardization of forms. In addition, television manufacturing companies are very sensitive to cost and consequently are not willing to accept the cost of ownership of proprietary compression/decompression tools (such as MPEG). For these reasons, although DMB-T standard doesn't specify the type of the encoder/decoder, AVS will play a very important role in domestic digital television market. At present, the challenge which high definition television are facing in the field of motion estimation and motion compensation lies in how to increase the frame rate to 100 or 120 frames per second, while processing the image whose pixel per frame is 5 times higher than standard definition image. Most

of digital formats don't use the whole color range. Therefore, to reproduce vivid image, blue-sky enhancement, skin color correction, green color enhancement and other technologies should be used to perform intelligent color mapping and processing to part of the image. Standard television format can't realize the image resolution and sharpness of high definition television, so image resolution and sharpness should be increased simultaneously. This kind of processing is not only performed to every frame, but also operates at the resolution of 1080p@120Hz.

Chuanghou Xu: Flat panel television will still move towards large size, full high definition, wide color gamut, 10 bits and high contrast, and dynamic prediction/compensation will be gradually accepted. Blue light DVD plays the leading role in higher definition. To realize the high throughput of high definition content between television and player, new standards for high speed interface are continually put forward. HDMI becomes the main transmission interface and supports the transmission of high capacity, full high definition and wide color gamut content, while DisplayPort and other standards are also developing quickly to take a share. Many prototyping machines for wireless transmission interface standards which attach much importance to lossless transmission have shown up in many electric multimedia exhibitions, and are trying to drive the demand for the commercialization through its wireless transmission advantages. At present, the biggest challenge which Chinese manufacturers are facing is to make consumers and customers buy the products through design differentiation.

Chuanghou Xu, ITE Tech. Inc.

High Definition Interface Camp Avoids Discussing Complementary Competition

In the field of high speed interface for home entertainment system, HDMI seems the general course of development, but DisplayPort (DP) is also developing quickly and intends to take a share. As new generation of digital multimedia interface standards, HDMI and DP are also involved in the competition of home entertainment multimedia interfaces. We often mention the two interface standards and the fight for home entertainment center between television and PC in the same breath. Under fierce market competition environment, where will HDMI and DP head for? Although Shoujun Wang (general manager of Greater China of Silicon Image Corporation) and Qian Liang (marketing manager of Analogix Semiconductor) think highly of the standards they support, they both believe that HDMI and DP will interpenetrate in 2009.

Shoujun Wang: HDMI technology is adopted by over 850 worldwide consumer electronics and PC manufactures, and will continuously increase in market share. 5 important improvements have been made to next generation HDMI standard and include Ethernet wire in HDMI cable, audio back-feed path, increased maximum HDMI connection speed, providing the interface for in-car high definition video, and defining smaller 19-pin connector. DP has little chance to replace or stand up to HDMI as an equal. HDMI was introduced to the market 4 years earlier than DP, meaning the competition is over before it starts in consumer electronics field at least. Therefore, DP and HDMI will possibly become complementary technologies and implement different applications in different marketplaces.

Qian Liang: DP will get its speed in 2009. One point worth mentioning is that both HDMI and DP will be treated as key strategic points in Chinese market in the next year. In 2009, HDMI and DP will interpenetrate. Dual-mode products will be one point of growth in future. As one technology which was introduced to the market later, DP takes the downward compatibility at the beginning of product development. HDMI and DP need professional testing and support, and can't be replaced by chips in several years. Both HDMI and DP are at the stage of continuous innovation and development, and will take market shares no matter they are integrated or discrete. However, interface technologies themselves have the risk of being integrated, only that this risk is low in the next few years.

Technical Article

International Broadband Network, February 2009

The Functionality and Performance of Interactive Television Set-Top Box

English version:

1 Foreword

Overall, the conversion of China's digital TV has been carrying on for five to six years already. By end-2008, the number of digital TV users has reached 45 million throughout the country. At present, about 20 per cent of those users who have completed digital TV installation are using two-way set-top boxes. Companies operating the digital TV networks are considering how to regain their heavy investment in both cost and manpower resources through the installation of set-top boxes.

Are there some technical problems in the previous two-way interactive set-top box applications, and how the on-going interactive application will suit the set-box technique will become the hot topics for the set-box application in the next stage.

2 The applications of the existing two-way digital TV set-top box

The overall number of users of digital television in China has reached 45 million by the end of 2008. The conversion rate of cable television subscribers throughout the city is more than 50 percent. The requirements to the set-top boxes have been shifted from meeting basic needs to complete conversion to a wide range of value-added applications, in particular, the interactive applications. According to statistics, in the complete conversion boxes, only 20 percent are two-way set-top boxes. The two-way interactive application is mainly video-on-demand, stock information, game and interactive business information services, etc.

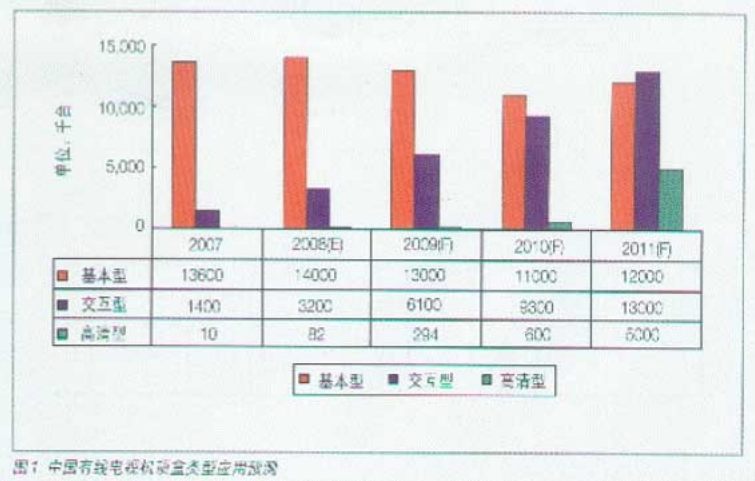


图1 中国有线电视机顶盒类型应用预测

From Figure 1, one can see that the proportion of two-way users is 19% by 2008 and it will reach 31% by 2009.

In terms of content applications, the largest is video-on-demand, followed by stock information, games, business services, information services and so on.

3 The problems existing in the application of existing digital TV set-top box

In terms of current interactive applications used most, the first is video-on-demand, but from the analysis of the current market situation, the development is not going so well and even some operation companies in some places call it the impairment business rather than value-added services. Certainly, there are many policy factors which is not the area we need to discuss. However, if we analyze it from the technical aspect, it is hard for two-way video-on-demand set-top boxes to develop other business apart from video-on-demand. Actually, this is the reason why many companies want to do the value-added business of video-on-demand.
Figure 2 is a proportion chart on the application of two-way digital cable TV.

