FUJITSU MICROELECTRONICS LIMITED
ASIA E-newsletter
23rd Issue Oct – Nov 2008

THE POSSIBILITIES ARE INFINITE FUJITSU

Corporate Message

Recently, most of us will concern about the economy crisis happened in Western countries and the impact to us. Though the impact does slow down the worldwide economy, it also provides us a chance to cope with the change and prepare ourselves to achieve next top.

With our continuous investment in technology development, October is the harvesting season to our team effort and hard work yield a bountiful harvest for Fujitsu Microelectronics. With leading-edge technology products.....

Fujitsu Microelectronics and Beijing University of Aeronautics and Astronautics join hands to set up a MCU Lab to explore SRTP

Fujitsu Microelectronics wins the Most Popular Digital TV Supplier in China 2008 award

Fujitsu Microelectronics attended IFTC 2008

Showcasing new products at Fujitsu Forum 2008

Fujitsu Microelectronics sponsors school reconstruction in Sichuan earthquake area

- Fujitsu launches new ultra-low power full HD H.264 CODEC LSIs
- Activities: Fujitsu Microelectronics at ICTC 2008
- Interview clipping from Auto Parts and Accessories Journal: Fujitsu Microelectronics
- Press release from Singapore Hardware Zone: Fujitsu announces new Fujitsu mobile WiMAX base station SoC

About Fujitsu Electronic Devices Group (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 form Fujitsu Electronic Devices Group Asia (EDGA) to provide a one-stop center for its semiconductor products to all customers in the Asia-Pacific region. In addition to sales and marketing of semiconductor products, EDGA 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 Taiwan, EDGA 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, EDGA can readily delivers innovative and value-added solutions and varied range of products to its target markets in the Asia-Pacific region.

About Fujitsu Electronic Devices Group (Asia)

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 (Flash Memory/ FRAM/FCRAM) and System LSIs (DVD MPEG Source Decoders/MPEG –2 Encoders).

Corporate Message

Recently, most of us will concern about the economy crisis happened in Western countries and the impact to us. Though the impact does slow down the worldwide economy, it also provides us a chance to cope with the change and prepare ourselves to achieve next top.

With our continuous investment in technology development, October is the harvesting season to our team effort and hard work yield a bountiful harvest for Fujitsu Microelectronics. With leading-edge technology products, it has won several well-known industry awards including "Leading Product of EDN China 2008 " and the "Most Popular Digital TV Supplier in China 2008" Award. As Fujitsu Microelectronics increases its investment and support on China education, it has not neglected making contribution to society, and thus organized a "Love Journey" recently in Sichuan earthquake disaster area.

In area of product development, Fujitsu Microelectronics continues to be innovative and has recently launched two new products. First one is the new scalable WiMAX base station SoC supporting pico and micro base station architectures, followed by a new ultra-low power full HD H.264 CODEC LSI. In addition, EDN China has awarded recognition for Fujitsu's DSP, consumer ICs and microprocessor. As a result of quality service and continued innovation, Fujitsu Microelectronics won the "Leading Product of EDN China 2008 Award" and the "Most Popular Digital TV Supplier in China 2008" Award, which demonstrates that the brand name and technology advantages of Fujitsu Microelectronics are widely identified by customers and medias in China.

Sunny Chan,Senior Director of Corporate Development,Fujitsu Microelectronics Asia

In the effort of promoting education, Fujitsu Microelectronics continued to strengthen its cooperation and interaction with universities. It has joined hands with Beijing University of Aeronautics and Astronautics to set up the third MCU Lab, fulfilling its promises to promote education in China. Two laboratories have been set up in the last few months with Shanxi University of Science and Technology and Southwest Jiaotong University.

The past months have also been busy time at events platform. At the Fujitsu Forum 2008 in Beijing on Nov 19 and 20, Fujitsu Microelectronics showcased its green power supply products, low power MPEG-2 decoder solution and automotive electronics solutions. Fujitsu Microelectronics also participated in several industry forums and seminars such as the 2008 Automotive Electronics Technology Forum (AETF 2008) organized by New Electronics magazine; the 2008 International Coverage and Transmission Conference (ICTC 2008); and the Summit of Silicon Intellectual Property 2008 (SSIP 2008). Through these activities, Fujitsu Microelectronics aims to strengthen its communication with the industry and the community.

Read more about these events in the 23rd issue of Fujitsu Microelectronics Asia e-Newsletter!

HOME

Press Releases

New Fujitsu Integrated Flexible WiMAX SoC Supports Femto Base Stations, and Can Scale to Pico and Micro Base Station Architectures

Singapore, Oct 6, 2008 - Fujitsu Microelectronics Asia Pte Ltd (FMAL) has announced a new Fujitsu mobile WiMAX base station SoC, a highly integrated, flexible device built using the leading-edge Fujitsu 65nm process technology. The scalable WiMAX SoC can support pico and micro base station architectures, enabling system manufacturers to implement a single solution across multiple, small base-station platforms. The new SoC incorporates all the PHY and MAC features along with the analog and digital radio control, and analog circuits required for base station products to pass Mobile WiMAX Wave 2 certification requirements. An on-chip processing unit delivers the power needed to handle all functions of a femto base station. For larger base station applications, an additional processor can be connected by means of a PCI host interface to handle larger demands for more throughputs and a bigger user base.

For more information, please visit:
http://www.fujitsu.com/sg/news/pr/fmal_20081006.html

Fujitsu Launches New Ultra-Low Power Full HD H.264 CODEC LSIs

Singapore, November 3, 2008 - Fujitsu Microelectronics Asia Pte Ltd (FMAL) has announced two new LSIs to expand its line-up of H.264 CODEC LSIs, that encode and decode Full HD (1,920 dots x 1,080 lines) video in the H.264 format. The first of the two products, the ultra-low power MB86H55, features power consumption of only 500mW during Full HD encoding including the in-package memory, an industry-leading level for low power consumption. Sample shipments of the MB86H55 will start in January 2009. In addition, the upcoming LSI, MB86H56, will offer processing of Full HD video at 60 frames per second (progressive), 60p, to improve picture quality even further. Samples shipments of the MB86H56 will start from April 2009.