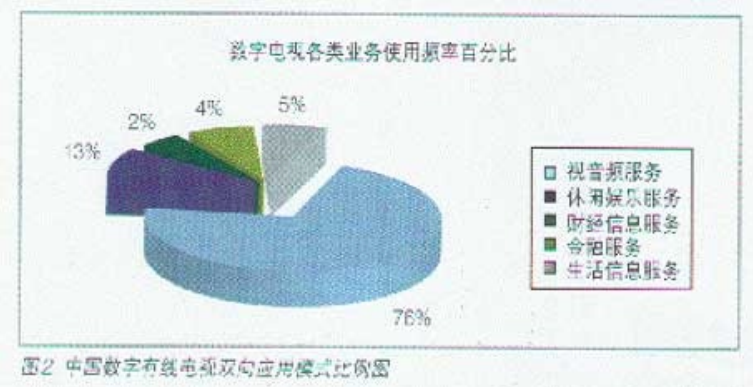


图2 中国数字有线电视双向应用模式比例图

From of the technical point of view, the basic configuration of the current two-way set-top boxes is the 8MB Flash and 32MB or 64MB memory; set-top boxes need to run the EPG, data broadcasting, CA, browser, VOD software and other middleware required. However, some middleware occupy memory during the run-time while it doesn't release the memory when it stops running which will give rise to barriers for other middleware to run. Of course, these problems can be solved through technology development or by increasing the memory capacity, but in the current tender, the price of the set-top box is getting lower and lower, and the manufacturers for set-top boxes do not want to make more investment due to cost reason.

Now we there are more new applications such as credit card terminal, the interactive game in set-top box, PVR recorders and set-top box IP phone. For example, mobile TV set-top box applications that we have expected before; the USB port using set-top box and we just need to plug the phone into the set-box for charging, so the cost for a charger is saved. At the same time you can also download the contents customized by the cable operators into your cell phone, which will be helpful when we are spending a long time taking a bus or subway. If you customize some targeted contents, you can also study English or pick up other knowledge useful to your work, while the operators can get some revenue from such applications. Furthermore, if the USB port is OTG2.0 that can realize two-way main and sub

machine applications, you can record the required program contents into a hard disc, and it also can be sent to your cell phone. If we make a further assumption that all the operators for digital TV is connected, we can develop the roaming business, so wherever you are while on you're a business trip, you can get your customized contents as long as you can connect to a set-box in your location. However, currently there are few set-top boxes or set-top box chips that can support USB2.0, so the OTG2.0 is even fewer.

In addition, there is a tendency for some business operators to give their business to a middleman manufacturer to run and control. However, there will be several negative effects in technology: first, the technical support, which means that the future operator carrying out new business and technological development will also be carried out through a third party. In view of technology applications and continuous software upgrades, operators can easily be about a particular vendor, which is not complied open trend of application technique internationally. The other is the restriction. As a unified software may possibly limit the access to a number of other software, so it will lead to a number of carriers to the application of new technologies; the last, it is easy to be bonded by the chip manufacturers, because the middle platform will be targeted to bind to certain chips, which will result in the increasing of system costs, such as the binding of the chip manufacturers. For example it may result in high prices, application performance degradation, or the performance the bonded chips is not suit for the current application.

At present, many set-top box manufacturers have introduced Java applications as Java is convenient both for the personalized set-top boxes and open applications, but the current chips and Java applications have the problems of Java standards and technology patents

4 The interactive application of set-top box need technical support

Applications can be imagined, but the basis of developing an application is so much more: we need suitable hardware, suitable software and suitable technical services and to sum up, the application needs technical support. Only with suitable technical support can the image of the relevant application be realized. So then, how do you solve the above mentioned problems in the interactive set-top box?

In terms of the current interactive application scenario, we can see that the application that can obtain more technical support and can bring the revenue is all relative with USB port such as the above mentioned USB port application. A few years ago, there have been chips using the USB2.0 OTG technology. Currently, there is also the set-top box connected with POS through the USB port on the market. These set-top boxes can help the user to use band card at home. The application of USB2.0TG technique can easily realized the above mentioned PVR, and user's set-top box can be easily connected to the hard disc to from a PVR recorder, and also it can realize the application of mobile TV. From Figure 3 we can see the application of USB, especially OTC is growing rapidly.

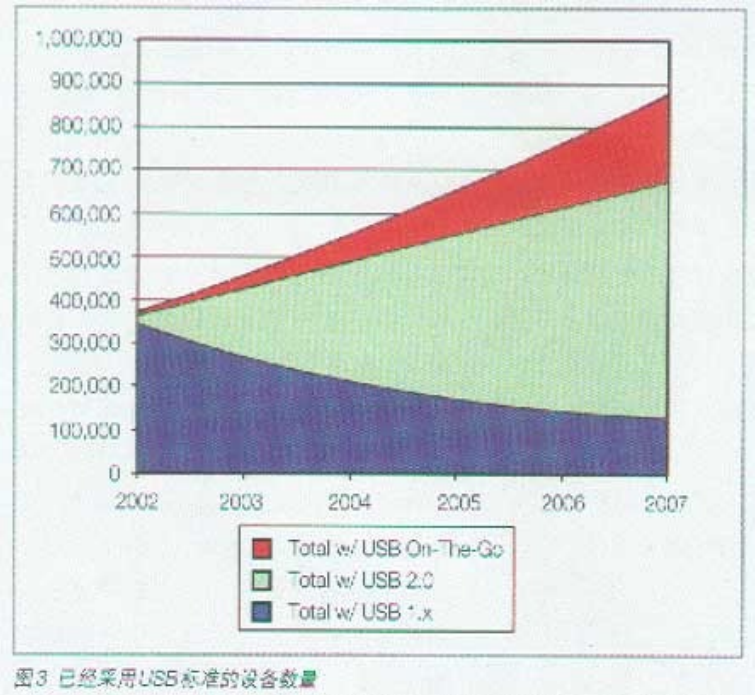


图3 已经采用USB标准的设备数量

Some equipment can be connected with the set-top boxes with a serial port. However, please note that the serial port doesn't support hot plug, but USB can do it. Therefore, in the specific application of the peripheral equipment, we need to pay attention to the technical specific of the relevant ports. The standard for USD2.0, 15Mb/s, 48 Mb/s and 480 Mb/s can be supported. During the application, the speed type that the chip can support should be noted.

More powerful CPU functions allow set-top boxes to support the function of a Java CDC virtual machine. This application is unique currently in China. The users in Shanghai can play network games and have stock and lottery tickets exchange in a timely manner through Java. This Java Virtual Machine application has passed the TCK compatibility test from SUN and has paid the relevant patent and technical fees.

Java has two application standards which are CDC and CLDC. Currently, the standard that some set-top box middleware are using and supporting is CLDC and it can execute some basic application such as Java game. While the set-top box chip applied for the integrated CDC standard will make the set-top box complete various functions, for example, Java CDC can have seamless connection with popular MHP middleware in the future, which is cannot be reached by CPLD. From the official release of the standard MHP middleware in Europe in 2000, its DVB-J Java requirement is supported by the mainstream middleware internationally. The progress of this technique make the Chinese market and international market connected more and more closely, so we must understand and support the most popular international standard, in order to enable our manufacturers and operators have the ability to participate in the international market competition and the application of the international most advanced things. This has been reflected in our new promulgated set-top box middleware national standards

We must understand CDC and CLDC are divided by the following standards in Java configuration:
CLDC:
- Memory less than 512KB
- Limited power supply (Powered by battery)
- Limited or non-persistent network connection
- Simple user interface
- 16-bit or 32-bit processors

CDC:
- The memory of 2MB or above
- With Internet connectivity, typically a wireless network
- All the functionalities of Java virtual machine need to achieved
- 32-bit or 64-bit processor

Figure 4 is a block diagram for the Java platform. CDC-based devices can support all of the Java2 Language Specification and Java Virtual Machine specification, which is a superset of CLDC and is much larger than CLDC, therefore the procedure based on the CLDC can be transplanted to the equipment based on the CDC without modification. For the application of TV contents, SUN and other third-party companies can offer more convenient off-the-shelf applications, such as the JMF (Java Media Framework), Java TV, and so on. They can only run under the CDC but not in the CLDC.