For more information, please visit:
http://www.fujitsu.com/sg/news/pr/fmal_20081103.html

Activities

Fujitsu and Beijing University of Aeronautics and Astronautics join hands to set up MCU Lab to explore SRTP

Fujitsu Microelectronics (Shanghai) and the Beijing University of Aeronautics and Astronautics (BUAA) have joined hands on Oct 10, 2008 to set up a MCU Lab, in order to explore Student Research Training Program (SRTP) together. The BUAA has a prominent position in the area of aeronautics and astronautic engineering. This is another important milestone in Fujitsu Microelectronics' "University Project" that focuses on higher education promotion. After the unveiling ceremony, Edwin Kwong, senior vice president of Fujitsu Microelectronics Asia Pacific, gave a speech on Study and Practice-Fujitsu Model. In his speech, Edwin encouraged students to combine ideality with reality through a clear analysis of their idealities. This speech is a good lesson between ideality and reality as well as the study and practice.

From Left: Mr Edwin Kwong, Senior Vice President of Fujitsu Microelectronics of Asia-Pacific unveiling a plaque with Mr Zhangjun, dean of School of Electronics and Information Engineering, BUAA, as a symbol of their cooperation.

Fujitsu Microelectronics attends 2008 Automotive Electronics Technology Forum (AETF 2008), Shanghai

Fujitsu Microelectronics has attended AETF 2008 organized by Micro-Electronics magazine in Shanghai on Oct 17. More than 300 people were at the forum, including R&D supervisors and engineers in the auto parts and vehicle manufacturing industries; technical supervisors of enterprises involved in the design and manufacturing of automotive body control system, vehicle sound equipment and so on, as well as professors and researchers. Ding Jiezao, Fujitsu Microelectronics product manager delivered a speech at the forum, to introduce solutions for automotive electronics.

The AETF 2008 in session

Mr Ding Jiezao, Fujitsu Microelectronics product manager, delivering a speech entitled Fujitsu Microelectronics in Automotive Electronic System.

Fujitsu Microelectronics won "The Most Popular Digital TV Supplier in China 2008" Award

The Award

FMC attended the 2nd 2008 China Digital TV User most popular brand (chip) seminar organized by China Electronics News, DVBCN and China Media University on Oct 22 in Hangzhou, China.

Representatives from end-product manufacturers, including Jiangsu Yinhe, Changhong and Tele operators including Beijing Gehua CATV Network, Tianjing broadcast and TV network were invited to speak at the event.

FMC DAV manager Cedric spoke on"Better service to STB applications in post-whole transition era"and garnered high interest from the audience.

Fujitsu Microelectronics attends the 5th International Forum of Digital TV & Wireless Multimedia Communication (IFTC 2008), Shanghai

Fujitsu Microelectronics attended the IFTC 2008 organized by the China International Industry Fair, which was in Shanghai on Nov 7 and 8, 2008. Mr Kiminori Fujisaku, vice-chairman of the board of Fujitsu Microelectronics, gave a speech called Technologies and Products for Digital Broadcasting and Mobile Services.

Mr. Kiminori Fujisaku, vice-chairman of Fujitsu Microelectronics, speaking on Technologies and Products for Digital Broadcasting and Mobile Services at the IFTC 2008.

Fujitsu Microelectronics attends 2008 International Coverage and Transmission Conference (ICTC 2008), Hangzhou

Fujitsu Microelectronics attended the ICTC 2008 in Hangzhou, Zhejiang Province, from Oct 23-25, 2008. The conference has been held successfully for 15 times since 1992, and has become the largest and most influential international seminar in the Chinese cable TV sector. At the conference, Cedric Huang, Fujitsu Microelectronics Marketing Manager, delivered a speech on STB New Application in Post-migration Era and communicated with experts and manufacturers in the industry.

Cedric Huang, Fujitsu Microelectronics Marketing Manager, speaking on STB New Application in Post-migration Era.

Fujitsu Microelectronics attends Summit of Silicon Intellectual Property 2008 (SSIP 2008),Shanghai

SSIP 2008, held in Shanghai on Nov 19 and 20, had Fujitsu Microelectronics' participation at the summit. Mr Liu Hui, Fujitsu Microelectronics marketing manager, spoke on Fujitsu Solution for Foundry Differentiates Your Business, and held in-depth discussions with the experts.

Mr Liu Hui, Fujitsu Microelectronics Marketing Manager, giving his presentation

Fujitsu Microelectronics' Two Products Won the Leading Product of EDN China 2008 Award

Two Fujitsu Microelectronics products, the MB88388A/MB88389 controller and MB86H52 high definition transcoder, won the Leading Product of EDN China 2008 award, in the areas of microprocessor and DSP and consumer IC respectively. Established in 1990, EDN China Annual Award is intended to provide recognition for the most influential electronic products and technology. Fujitsu Microelectronics DAV product manager Cedric Huang participated in the award ceremony and received the awards on Nov 6 in Shenzhen. This year, 74 companies and 160 products submitted entries for EDN China Innovation Award, and 67 products from 50 companies were shortlisted.

The Leading Product of EDN China 2008 awards for Fujitsu Microelectronics MB88388A/MB88389 controller and MB86H52 high definition transcoder.

Fujitsu Microelectronics showcases new products at Fujitsu Forum China 2008, Beijing

FMC attended the Fujitsu Forum 2008 on Nov 19 and 20 in Beijing organized by FCC. At the Forum, products including power management IC, automotive product (FlexRay and GDC) and DAV product (MB86H35) were showcased in accordance to the theme, Green IT and Security. Subsidiary companies of the Fujitsu Group in China gathered together to demonstrate the advanced technology and latest products, presenting the leadership of Fujitsu in China as the best partner. FMC also invited customers from Beijing to attend. The first day was for VIP guests and about 100 people attended, while the second day was opened to others and about 300 people visited the forum.

The FMC booth showing green power supply and low power MPEG-2 decoder solutions.

Automotive electronics products were displayed at the FMC booth.

Fujitsu Microelectronics sponsors reconstruction of schools in earthquake-hit Sichuan areas

Schoolchildren drawing pictures in the "Our New Homes" competition

Mr. Tetsuo Suzuki, Vice Chairman of Fujitsu Microelectronics of Asia-Pacific, handing out awards to schoolchildren

Mr. Michael Shih, Chairman& CEO of Fujitsu Microelectronics of Asia-Pacific, delivering a heart-warming speech

Fujitsu Microelectronics (Shanghai) recently organized a "Love Journey" to Mianzhu and Cifeng in the Sichuan province. School uniforms and supplies were brought for children to celebrate the opening ceremony of the schools rebuilt with donations from Fujitsu Microelectronics. As part of the celebrations, Fujitsu Microelectronics supported a drawing competitions based on the theme, Our New Homes, for the school children to allow them express through their drawings the loving care that they have received from society during the earthquake disaster.