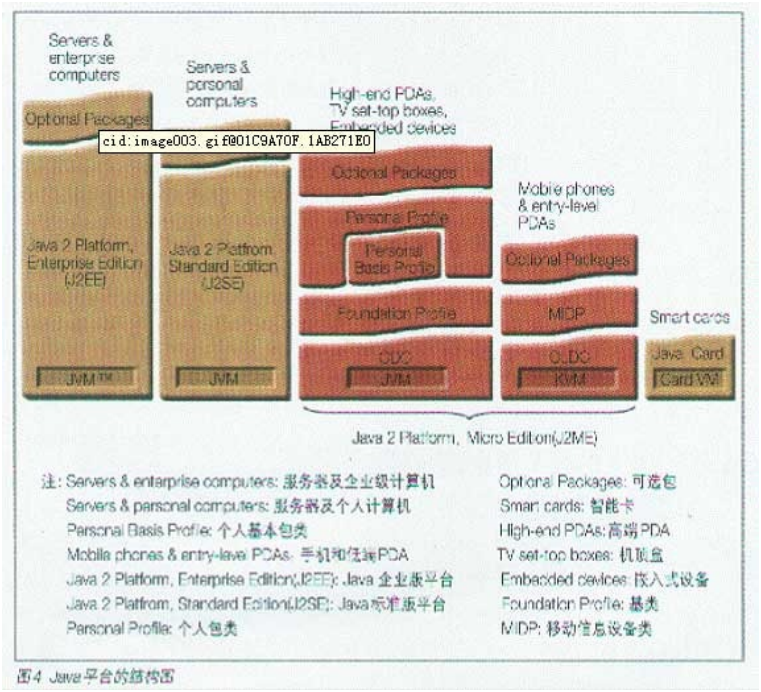


图4 Java平台的结构图

5 Some technical issues for the additional applications

From a technical point of view to promote the realization of new applications, it will bring many new add-on application techniques, such as Cable Modem using USB connections can reduce the cost of set-top box; more application can be realized through the USB port to convert the reading of SD cards or some abnormity card, but the standardization issue of the interface software should be noted during the specific application or specific development. Some small manufacturers apply some open source software from networks to its conversion interface which will probably result in the degrading of the machine performance. If they are used in large scale, some uncontrollable problem will be appeared. Therefore, we recommend using the IP database from the normal manufactures or the interface software technology running for a long term when you have a technology development.

中国电子报 CHINA ELECTRONICS NEWS

China Electronic News, March 24, 2009

Full HD Multi-Decoder LSI Supporting Both MPEG-2 and H.264

全高清多标准解码器 LSI
支持 MPEG-2 和 H.264 标准

富士通微电子(上海)有限公司产品经理 卜知春

Guideline 公司研究报告显示，2007 年中国的数字机顶盒出货量已达 6400 万台，其中中国本土厂商的出货量达 3000 万台，预计有线数字机顶盒方面，2007 年 8 月随着地面数字电视传输标准的颁布实施，地面数字机顶盒也开始起步，2008 年的直播卫星开启，中国也将进入到直播卫星时代，这将是一个非常巨大的数字电视市场，而高清数字电视将是未来数字电视发展的必然趋势，中国高清数字电视发展的机遇条件，用户需求，政策环境等都已经基本具备，在 2008 年北京奥运会的鼓舞作用下，2008 年~2010 年中国高清数字电视将步入快速发展期，高清压缩，解码及传输等技术必将成为市场关注的热点。

为了响应数字电视市场需求，富士通微出了高清解决方案 MB86H60，该款 LSI 产品适用于 TV，机顶盒以及便携式接收装置等，作为单芯片解决方案，它兼容 DVB 标准，能解码全高清 MPEG-2 或 H.264 格式视频，也具备高清解决方案所需的其他功能特性，客户只需将两个 16 位的内存连接到本产品即可运行各种应用，可以帮助客户降低总的系统架构成本。

图 1 产品框架图

产品特性

- MPEG-2 和 H.264 标准，高清兼容，本产品作为兼容全高清和标清的 MPEG-2/H.264 的解码器，既可应用于基于 MPEG-2 格式的标清广播网络，也可应用于基于 H.264 格式的下一代高清广播网络。
- 功能完备，基于开发整机产品，CPU 采用高性能的 ARM11 架构，主频达 324MHz，支持图文电视，字幕，JPEG 解码，系统控制以及声音和图像的处理等多种应用，并提供相应参考代码和驱动，可让客户快速地做出机顶盒和 TV 整机产品。
- 总系统架构成本低，通过将两个 16bit 的 DDR 内存和本产品连接，即可实现全部的应用功能，例如系统控制，视频解码等，从而降低整机产品总系统架构的成本。
- 多 TS 流处理，可实现 PVR 视频录制，可同时解码/解复用 4 路 TS 流，实现 PVR，DVR 功能，支持 CI 接口，可选加密/非加密广播流。

开发环境

为方便客户对 MB86H60 芯片进行评估及软件开发，富士通提供 MB86H60-DK 型评估板芯片 2D 和开发工具包。

硬件

- TS 输入
- 视频输出
- 高清视频分量输出(YPbPr)，RCA 连接器
- 数字输出，HDMI
- SD 视频 RGB+CVBS；SCART 连接器
- 8 通道音频：RCA 连接器
- S/P-DIF：RCA/光学
- 2 × 512M-bit DDR2 SDRAM
- ATA 接口
- 通用接口(PC 卡)
- USB/OTG 连接器
- IR 接收器/发射器(遥控器)
- 2 × DB9/RS-232C 终端
- 电源：采用+12V 电压

图 2 MB86H60-DK 评估板

软件

- 富士通 RTOS(FAMOS)
- 驱动程序(富士通 APD)
- 下载及 Flasher 工具(采用 USB 适配器)
- 应用示例

开发工具

- ARM® 开发工具
- RealView™ 开发套件
- RealView™ ICE
- GNU 开发工具(计划中)

未来发展

目前，MB86H60 芯片主要应用于机顶盒(PVR)，数字电视一体机等领域，随着高清信号的开播和 FPD TV 市场的飞速成长，对于高清机顶盒的需求也将不断增加，针对 MPEG-2/H.264 多解码芯片，富士通将进一步强化该芯片的功能，以满足更广范围的应用需求。

FUJITSU

English version:

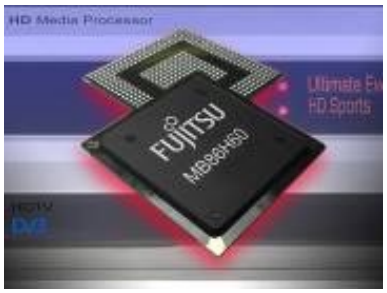
Full HD Multi-standard Decoder LSI Supporting Both MPEG-2 and H.264 MB86H60

----Fujitsu Microelectronics Asia Pte Ltd.