President and CEO of Fujitsu Microelectronics of Asia-Pacific Michael Shih, and vice chairman, Mr Tetsuo Suzuki, have respectively delivered heart-warming speeches at the opening ceremony.

Special Press Reports

Media Interview

今日電子 Electronic PRODUCTS

Electronic Products China, Nov 2008


汽车电子论坛 汽车电子论坛

电子技术推动汽车环保、安全和娱乐性全面提升（上）

Eng version

Electronics promotes automotive clean energy, upgrades security and recreation systems

According to statistics, electronic components used in each car increase 4%-5% every year. Advanced electronic technologies have been coming into use everywhere in cars, such as, engine management, driving assistance, information system. After MP3 and mobile TV, what is the next automotive electronic product that will play a big roll in cars? Since the security system is becoming increasingly complicated, what our technology can do to address this new need?

To answer these questions presented by Wang Renzheng, the editor of Electronic Products China and the analyst of iSuppli, we invited the suppliers of memories, sensors, microcontrollers, power management etc, to give you their insight answers.

Electronic Products China: 27, Sept, MidAmerican, a subsidiary company to Berkshire Hathaway under the big boy, Warren Buffett, signed an agreement with BYD Company Limited on Strategic Investment and share purchase. According to the agreement, Buffett will buy 2.25 hundred million BYD shares at 8 HK dollars each, the total price comes to 18 hundred million HK dollars, and Buffett will become a 10% shareholder.

As a leading automaker in the field of electric vehicles, BYD believes that it is self-evident that the application of new energy is becoming a leading trend in the world. Do you think the investments from the capital market will boost the development of the electro-mobile cars and other new energy cars? What is your solution in terms of energy conservation?

Willie Fitzgerald, the supervisor of the "Microchip Technology", said: "Hybrid or electric cars are the hot areas where the all the big OEMs are trying to lay their hands on. The electronic modules in hybrid engines take more electronic components than non-hybrid cars.

To meet with the development of the auto market, and to make the embedded solutions fit into application, we provide plentiful of 8-bit, 16-bit and 32-bit microcontrollers, and combinations of analog and memory devices. For instance, the embedded solutions for various applications including, LED illumination, HID, smart power supply and motor control, etc.

As auto emission control become more and more strict, especially in Europe, the big European auto OEMs and first tier suppliers have taken various measures to reduce CO2 emissions and employ electronic devices to improve fuel mileage. Big European auto OEMs and first tier suppliers submitted numerous reports on the importance of electronic motor control to reduce power consumption, such as, motors in hybrid cars and motors in traditional cars, EPS, electric water pump, BLDC demand-driven fuel pump, and airflow auto control on the engine, which can reduce fuel consumption and CO2 emission by 10%. The medium scale hybrid and full scale hybrid on/off devices offer a great chance to reduce fuel consumption, especially in cities. Within these systems, smart motor control, DC/DC converter and battery cell monitoring are necessary parts in function. PIC16F,PIC18F and analog family from Microchip provide solutions for BLDC motor control, such as, the cost

effective, BLDC motor control solution of PIC16F616 without sensor.

Please review our website for more information of design and software reference.

Wang Yu, Senior Manager of Marketing Department of Fujitsu

Because of oil crisis, automakers are actively exploring new alternative energies. Electric vehicle and hybrid energy vehicle also take their part in this exploration. However, production cost is still the main hurdle for the development of new energies. If the cost of the new energies were competitive than the current energy, their market share will grow rapidly.

Fujitsu has a wide range of automotive qualified production lines. Our microcontrollers cover the areas of GDC, FlexRay, IDB-1394 and other standard specific applications.

We provide low power consumption microcontrollers in cars to reduce power consumption, such as the latest product of 16FX MCU,which features a new design of low power consumption, and the advanced 0.18μm process The power consumption is only 1/5 of its predecessor. The energy conservation will be greatly improved if customers to use this kind of new energy saving products.

Duncan Bennett, Marketing Manager of Ramtron International:

Electric and hybrid vehicles involve a tremendous investment. The investment from Buffett is only a beginning, more investments are needed. It goes beyond doubt that the investment in alternative energy is absolutely necessary, but the problem is, will the oil price keep high enough to encourage the investment?

In addition, the tremendous investment in alternative energy is divided into two parts: technology and infrastructure. As for Technology, the storage of electricity for commercial use is the main hurdle.

All the products from Ramtron are auto oriented, among the standard memory production lines, there are 25% of our products are compliant with AEC-Q100 standard. In order to reduce energy consumption, we engaged in many applications to improve transmission efficiency, take shift-by-wire system for example, this system can improve transmission efficiency and reduce fuel consumption.

Richard White, the Marketing Manager for Auto Electronics from ON Semiconductor:

The investment in electric and alternative energy vehicles will help the development of the technology, but putting these technologies into practice depends on the completion of the infrastructures. We can't see these technologies in wide use, unless the completion of the infrastructures comes into being.

Although the infrastructure is the main bottleneck, the desire from consumers also plays an important roll. Consumers expect the alternative energy vehicles would function as good as oil vehicles, meanwhile they also expect the price should be as same, or even lower.

ON Semiconductor has a history of more than 50 years in the auto service industry, and well understand that the auto products need to have high quality and security. ONSemiconductor developed many solutions to reduce fuel consumption, such as, battery cell management IC, fuel injecting system for gas and diesel engines, power management for hybrid vehicles, static current reducing IC, and communication IC with reduced wiring harness to cut down the weight of vehicles and improve fuel mileage.

InayatKhajasha, Senior Marketing Manager of Auto Product of OmniVision Technologies:

The lack of advanced fuel cell technology is one of the main obstacles in the development of electric vehicles. For instance, if the battery cannot be used after 8 years, then the cost for renewing the battery is higher than the face value of the car itself, the real battery renewing cost would be an equivalence of 8000 USD today! So it'll greatly reduce the lifetime of the vehicle and its second hand value. In brief, the battery cell needs more efficiency and better quality so that the electric vehicles can catch up with oil vehicles. On the other hand, the battery recharge should be much quicker, instead of a whole night time recharging for only 100 kilometers.

OmniVision is a company who concentrated on the sensors of CMOS image. Our products are aimed to meet the needs of the auto market as well as the others. At present, we provide 4 image sensors for the auto market (2 colors and 2 black-and-white for each), and more are in development. All these sensors are compliant with the AEC-Q100 standard. The purpose of the 0.11μm and even smaller CMOS is to minimize the power consumption. Dark current will increase as the ambient tempreture rise, our team did a lot of research on reducing the dark current by minimizing the whole power.

China Electronics News, Oct 31, 2008

Mr Cedric Huang, marketing manager, Fujitsu Microelectronics (Shanghai) Co. Ltd, interviewed by China Electronics News. He discussed the diversification of STB application.

有线电视整转后需着眼多业务应用

Eng version

Cedric Huang: STB application tends to be diversified

After several years of development, China's digital TV market has moved into the post-migration era. As of August this year, the total number of digital TV users has surpassed 38 million. End-product manufacturers and chip manufacturers should consider how to produce higher quality products in the post-migration era.

Several characteristics can be found in this era. One of them is that the number of cabled digital TV users has greatly increased, occupying more than 40% of cabled TV users, which is an indication that the migration has almost been completed in the majority of cities. In this stage, users will have higher requirements on the application of digital TV STB, from fundamental receiving functions to digital broadcasting, from basic middleware to advanced middleware or requirements for functions such as VOD and PVR. At last, they will require Java-based applications and high definition STBs.

Post-migration market needs applications of new technologies and even more advanced technologies, including demand for security chips. Applications in rural areas may also need low cost end equipment.

From the perspective of the chip manufacturers, they need to provide chips that can support different businesses as well as the need to reduce cost. Fujitsu Microelectronics launched chips with 90nm process technology in China market two years ago, which can help reduce power consumption, failure rate, and return and repair rate of STBs.

APA JOURNAL
auto parts and accessories

China Electronics News, July 1, 2008

Auto Parts and Accessories Journal interviewed Desmond Tan, Automotive Marketing Manager of Fujitsu, and Tiew Le, Fujitsu Corporate Communications Executive, to discuss the development of Fujitsu Microelectronics.

FUJITSU MICROELECTRONICS

Bridging the Electronic Divide

The APA Journal spoke to Mr Desmond Tan, Automotive Marketing Manager, Fujitsu a few weeks ago and we were graciously received by a few others from the company as well, including Tiew Le – Fujitsu Corporate Communications Executive and Sri and Ahjay Rai from Porter Novelli, who was mediating the teleconference.

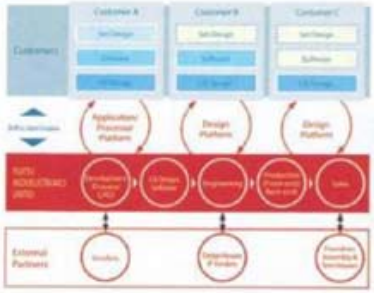
Fujitsu is a leading provider of IT-based business solutions for the global marketplace. With approximately 160,000 employees supporting customers in 70 countries, Fujitsu combines a worldwide corps of systems and services experts with highly reliable computing and communications products and advanced microelectronics to deliver added value to customers. Headquartered in Tokyo, Fujitsu Limited (TSE:6702) reported consolidated revenues of 5.3 trillion yen (US$53 billion) for the fiscal year ended March 31, 2008.

We spoke business models and synergy, research and development philosophy and the fact that a relatively new division of Fujitsu had made rapid forays into the developmental world of cutting-edge semiconductor fabrication.

With regard to their latest rollout Fujitsu Microelectronics announced the development and launch of a new microcontroller driver for its MB91460 Series of high-performance 32-bit automotive microcontrollers. Jointly developed with Elektrobit Corporation of Finland, the new driver is compatible with Release 2.1 of AUTOSAR (*1), the open software architecture for automobiles from the AUTOSAR (Automotive software standards consortium).

The new microcontroller driver will be available from Fujitsu Microelectronics and Elektrobit from July 18, 2008. When used with Fujitsu Microelectronics' microcontrollers, this new driver will offer customers a greater degree of code reusability for automotive onboard applications already developed, and greater efficiency when developing automotive software.

Fujitsu Microelectronics became a premium member of the AUTOSAR organization in 2005 and has taken an active role in the development of onboard microcontrollers. In 2007, the company formed a strategic partnership with Elektrobit, a leading developer of software for automotive onboard systems. The companies worked together to develop a version of Elektrobit's "EB tresos" software for Fujitsu Microelectronics' MB91460 Series of microcontrollers, with both companies agreeing to distribute an AUTOSAR-compatible driver.

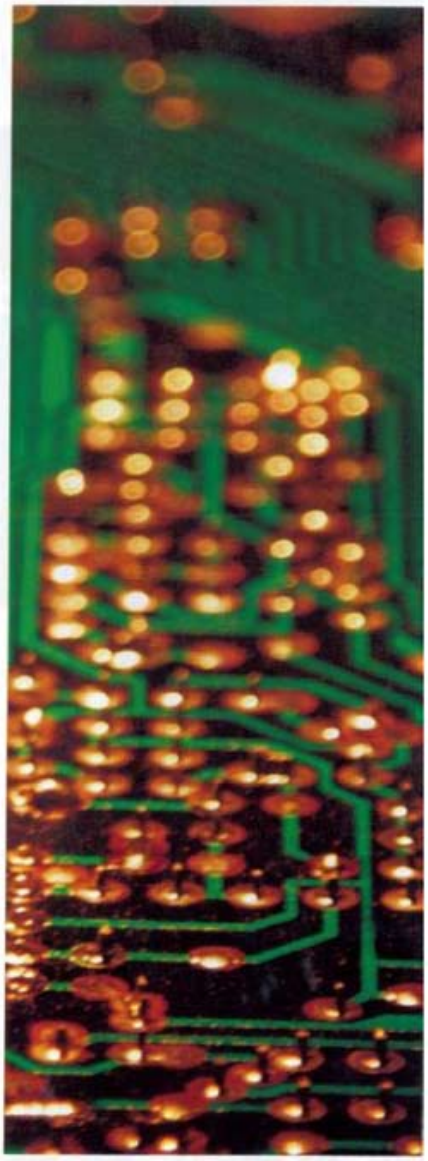


Collaborating collectively on its distinct strengths and expertise,Fujitsu Microelectronics (Shanghai) Co., Ltd., Fujitsu Microelectronics Asia Pet Ltd. And Fujitsu Microelectronics Pacific Asia Ltd. Consort to form "Fujitsu Electronic Device Group Asia" (in short, EDGA), to provide "a onestop centre" of its semiconductor products to all customers in the entire Asia Pacific region. Besides sales and marketing of semiconductor products, EDGA offers flexible business and system solutions for the Digital AV, consumer electronic, automobile and mobile & wireless markets; design and technical support for its customers, locally and regionally.