A full HD (1920 dots×1080 lines) multi-standard decoder LSI capable of decoding both MPEG-2 and H.264 video compression types.

Overview

This product is a system LSI for TVs, set-top boxes, and portable receivers to be distributed in Europe. It not only conforms to the DVB standard, a digital broadcasting standard adopted in Europe, and is capable of decoding both full HD MPEG-2 and H.264, but also includes the necessary functions for HD broadcast reception on one chip. The total system construction cost can be reduced because set vendor customers can use these functions simply by connecting two 16-bit width memories to this product.



New Products MB86H60

Product Features

Table 1 presents the main specifications and **Figure 1** the block diagram of this product.

Figure 1 block diagram

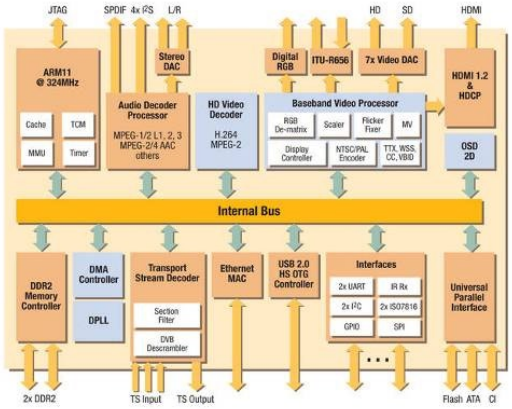


Table1 main specifications

Special Press Report

EDN Asia, April 14, 2009

Fujitsu Expands Lineup of Low Pin Count 8-bit Microcontrollers for Consumer Appliances

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Fujitsu Expands Lineup of Low Pin Count 8-bit Microcontrollers for Consumer Appliances

(Product News, 14 Apr 2009)

Fujitsu Microelectronics Ltd has expanded its lineup of low pin count 8-bit microcontrollers with three new models featuring eight, 16, and 20 pins. The new MB95260H series, MB95270H series, and MB95280H series feature embedded dual-operation flash memory and support E2PROM emulation. This enables a reduction in system cost, as an external E2PROM is not required. The launch of the three new series is in response to the rapid rise in demand in the Asian market for low pin count microcontrollers for use in home appliances and other consumer electronics.

Aside from their use as main microcontrollers, the three new series can also be used as sub-microcontrollers; for example when as a result of system specification changes in high-performance audio-visual equipment, the functions of the I/O or A/D converter of the main microcontroller or ASIC are no longer adequate. The new series also employ a 1-line on-chip debug that uses only one pin on the microcontroller, thereby minimizing the number of pins used for debugging in product development.

Along with these series, Fujitsu Microelectronics is providing the starter kit, MB2146-420A-01-E, which includes a product development environment in a single package.

Hardware Zone Community, March 10, 2009

Fujitsu Launches Graphics SoC for Digital Dashboards & Car Navigation

» News

Fujitsu Launches New Graphics SoC

Processors | Just Announced
Tue 10 Mar 2009

Fujitsu Launches Graphics SoC for Digital Dashboards & Car Navigation

Industry ' s first 1-chip controller handling 4 video inputs and output to 4 displays

Fujitsu Microelectronics Asia Pte Ltd today announced the launch of a new graphics controller System-on-Chip (SoC) for automotive infotainment systems, such as next-generation car navigation and digital dashboards. The new controller, the MB86298, offers the highest-class graphics capability for embedded systems, as well as an industry first of providing output to up to 4 displays, and up to 4 video inputs.

Featuring superior input and output functionality, the MB86298 can process 4 inputted video streams while outputting video to 4 displays. The inputted videos can be modified, synthesized together, and put on 3-D graphics surfaces within a single screen. Subsequently, with 4 cameras mounted on all sides of the automobile (front, back, left, and right), it is possible to freely choose the desired viewpoint and form for display. In addition, the controller' s industry-leading capabilities enable display of 8 layers and inter-layer blends, where each information stream is processed separately so that users can selectively change the information screen to be displayed, as well as being able to synthesize the information streams together smoothly and display them.

Figure 1: Example of the MB86298 controller at the nexus of an in-vehicle infotainment system

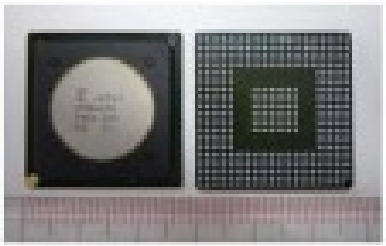

Figure 2. Graphics Controller SoC (Unit:cm)

In recent years, the amount of electronics in automobiles have continued to rise, providing information and entertainment to the driver and passengers, bringing about increased safety, more comfort and reduced

traffic information, video from blind-spot cameras, streaming TV and DVD video to passenger seat displays, and so-called "eco-drive" functions which support low fuel consumption by displaying information of the car's running condition.

There are increasing needs to simultaneously show several video and image streams to several displays within the automobile, such as showing different images to the driver's seat and front passenger seat (dual-view LCD displays), and viewing TV and DVDs on the rear seat displays. At the same time, automotive infotainment systems that capture and display information of the vehicle's periphery from several cameras mounted on the vehicle have emerged. Subsequently, such automotive systems demand high-performance graphics SoCs that can process in real-time several different images and video streams, and process such large volumes of imaging data at high-speed.

On a single chip, this new MB86298 controller contains the necessary functions demanded for next-generation automotive infotainment systems, providing high-speed video and graphics processing to handle an industry first of 4 video inputs, and output to 4 displays. This controller can not only realize systems which show navigation images to the driver - while showing TV and videos to the passenger displays - as previously possible, but can also process and display the dashboard instrument cluster in 3-D graphics, including meter needles. In addition, the controller can handle the inputs from 4 cameras (front, back, left, right) mounted on the vehicle and process them and synthesize them together in real-time. Also, for car navigation 3-D mapping, this controller can output to high-resolution 1600 x 600 pixel displays to bring out rich image detail, not just of the roads, but of surrounding buildings and scenery.

Key Features

1. Allows 4 video capture inputs and output to 4 displays

To each of 2 display ports, it is possible to output 2 screen images - for each screen image, 8 levels and inter-layer blends can be displayed. Therefore, on top of a map of the surroundings, explanation notes can be overlaid, as well as an overlay of images of the surroundings from the vehicle cameras. In such cases, the outline of cars is extracted and overlaid, so it is like the overlaid image blends into the background image of the surroundings. Dither and gamma correction functions are included, offering high-quality imaging on displays of varying resolutions and color characteristics. Furthermore, the 4 video inputs enable various video inputs to undergo simultaneous processing. Inputs up to resolutions of 1280 x 720 pixels can be handled, and functions are included for enlargement/reduction, and conversion of interlace format - suitable for motion - to progressive format which has less noise.