While collaborating with several companies like Continental and Hella , Fujitsu has a long standing history with companies like BMW, Porsche and Volkswagen to name a few. While the company insists on quality, a driven team of professionals focus on sustainable business management. This means continuously creating value through their activities, products and services in a sustainable manner that will contribute to a better society, now and into the future.

The Organisation also has anther strong focus – Environmentally Compliant Standards. Fujitsu's corporate social responsibility to the world means all their products are ROHS compliant (Restriction of Hazardous Substances Directive). This means the restriction of the use of certain hazardous substances in electrical and electronic equipment. Fujitsu is committed to making sure they reduce their carbon footprint on the world by reducing environmental impact throughout the product lifecycle.

We will be hearing a lot more about their developments in the future and only wish them the best on their journey of bridging the electronic divide.



THE ECONOMIC TIMES

The Economic Times, Oct 6, 2008

Mr Rick Wong, general manager of Fujitsu Microelectronics, Asia, gave a telephone interview to Economic Times and discussed the functions of GDCs.

thePRACTICE
STRATEGIC COMMUNICATIONS

PUBLICATION: ECONOMIC TIMES DATE: Oct 6 2008
EDITION: BANGALORE

FUTURE ON WHEELS

Neenu Abraham & Nidhi Gupta

PICTURE THIS scene. You are driving home after a day's work. You can hardly keep your eyes open. You lose sight of the road and drop off to sleep. Bang — there you've hit the big Banyan tree round the kerb. Imagine this scene 10 years from now. You drop off to sleep. But your vehicle is awake, literally. A beep sounds to alert you that you driving too close to the vehicle in front. You are too tired to respond and your car is inching closer to the vehicle in front, almost ready for a bang — all of a sudden the brakes get alerted on its own and your car stops... your life and vehicle are safe. We are talking of cars of the future, cars which can talk and take over your vehicle if the driver isn't alert.

Says Rajeev Mehtani, VP and MD of NXP Semiconductors: "Now technology is being developed whereby your car can measure the speed of the vehicle travelling in front of you and behind you. So if your car gets too close to the vehicle in front, the driver is alerted immediately." This technology is expected to hit the market in the next 10 years. As of now, there is a slew of keyless entry technology which rides on near-field communication (NFC) and passive RFID features.

"You no longer need a key to unlock your car doors. You just need to stand somewhere close to the vehicle. Even if your key is in your pocket, your vehicle senses it and unlocks the doors. Chips embedded in the car help you carry out this feature," he says.

"You don't need a key to start the ignition. You just have to press a button and the engine starts," he says. "And if you have forgotten where you've parked your car, take out your mobile and use the GPS facility. If your car is also GPS-enabled, you can see the exact location onscreen. Also visible on your mobile screen will be the air-pressure reading of the different tyres. There are chips which can monitor this now," adds Rajeev.

Once inside the car, there is a whole family of graphic display controllers (GDCs) which aid in navigation, explains Rick Wong, general manager (sales, South Asia), Fujitsu Microelectronics, Asia, in a telephonic conversation from Singapore. "The new generation GDCs support all 2D & 3D functions in the car. This enables navigation at high speeds and it helps reproduce graphics which can match those available on desktops. These are designed for high-end vehicles instrument dashboard applications. Soon there will be controls for the radio, video, mobile TV and perhaps every part of the car. The whole dashboard would look like an electronic screen, almost like the aircraft's cockpit. "The GDC ensures better man-machine interface, enabling graphical symbols that are easy for drivers to understand at a glance. With this, the dashboard gets turned to a sophisticated panel which can even synthesize text messages into voice and helps the driver focus on the road," he says. "If something goes wrong somewhere, the driver is immediately alerted," he says. "There are microcontrollers which can detect whether all the seat belts are in place. If not, the driver is alerted," he explains. Talking of car safety and comfort, he says: "The flexray technology used in the suspension system, for instance, can harden or soften the suspension depending on the road. If it is too bumpy, the suspension adjusts in such a way that it cushions the impact," he says.

"Today improved traffic safety has an increasing importance in many markets," says Jean Francois Guglielmo, chief engineer, Cab Engineering for Volvo 3P India. This is a reason for the growth in adoption of safety technology in India, he says. "Safety technology cushions the adverse impact of accidents with the development and use of better methodologies to meet safety regulations," says Jean Michel Terrier, director, business development, Radioss & Safety Technology at Altair. Altair's Radioss, for instance, uses virtual simulation technology to pre-empt mishaps in any field where human beings interact. Says Terrier, "TVS Motors is currently evaluating its 3-wheeler designs for impact and bringing in changes to its designs." "It is the leap-frogging of technology that makes this possible; till three decades ago, we were clueless about seat belts and safety norms," says Pavan Kumar, MD of Altair India.

Chips are extensively used in fuel optimisation. "If the right amount of oxygen and fuel is given at the right temperature, optimum fuel efficiency can be maintained. This can be controlled by technology now," says Rajeev. Cutting-edge technology is extensively used in Formula One racing. "During a race, a Formula One racecar engine generates an enormous amount of electronic data. The Ferrari Data Centre analysis the data using AMD Opteron processors," according to a company statement. "During every race and practice session, data from the onboard computers is sent back from the car to the pit garage. This data needs to be crunched and analysed quickly so that the engineers can extract race-defining information. Pit stop strategies, tyre decisions and fuel loads are all based on computer simulations of the race extrapolated from telemetry data. The Opteron processors helps in this," the company stated.

neenu.abraham@timesgroup.com

Soon your car can measure the speed of the vehicle travelling in front of you and behind you"
RAJEEV MEHTANI, NXP

The GDCs support all 2D & 3D functions in the car. It helps navigation at high speeds
RICK WONG, FUJITSU MICROELECTRONICS

Today improved traffic safety has an increasing importance in many markets
JEAN FRANCOIS GUGLIELMO, CAB ENGINEERING, VOLVO INDIA

global sources 电子系统设计 Electronic Design – China

EDC, July 2008

Transcoder LSI for Full HD that re-compresses Video Image Contents Compressed by MPEG-2 to H.264

New Products | MB86H52

Transcoder LSI for Full HD that Re-compresses the Video Image Contents Compressed by MPEG-2 to H.264

MB86H52

High-quality transcoder LSI enabling a reduction of data volume to half or less while maintaining image quality equivalent to MPEG-2

Overview

This product realizes a transcoding function based on the image-processing technology used in our full HD H.264 HD codec LSI "MB86H51" that is currently in mass production and available for shipment. Utilizing the high-quality technology originally developed by FUJITSU LABORATORIES, it is possible to transcode the input MPEG-2 video data into H.264 video data while maintaining the image quality.