2. Industry-leading high-speed, high-resolution rendering

It features top-class rendering performance in its industry with 400 million pixels per second, providing real-life maps with minute detail and smooth rendering. As graphics memory, 800MHz DDR2 SDRAM is used - with a maximum data rate of 6.4 gigabytes per second (6.4Gbps), it is possible to display several layers of display data on top of each other at high resolutions. The controller also contains a unified programmable shader that is capable of operations at 17G FLOPS, which can render highly textured and detailed surfaces, such as the metallic surfaces of a car body, in life-like detail. With such high rendering performance, this controller can output in real-time to high-resolution 1600 x 600 pixel displays, to bring out rich image detail.

3. OpenGL ES2.0 graphics acceleration

The MB86298 graphics controller contains an acceleration function for OpenGL ES2.0, making it simpler to construct an in-vehicle entertainment environment. Also, Fujitsu Microelectronics plans to provide OpenVGTM1.0 support for smooth enlargement/reduction of characters and straight or curved lines.

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indiaprwire.com, April 24, 2009

Fujitsu Launches World's First 1394 Automotive IC for HD Video

Contributes to reduced costs, lighter wiring harness, and higher fuel efficiency

Bangalore, Karnataka, IND, 2009-04-24 11:24:22 (IndiaPRwire.com)

Fujitsu Microelectronics Asia Pte Ltd (FMAL) todayannounced the world' s first "1394 Automotive" (IDB-1394) (*1) controller IC that realizeshigh-definition (HD) (1,280 dots x 720 lines) video transmission over theIDB-1394 in-vehicle multimedia network protocol. The new IC, the MB88395, cansimultaneously transmit multiple streams around the vehicle, such as HD videofrom Blu-Ray DVDs, digital TV, audio and car navigation images. The new ICrealizes this by utilizing a high-speed 800Mbps physical layer (*2) as well as Fujitsu' s proprietarySmartCODEC that provides high compression and which can transmit HD videowithout perceptible lag. This not only brings the rich HD experience torear-seat entertainment, but reduces the system cost of in-vehicle multimedianetworks by a maximum of 30%, while reducing the number of wire harnesses(cables) by a maximum of 70% to reduce vehicle weight and improve fuelefficiency. Sample shipment of the new MB88395 willbegin from April 22, 2009.

Figure 1: The 1394 Automotive controller usagein-vehicle

Figure 2: 1394 Automotive Controller (unit: cm)

There is increasing attention being paid to 1394 Automotive forin-vehicle multimedia networking, and it is expected to become common in theautomotive market. The reason for this includes the gradual shift to digital TVin each country, the increased availability of HD content, as well as the analogoutput from Blu-Ray players to be stopped from 2013, making 1394 Automotivenecessary for the upcoming flood of digital transmissions through in-carnetworks. Anticipating the future needs for rear-seat entertainment systems,Fujitsu Microelectronics lead other vendors in introducing 1394 Automotivecontrollers in 2005, and with this new 1394 controller co-developed withFujitsu VLSI Limited, allows more HD video content to be easily and flexibilityviewed throughout the vehicle.

This was emphasized by Yuji Kawaguchi, Operating Officer of HondaR&D Co., Ltd. in saying, "Honda R&D welcomes the MB88395, the first ICto provide the 800Mbps speeds of the 1394 Automotive spec. The importance ofhigh-speed digital transmissions will increase further in the future to handlein-vehicle multimedia as well as to reduce weight. 1394 Automotive is anin-vehicle network that can enrich entertainment and comfort. We plan topromptly evaluate the MB88395."

The key to the capabilities of the new controller are the physical layercompliant with the 800Mbps specification of 1394 Automotive - double the400Mbps of the previous product - as well the a version of the SmartCODECcompression codec for video that has an even higher compression ratio,compressing video to one-fourth (1/4) it' s original size, compared to one-third(1/3) that of the previous product. The SmartCODEC, which was developed byFujitsu Laboratories and is used in the BT.601 Transport Over IEEE-1394(*3) standard, can compress and decompresshigh resolution video in 2 to 3 milliseconds(2-3ms) without any perceptibleannoying time lag or out of sync contents, which can be a problem when watchingthe same contents on the front and rear monitors.

This results in the ability to transmit HD video from Blu-Ray DVDs anddigital TV, as well as high-resolution navigation images, within the vehiclewithout any perceptible time lag, making this the first IC in the world toallow multiple streams of HD video and navigation images over 1394 Automotive.For example, a HD video stream (1,280 dots x 720 lines) from a Blu-Ray DVD thathas been decompressed has a rate of 885Mbps. With subsequent compression toone-fourth (1/4) with SmartCODEC, the rate becomes 249Mbps, so two (2) channelscan be transmitted in the 800Mbps bandwidth that was not possible over 400Mbpsproducts.

Going forward, Fujitsu Microelectronics plans to expand its lineup of1394 Automotive ICs to handle the increasing information streams inautomobiles, such as video content and peripheral cameras on the vehicle, aswell as to drive further reductions in system costs. These in-vehiclenetworking chips complement Fujitsu Microelectronics' strong presence inautomotive ICs for processing graphics and video.

Key Features

1. Reduces system costs for rear-seat entertainment

The MB88395 IC includes the 1394 Automotive physical layer and linklayer(*4) as well as DTCP digital rightsmanagement(*5) on one chip, while encoding occursonly within SmartCODEC' s internal line memory, making an external frame bufferunnecessary, and thus reducing the necessary system components and totalmultimedia network system costs by a maximum of 30%.

Also, by being able to simultaneously transmit at high speed severalvideo and audio streams as well as control signals on one network line - notpeer-to-peer - it reduces the number of the wire-harnesses (cables) by amaximum of 70%. This contributes to reducing vehicle weight, leading to higherfuel efficiency. Concretely, this can produce a reduction in the environmentalimpact by approximately 10kg of CO2 per year for a car traveling10,000km (that translates into roughly the amount of CO2 a treeabsorbs in 1 year).

2. HD video compression, decompression and transmission without perceptibletime lag

Includes Fujitsu' s proprietary SmartCODEC which can compress video datato one-fourth in size, an improvement compared to the one-third of the previousproduct, and compress and decompress video within 2-3 milliseconds. Such lowlatency, combined with the doubling of the speed of the physical layer to800Mbps, allows transmission of HD video from Blu-Ray DVDs and digital TV,within the vehicle without any perceptible time lag, which can be a problemwhen watching the same contents on the front and rear monitors. With an MPEGCODEC, there would be a perceptible time lag in transmission.

Glossary and Notes

*1. 1394 Automotive (IDB-1394):

Stands for "ITS Data Bus-1394." An automotive network protocol formigh-speed multimedia applications promulgated by the 1394 Trade Association' sAutomotive Working Group. With the IDB Forum absorbed into the 1394 TradeAssociation, "IDB-1394" has been re-branded as "1394 Automotive" or " 1394Auto" .

*2. Physical layer:

The first of seven layers when transmission functions are divided intoseven layers, as defined by the OSI Reference Model. A key part of networkhardware through which bit arrays are transmitted.

*3. BT.601 Transport Over IEEE-1394:

A transport protocol for sending BT.601 video streams (YUV, RGB, etc.)over IDB-1394, promulgated by the 1394 Trade Association.

*4. Link layer:

The second layer in the OSI Reference Model, in which packets are formedand transport is managed.

*5. DTCP:

Digital Transmission ContentProtection. An encryption protocol that prevents unauthorized duplication,download or alteration of audio or visual media.

- End -

AboutFujitsu Microelectronics Asia Pte Ltd (FMAL)

Fujitsu Microelectronics Asia Pte Ltd wasestablished as the Asia Pacific Headquarters of Fujitsu Limited ElectronicDevices Group in 1986. It provides support, sales and marketing ofsemiconductors and electronic devices to the Asia Pacific region, includingIndia and Oceania. Fujitsu Microelectronics Asia offers a wide and variedproduct range like ASIC, ASSPs, Microcontrollers / Microprocessors (FR-V),System Memory (FRAM / FCRAM) and System LSIs (DVD MPEG Source Decoders / MPEG－2 Encoders).

About Fujitsu Microelectronics Limited

Fujitsu Microelectronics Limited designs and manufactures semiconductors,providing highly reliable, optimal solutions and support to meet the varyingneeds of its customers. Products and services include ASICs/COT, ASSPs, powermanagement ICs, and flash microcontrollers, with wide-ranging expertisefocusing on imaging, wireless, automotive and security applications. FujitsuMicroelectronics also drives power efficiency and environmental initiatives.Headquartered in Tokyo, Fujitsu Microelectronics Limited was established as asubsidiary of Fujitsu Limited on March 21, 2008. Through its global sales anddevelopment network, with sites in Japan and throughout Asia, Europe, and theAmericas, Fujitsu Microelectronics offers semiconductor solutions to the globalmarketplace. For more information: http://jp.fujitsu.com/fml/en/

中国电子报
CHINA ELECTRONICS NEWS

China Electronic News, March 10, 2009

The Favorite Semiconductor Brand in China Market 2008


2008年度最受中国市场欢迎的半导体品牌

English version:

ADI: Adhere to long-term investment strategy in China

Since its foundation in 1965, ADI (Analog Devices Inc.) has experienced several industry changes and has made brilliant achievements. Based on more than 40 years of efforts, ADI has become a well-known brand in the world's semiconductor industry.

The business increasing of ADI is most from the USA and Europe several years ago, but now ADI is quickly entering into the market of South East Asia and China. As the great demand to TD-SCDMA from Chinese market, ADI has gained great achievement in China.

In the 2008 fiscal year, the revenue of ADI reached $2.6 billion. Its end market can be divided into industrial instrument, consumer electronics, wireless infrastructure, automotive, defense and medical. In 2009 and over the next few years, medical electronics is also the main area ADI need to focus.

In 2008, ADI has been strengthening its investment in China. In January, ADI and NARI-Relays Electrical Co., Ltd. formally established a joint laboratory, which is the first time for ADI to cooperate with an industrial enterprise to establish a joint laboratory in China; in March, ADI Shanghai Power Management Research Center is founded; in December, ADI and Beijing Sifang Automation Co., Ltd. set up a joint laboratory in Beijing. Therefore, it is very obvious that ADI's strategy for long-term investment in China has not changed.

As a leading manufacturer of high-performance analog integrated circuits, ADI's products are widely used in analog signal and digital signal processing. As the performance of the data converters and digital signal processors is getting higher and higher and the functionalities are getting more and more, the proportion of signal processing technology in the market and applications is growing. Currently, ADI's core analog and DSP technology is widely used in various fields. With the deepening of the digital revolution, the user's demand for ADI technology is increasing. In the areas such as automotive, digital cameras, flat-panel TVs, cell phones, medical imaging equipment and industrial automation equipment, chips from make the connections more smoothly, make the images more vividly, make the voice more clearly and finally make the products more portably. The core analog and digital signal processing technology of ADI has been used in every area. (Liang Hongbing)

Broadcom: to provide more technical support for customers in China

Despite the semiconductor companies are badly affected by the international financial crisis in the fourth quarter of last year, the achievement of Broadcom in 2008 is still very attractive. The revenue of Broadcom in 2008 is $4.658 billion, which increases 23% compared with $3776 million in 2007. The latest data form a market analysis company - IC Insights in March 2009 shows that the most brilliant company in the world's top 20 semiconductor companies in 2009 is Broadcom. It ranked 17 last year first in 2007 with an increase from 23 of 2006 and successfully entered the top 20 semiconductor companies, and also it is the second-largest fabless semiconductor company in the world. Meantime, Broadcom is also a member in the few companies with positive growth last year.

As the world's leading semiconductor company in communication area, Broadcom has the top shares in many areas, such as wireless LAN, Bluetooth, DSL, Ethernet switches and wireless product portfolio technology. Broadcom has been firmly established its leadership in the innovation of the cable and wireless communications semiconductor. In addition to the actively introduce the leading innovative products to meet to meet customer demand, Broadcom also actively promote the company's growth concept as well as operation concept and its product promotional strategies; introduce the market trends and the new product application area; help the customers and consumers understand the market orientation and the technology knowledge; eliminate their tension in the application of certain technique.

Even in the current downturn environment, Broadcom CEO, ScottMcGregor said it would still maintain their development efforts on the innovative product, and introduce industry-leading portfolio of products and technologies every 60 days. In China, Broadcom has already started to explore the structure of future products with the key customers and let these customers to make the early testing to the products from Broadcom as well as provide more technical supports. The cooperation of these different projects makes Broadcom have more close cooperation with the customers in China. (ZHAO Yanqiu)

Freescale: Get the achievement under the win-win model with Chinese corporations

Freescale changed its business mode in 2008 and successfully reduced the business dependence on its original parent company

– Motorola. Based on the customer, Freescale represents itself with a more flexible approach and actively seek new partners. For example, its chip has been successfully embedded into BlackBerry product of RIM.

Freescale's investment to Chinese is earlier than the other companies in the semiconductor industry. In 1992, Freescale established the first assembly and testing factory in China and in 1999 which are belonged to the first American companies to process design and manufacture of semiconductor in China. There are about 3800 employees in China currently.

In 2008, Freescale continues to strengthen the cooperation with Chinese enterprises to explore win-win mode, and certain achievement has been got. In April 2008, Freescale and Chery Automobile announced to establish a joint automotive lab aiming to jointly develop the chip, software and system solution used in the Chery automotive for the market in China and abroad. In early November 2008, Freescale and EVOC Group which is the largest developing company for the area-specific company enhance the cooperation in the power network control fields and promote EVOC's latest product series and solutions based on Freescale's core technology. Furthermore, their cooperation is not only limited to the area of power, but will be extended to more industries in the future. In the prior, Freescale has already jointly established a micro-electricity lab with South Zhuzhou Electric Microelectronics Co., Ltd. which is a leading company in the field of rail transportation electrical systems. Their cooperation covers current conversion, control and diagnosis, safety monitoring, information and communications, power electronics and control and other core technologies.