This product can be used to extend the recording time by 2.5-fold or longer with the same hard disk capacity of recording devices such as hard disk recorders. In addition, the H.264 video data that has been transcoded and reduced in data volume can be transmitted in full HD image even in household low-band networks.

Product Features

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

Transcodes full HD MPEG-2 video data into H.264 video data

With the high compression function of H.264, the MPEG-2 video compression data can be re-compressed to half or less.

Original compression/quality improvement technology

We have adopted the original algorithm of FUJITSU LABORATORIES to control compression dynamically so as to continually track sections where image deterioration becomes distinct (e.g., faces, slow-moving objects, and so forth) and to maintain high quality with little compression while compressing

Photo 1 MB86H52 External View

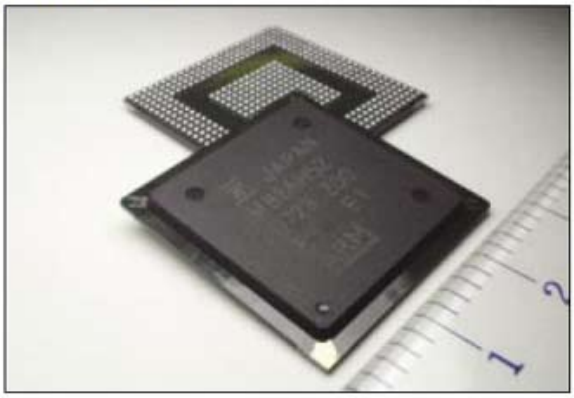
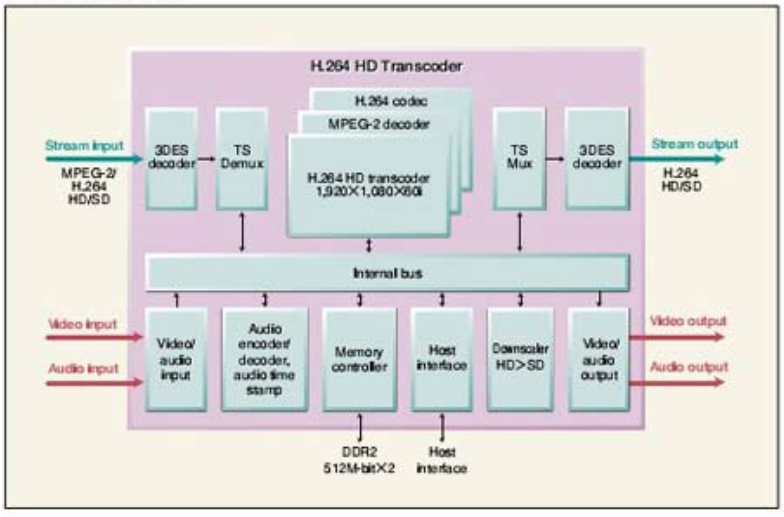


Table 1 Main Specifications

Functions	Transcoding	Video: MPEG-2 HD ⇒ H.264 HD/SD MPEG-2 SD ⇒ H.264 SD
		Audio: Time stamp re-allocation
	H.264 codec	Video: VBS*1 ⇔ H.264 HD/SD Audio: ABS*2 ⇔ MPEG-1 Audio Layer2, etc
Video	Profile	MPEG-2 video main profile/high-level decoder H.264 high profile/Level 4.0 half-duplex codec
	Resolution	1,920×1,080×60i/50i, 1,440×1,080×60i/50i 1,280×720×60p/50p,720×480×60i, 720×576×50i
	Interface	SMPTE274M/SMPTE296M-2001, ITU-R BT.656
Audio	Formats	MPEG-1 Audio Layer2, MPEG-2 AAC (LC profile) Linear PCM, Dolby Digital (AC-3)
	Channels	2ch
	Interface	LR serial
System	Format	MPEG-2 TS CBR/VBR
	Stream interface	8-bit parallel/serial
Host interface		General-purpose 16-bit interface
Input clock		27MHz
Operating frequency		Internal: 216MHz, DDR2 IF: 324MHz
Power consumption		1.7W (typical 1.2V, MPEG-2 HL to H.264 HD TRC)
Package		PBGA 496-pin, 27mm² (1.0mm ball pitch)

*1: Video Baseband
*2: Audio Baseband
*Dolby is a registered trademark of Dolby Laboratories.

Figure 1 Block Diagram



other sections as much as possible. This enables equivalent image quality to be maintained even by transcoding from MPEG-2 to H.264.

Built-in H.264 HD codec functions

Utilizing the built-in H.264 HD codec functions, uncompressed video data can be compressed by the H.264 format. It is also possible to restore H.264 compressed data that has been compressed or transcoded by this product.

Development Environment

The MB86H52-RB evaluation board is available for evaluation and software development (**Fig.2**). The MB86H52 evaluation board is the development kit used to evaluate the LSI "MB86H52" for transcoding from MPEG-2 HL to H.264. Using the built-in PCI bridge, stream input and output of MPEG-2 and H.264 is possible from the PCI bus. It can also encode video and audio from decoded baseband HDMI output and HDMI input into H.264.

We also offer option boards equipped with analog video/audio interfaces for customers who are not HDCP licensees.