In the current international financial crisis, the cash flow was regarded as a major standard. Freescale currently owns $1.3 billion cash, plus the $460 million loaned from bank so the total cash is $1.76 billion, which is sufficient to cover any large-scale investment in its research and development. (ZHAO Yanqiu)

Fujitsu Microelectronics: Create a brand with high-quality and high reliability

Since 2003, Fujitsu Microelectronics has been focusing on the Chinese market and has been making effort on the layout. Many of its developing technologies in the micro-controllers area, such as automotive electronics, audio and video are aiming at Chinese market. In 2008, Fujitsu Microelectronics further enhanced its localization strategy in China including expanding local R & D team, enhancing the cooperation with the local enterprises as well as the cooperation with the universities and research institutes.

Fujitsu Microelectronics strengthened the local technical support team, including the persons in solution areas to meet the increasing demand of Chinese customers on technical support and services. In a short period of 5 years, the technical team of Fujitsu Microelectronics already has more than three-fold growth. Fujitsu Microelectronics has also strengthened its cooperation with various partners of the joint development, and the design centers located in Shanghai, Hong Kong and Chengdu and other places have introduced a different solution. At the same time, Fujitsu Microelectronics began to recruit the talent on project control in order to enhance their interaction and cooperation with the customers closely in the whole project and realize one-stop services.

Fujitsu Microelectronics owns the independent laboratory in nearly 10 universities and its cooperative institutions cover the major provinces and cities throughout the country, "Fujitsu Microelectronics MCU Cup Race" has become a brand and the participating schools achieved about 200.

Fujitsu Microelectronics is always valuing the brand of the company. Even in the international financial crisis, Fujitsu Microelectronics still keeps its all long principles and investment in maintaining company's brand. Cost-cutting took place only at the operational level, such as the adjustment of the size for some promotional activities. However, we still need to take part in the main brand activities, such as IIC (International IC-China Conference & Exhibition), and CCBN (China International Broadcasting Expo TV information network) and so on. Fujitsu Microelectronics also entered colleges and universities and research institutes to have a number of seminars. Combined with the pursuit of technologies and services, Fujitsu Microelectronics will do its best to give the brand unique positioning and discriminating for the high quality and high reliable brand. (Liu Chao)

MediaTek: The Continuous Innovation Gains more attention

As is well known, based on its innovation with its own mode, MediaTek becomes the leader in the chip market for mobile phone, but in reality, the success of this company is not only rely on this. This company has a unique business strategy and marketing strategy and never stopped the pace of innovation. MediaTek is not only actively involved in its own new research and development, but also strengthen its leading position through the cooperation with some leading brand in the industry.

Under the international financial crisis, MediaTek still has a good overall growth in 2008, and the annual revenue increases 12.5% over the previous year. The benefit of purchasing the cell phone chip business from ADI appears. Meanwhile, Continuous innovation of the technology and the improvement of the management capability are also the important drive for MediaTek.

We can see that MediaTek with a great success isn't satisfied with its past achievements, it is always positioning itself as a technology-oriented company and continually strengthen the technical research and development in Shanghai in 2008. MediaTek achieved greater progress in the 3G field in 2008 and solve the problems of TD-HSDPA (2.8 Mbps) and TD-HSUPA (2.2Mbps) in TD aspect; the developed WCDMA (Wideband Code Division Multi-transmission technology) program is now verified by the customer; in some new growth area such as 2G/2.5G dual G and dual card area, the relevant technology from MediaTek also has a leading position.

In addition to the field of mobile phones, MediaTek has also gained achievement in the chip for digital television in 2008, and its digital TV chip has get certain standard in multimedia functionality, communication features and entertainment functions; in the Blu-ray aspect, it insist close cooperation with domestic manufacturers combined with export sales strategy, and develop the Blu-ray player jointly, simultaneously developing domestic demand as well as export markets.

Technological advances make the enhancement of the product both in the maturity and stability and also make the improvement of the added value of products. In fact, the support to sub customer from MediaTek is still upgraded. It changed its focus from the time to market to product quality and develop to more specialized and differentiated services. (Feng Jian)

NXP: Innovative products lead the development in the industry

As early as the end of 2007, NXP has already foreseen the shrinking trend of the industry, so NXP has well prepared for the coming turndown in advance. NXP has determined a clearer focus in the future business: it will maintain the area that is in the top 3 currently; it will make effort on the area that is able to become the top 3 through investment in technology; also it will abundant some areas that are disable to make the top 3.

During the industry adjustment and economic shocks, NXP has a transform in advance to adjust the company's business structure and finally led the development trend of industry combination. For example, NXP purchased the set-box business from Conexant in 2008 to enhance the competitiveness of its core products. At the same time, NXP has also taken the lead by reducing operating cost and all of the measures can help NXP to meet this international financial crisis and seek better prospects.

NXP brand has always been established on the providing customers with excellent products and solutions. With the industry experience over years, NXP is able to accurately grasp the development of the industry trends; gain insight into customer needs and lead the industry development trough the innovation in order to keep the consolidate brand figure in market. The long-term commitment to the customers and Chinese of NXP and the strong local technical team is the solid guarantee to maintain its brand influence. During periods of economic difficulty, NXP emphasis more on efficient investment and ensure the optimum output from the technical research and development, product line marketing planning to the promotion.

More and more Chinese customers need the technical innovation targeted at the localization of Chinese market to meet the diverse demands of local customers. For example, the innovation method of NXP in China includes cooperation with Chinese universities and the establishment the joint R & D R & D center. Each R & D institutions of NXP in China are playing a very important role, which includes not only NXP's internal part of R & D institutions, but also the co-operation with partners' agencies. The development goal of the R & D center in China is to cooperate with the development department of Europe and the United States to provide the cost effective products and solutions in a timely manner with reasonable investment.

ROHM Semiconductor: Provide "one-stop" services to the Chinese market

Although it was affected by the international financial crisis and the achievement faces challenges, Rohm still actively have the acquisition and enlarge the investment to the market and layout to to obtain more competitive and achieve long-term development.

Rohm have a more wide range of semiconductor products group, including large-scale integrated circuits, optical components, modules, components, discrete components and so on, is a technology with decades of accumulated business. In 2008 because of the OKI chip sector has been the industry's concern that the acquisition of it. Known as the M & A in Japan since 2003, the Japanese semiconductor industry's largest mergers and acquisitions, as the semiconductor and Rohm OKI Semiconductor products have less repeatability, the

two sides can mutually learn from each other, they can complement each other, experts believe that the acquisition will enable the Law al OKI Semiconductor and semiconductor sales and the profitability can be further improved.

In sales, the combined companies can also make the best use of their marketing offices, technical support offices to strengthen the product marketing ability. Therefore, experts estimate that this acquisition will enable the Rohm to become Japan's seventh-largest semiconductor manufacturers.

Mergers and acquisitions will undoubtedly enhance Rohm against international financial crisis.

As Rohm pays more attention to the Chinese market and makes persistence investment, it gained more market share. In the current global semiconductor market for Rohm, the growth rate in Chinese market ranged the top. Rohm has two manufacturing factory in Tianjin and Dalian and has three marketing company and ten contact office in Shanghai, Dalian, Hong Kong.