Hardware

- HDMI input: Video: 1,080i, 720p, 480i
  Audio: PCM/SPDIF
- HDMI output: Video: 1,080i, 720p, 480i
  Audio: PCM/SPDIF
- PCI bus: 3.3V only, HOST I/F, stream input/output
- Power supply: +5V and +3.3V adopted
- Component video (D terminal) input/output (provided on the option board)
- Analog audio input/output (provided on the option board)

Software

- Linux version
  Driver API, initialization application
  Recording/playing applications, driver control application
- Windows® version
  PCI driver
  Recording/playing applications, driver control application
  Stream reading filter, stream writing filter

Full HD H.264 HD Codec LSI "MB86H51"

MB86H51 is an LSI capable of compressing and restoring full HD (1,920-dot×1,080-line) video images in real time with H.264 format. The built-in memory in the package enables small size and low power consumption. This product will enable the recording, playing, and transmitting of high-resolution full HD video images with high quality in a wide range of fields from commercial to industrial including digital video cameras, hard disk recorders, home network devices, monitoring cameras, and broadcasting devices.

For further details about the product, please visit the following web site: http://jp.fujitsu.com/microelectronics/products/assp/h264/index_p3.html

Future Development

FUJITSU develops LSIs capable of high-quality compression based on H.264. We will strive to further reinforce the performance and functions to realize more applications. ✱

NOTES

- Microsoft Windows is a registered trademark of the U.S. Microsoft Corporation in the U.S. and other nations.
- Linux is a registered trademark or trademark of Mr. Linus Torvalds in Japan and other nations.

Figure 2 Evaluation Board

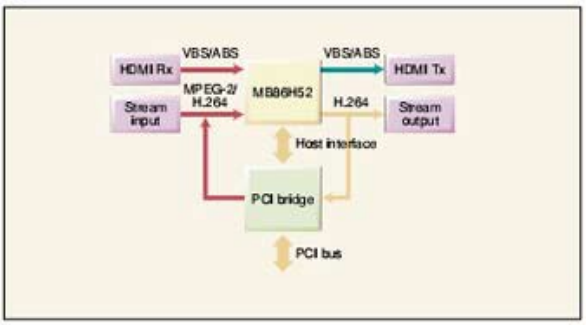


Photo 2 MB86H52 Evaluation Board

Semiconductor Components Application, Nov 2008

32-bit Microcontrollers with built-in USB2.0 for digital home appliance printers, audio, and FA FR Family FR80S/T2 Series.

New Products | MB91F662

32-bit Microcontrollers with Built-in USB2.0 for Digital Home Appliance Printers, Audio, and FA FR Family FR80S/T2 Series **MB91F662**

Products with reinforced communication functions such as USB2.0 with FR80S CPU core with improved CPU performance and many built-in peripheral functions that allow flexible applications. Optimal for system control in various digital devices and USB products such as printers, audio, and FA products.

Overview

In recent years, as a result of diversifying market needs, large-scale applications such as digital home appliances have necessitated the introduction of product groups with many variations, timely product provision, and efficient development style.

To satisfy such market demands, we have added to the product lineup the "FR80S/T2 Series" with low power consumption microcontrollers and reinforced communication functions such as USB. This is the second release of products from this series, which integrates our latest CPU core "FR80S." Since the specifications of the peripheral functions of each product are identical, it is possible to divert the software assets and realize changes in peripheral functions flexibly. These products also enable simple application model development by our customers.

Lineup

To realize low power consumption processing, FUJITSU will be releasing the FR80S/T2 Series product "MB91F662" that has reinforced communication functions such as USB in addition to the high-speed A/D converter and rich peripheral functions of the FR80S/T1 Series. This product reduces the clock frequency of the CPU core compared to the high-speed operation version products of the FR80S/T1 Series, suppresses the power consumption, and adds a USB2.0 function. This provides optimal functions for consumer devices such as photo printers, label printers, and audio devices as well as devices that require high-level additional functions such as controllers for controlling FA devices and inverter controller devices.

In the future, we will further increase the product lineup to include ultra-low power consumption versions to satisfy the diverse demands of our customers.

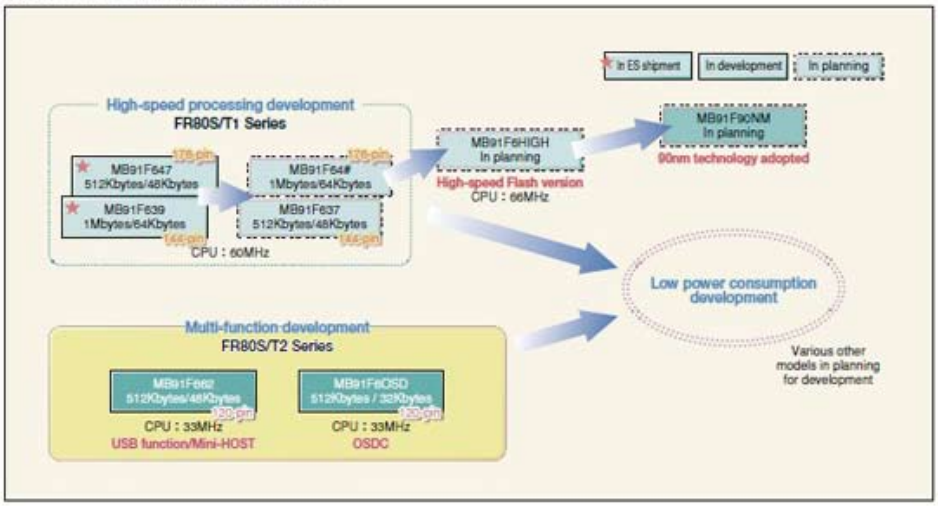
Fig.1 presents the development of the FR80S/T2 Series.

Product Features

Improved processing performance by integrating the new CPU core "FR80S"

This product integrates an FR80S core that offers a CPU processing performance improvement of 30% or more compared to the existing FR core as a result of improved pipeline processing and

Figure 1 Development of the FR80S/T2 Series



so forth. In addition, frequency has been reduced compared to the FR80S/T1 Series to lower power consumption. Since FR80S inherits the instruction set of the existing FR, it allows diversion of our customers' conventional software assets.

Fig.2 presents a comparison of CPU performance between FR80S and FR60.

Flexibility and rich peripheral functions

This product inherits rich peripheral functions, which are the main features of the FR80S/T Series and allow flexible function combinations.

Integrating numerous peripheral functions including 24 channels of A/D converter, 3 channels of D/A, 12 channels of serial, 8 channels of DMAC, 26 ports of 5V I/O, and a base timer unit, it allows flexible pin assignment changes. It is possible to customize our customer development platform in each system, enhance the freedom in board layout, and assist in measures against noise.