In December 2008, Rohm Semiconductor (China) Co., Ltd. completed the industry and commerce procedure for adding $71.80 million in Tianjin Development Zone to add large-scale integrated circuits. Tianjin factory occupies an area of 110,000 square meters, becoming the largest investment company in Microelectronics Industrial Park in Tianjin. Thus, the total investment of Rohm in China reached $319 million and the registered capital is $125 million. This manufacturing factory is the largest factory for semiconductor and electronic products manufacturing world wide for Rohm. Continually enlarging the investment and improving the sales and after-sales service network, and the manufacturing and customer service is therefore enhanced. It realized the one-stop service including development, production and sales in China market. The "Made in Market" in China market is really achieved. (Feng Jian)

STMicroelectronics: Innovation in China for the creation of Chinese Chip

In, 2008 STMicroelectronics (ST) has experienced a serious challenge. First of all, the international financial crisis delays the process of establishing the Flash memory company under the joint venture with Intel. Secondly, ST would also to face the challenge from the exchange rate from euro to U.S dollar. As a result of the euro against the U.S. dollar has been very strong, ST's effort on cutting cost is reduced.

However, even faced with the challenge, ST still get important success in semiconductor industry 2008.

First of all, the net income ST in the whole year of 2008 is $9.84 billion, excluding the fiscal achievement of flash memory products and NXP Wireless business group. The net income is 2008 increase4.8%. If NXP Wireless business group is included, the revenue growth is 10%. At the end of fiscal 2008, before the acquisition, ST owns as much as $6.5 billion net operating cash flow.

Secondly, 2008 is a key year for ST to promote the strategy of re-positioning the products portfolio. ST has large investment in power application and multimedia area including wireless communications and digital consumer and certain benefit has been got. For example, ST finally realized the cooperation with Intel in Flash business. The reorganization in wireless area has also made critical progress.

ST has cooperation with NXP to create a joint venture company for wireless business first and then the joint venture company is combined with the mobile platform of Ericsson, therefore a real leader in wireless area is generated. With the completion of a series of restructuring, ST can concentrate all resources in its power semiconductor and multimedia.

In China, ST adheres to the principle of "Innovation in China for the creation of Chinese Chip". In 2008, the new headquarters of ST was officially opened in Shanghai. In addition to existing functions, the main work of the new Greater China Headquarters Building in China is focused on product research and development operations to develop innovative solutions for the customers both in China and worldwide.

In all the staff in Greater, R & D engineers account for about 1 / 2. The silicon design team of ST in Greater China has developed more than 60 kinds of new products for domestic and international customers. In addition, the second testing factory of ST is under construction in Shenzhen, and have important cooperation program with the Chinese colleges and universities. (ZHAO Yanqiu)

Xilinx: FPGA continues to expand the ecological industry chain

The biggest changer for Xilinx in 2008 was the overall reorganization of the company structure.

January 8, 2008, Moshe take over the CEO position in Xilinx and have a overall reforms to the company's organizational structure, especially in China area. In order to pool resources and speed up the progress of new product development, Xilinx began to change from the division by the business to the division by function. The new structure of Xilinx is committed to provide the customer oriented solutions and optimizes the centralized enterprise management, therefore the business process is greatly simplified and the decision-making process is speed up.

During the internet bubble period in 2001, 80% of the business of Xilinx was focused on the communication business, so the revenue of Xilinx decreased largely when the communication area is affected.

Since then, Xilinx broadens the company's product lines, thereby enhancing the company's ability to resist risks. The business mode of Xilinx is rather powerful: the gross margin is over 60% and the operating profits have exceeded 20%. While Xilinx will be the impact by the economic recession, but compared to most other semiconductor companies it is much better.

In 2008, Xilinx has begun to implement a more active strategy to develop the Asia Pacific market, especially the Chinese market. In fiscal year 2008, the company's revenue in the Asia Pacific region accounted for 29% of the world's total revenue. Faced with the rapid development of the Chinese market, Xilinx has taken the following initiatives: First of all, to meet the ever growing demands from customers by strengthen customer service support, meanwhile to realize the rapid growth in China through expanding. Secondly, to invest the partners that help Xilinx establish the industrial ecosystem chain. Xilinx has set up a venture capital funds of $75 million, and the main target of this fund is to create new company. The interested area of Xilinx is wireless, video, monitoring and network security and other fields. Thirdly, to train and educate the electronic engineers continually, and make the engineer who did not use Xilinx products find its potential and will use these products. Fourthly, to perform the university plans continually. Xilinx is widely taking the university plans in China and establish the entire university network to support the Xilinx new areas of research and development. Through the "intimate contact" college students, Xilinx is also establishing the foundation for building the localization team and construct the planning blueprint for reserving the talent. At the same time, to expand the ecological industry chain of programmable technique through the cooperated laboratory with colleges and universities. (Liu chao)

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Status of Talent Training of Mainstream Semiconductor Companies in China


8版 人才 最受中国市场欢迎的半导体品牌

补齐微电子人才短板
加强科研实践是关键

English version:

Company	Talent Training Strategy
ADI	So far scores of universities in China have built joint laboratories with ADI, who provides them with fund and technical service. Since its foundation in 2006, ADI has held the University Design Competition with the aim of cultivating the innovation ability, teamwork spirit and engineering practice of students.
Broadcom	Broadcom strengthens the relationship with first-rate universities in China, provides the students with practice opportunities, and allows them to learn and participate in the research and development of the most advanced communications and semiconductor technologies.
Freescale	Freescale has built embedded teaching laboratories in over 50 universities in China. The collaborative projects include fuel cell project, hybrid-power vehicle project and so on. National College Student Freescale Cup Smart Car Competition is sponsored by Freescale and has been successfully held 3 times.
Fujitsu Microelectronics	The forms of the cooperation between Fujitsu Microelectronics and universities in China include building joint laboratories, jointly developing projects, periodically holding seminars, compiling textbooks, conducting nationwide competitions and so on. So far Fujitsu has set up about 10 independent laboratories in universities in China. Students from about 200 universities in China participate in the Fujitsu Microelectronics Cup MCU Competition.
MediaTek	MediaTek has continuously sponsored the exchange visits between universities on the two sides of Taiwan Straits for many years and conducts scholarship to finance many inland universities in China. In 2009, MediaTek collaborates with Peking University, Tsinghua University and the University of Science and Technology of China, jointly researches next generation video coding/decoding and processing method as well as the advanced technology in audio sampling system.
NXP	Since its foundation, NXP has held twice NXP Cup Design Competition and conducts students to master more practical technologies.
Rohm Semiconductor	Rohm seeks for talented persons in a wide range and provides them with self-fulfillment opportunities based on individual strength. Supervisors from China increasingly emerge. Meanwhile, Rohm will also drive the talent localization.
STMicroelectronics	STMicroelectronics commits itself to exert the power and influence of learning. Sustainable learning has become part of the success of yesterday and today and will play an important role in future.
Xilinx	Till 2008, Xilinx has built 6 FPGA innovation centers in state-level IC industry bases of 6 cities, got nearly 5000 members of university program, set up over 50 joint laboratories and published scores of FPGA-related books.