Offering both USB2.0 Mini-HOST and FUNCTION communication functions

By integrating the USB2.0 Mini-HOST function (simple control function) in addition to the high-speed communication functions adopting the USB2.0 FUNCTION, it provides USB control and slave functions to commercial products such as photo printers, label printers, audio devices, controllers for FA devices, and inverter control devices and enables a wide range of system device applications.

Furthermore, it will help in the reduction of cost and total product area because it integrates the USB2.0 function and requires no external USB chip.

One built-in unit of the industry's top-level A/D converter

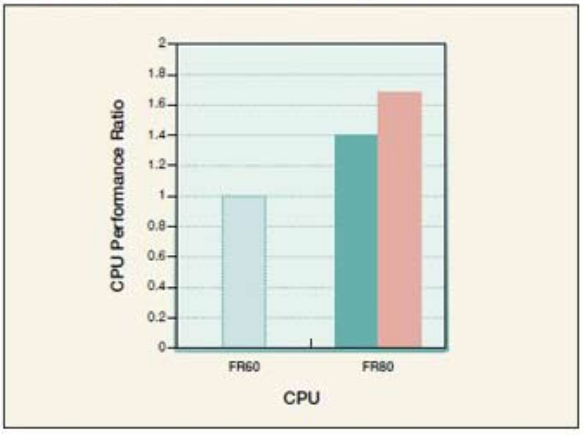
This product has 1 built-in unit of a high-speed converter capable of converting analog signals into digital signals at approximately 1.2μs*1. This allows the high-speed processing of data from various different sensors. It is also capable of A/D conversion with reduced CPU load owing to the 16 built-in FIFO steps for A/D conversion data storage.

**1: Approx. 1.2μs: The minimum A/D conversion time varies depending on the operation clock for peripheral functions and the conditions of the external circuits.*

Total of 12 built-in serial interface channels—the most in the industry

This product has 12 built-in multi-function serial interface channels for controlling various devices for moving image and audio processing. The multi-function serial interface is capable of supporting SIO, UART, and I^{2}C communication modes by software switching. It also integrates 16bytes of FIFO for both

Figure 2 Comparison of CPU Performance between FR80S and FR60



reception and transmission in 4 channels; some channels offer 5V withstand voltage terminals.

Table 1 presents a list of FR80S/T2 Series functions.

Development Environment

Table 2 presents the development environment configuration for the FR80S/T2 Series.

Table 1 List of FR80S/T2 Series Functions

Series: Type	FR80S/T2: Reinforced telecommunication functions
Model name: Pin number	MB91F662: 120-pin USB product
Technology/process	0.18μm/Lowleak
Operating frequency	33MHz
Power supply voltage	Single power supply 3.0 to 3.6V
ROM/RAM size	Flash memory 512Kbytes/48Kbytes
I/O port (Max.)	99 ports
External bus mode	Separate/multiplexed bus supported, 24 addresses and 4 chip selections
DMAC	8 channels
External division	32 channels (some 5V withstand voltage terminals)
A/D (10-bit)	24 channels (1 unit)
D/A (8-bit)	3 channels
16-bit base timer	16 channels (PWC/PPG/PWM/reload timer can be selected)
32-bit FRT/ICU/OCU	FRT 2 channels/ICU 8 channels/OCU 8 channels
8/16-bit U/D counter	4 channels
Reload timer	3 channels (including 1 channel for REALOS)
Clock counter (32KHz)	Included (2 clock systems)
Multi-function serial I/F	12 channels, UART/SIO/I²C can be selected (4 channels with 16-byte FIFO, some 5V withstand voltage terminals)
USB FUNCTION with Mini-HOST	1 channel (FUNCTION, Mini-HOST: FS)
Slave I/F	Included
Package	LQFP-120 (0.5mm-pitch, 16mm×16mm)

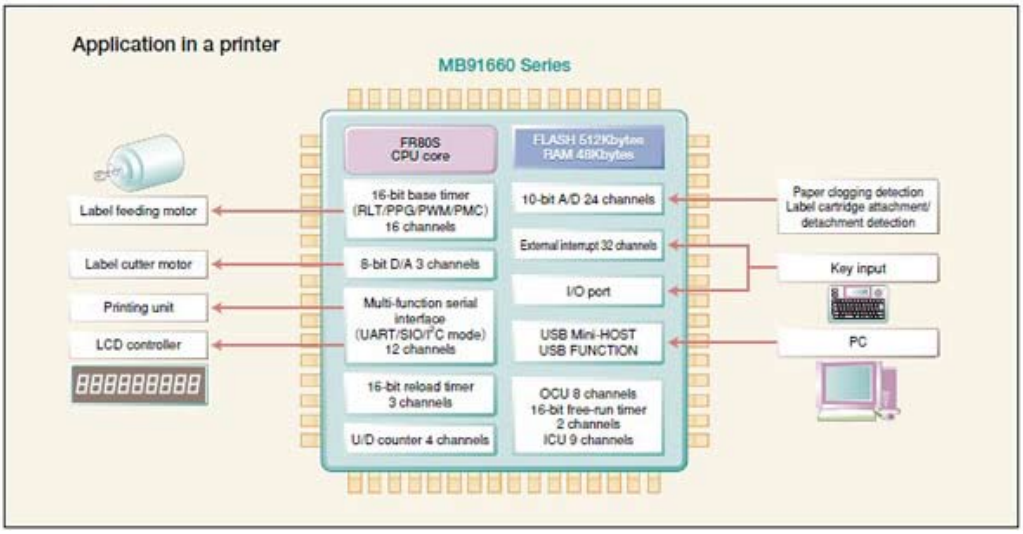
Table 2 Development Environment Configuration for FR80S/T2 Series

Product		MB91F662
Development environment hardware	ICE	MB2198-01
	Adapter board	MB2198-700-E
	Evaluation chip	MB91V650 PB-ESE1
	Header board	MB2198-701-E: LQFP-120 (0.5mm pitch, 16mm×16mm)
	Evaluation board	BBF2004-MB main board manufactured by Sunhayato Corp. BBF2004-FR120SUS-NB daughter board manufactured by Sunhayato Corp.
Development environment software	Unified development environment	SOFTUNE V6 Professional Pack (SP365030118QAC)
Writer for Flash microcontrollers	Serial writer	FUJITSU USB Programmer (writing using MB2146-09A-E) FUJITSU MCU Programmer (writing using RS232C I/F) AF9101 by Flash Support Group, Inc.MegaNETIMPRESS series by Yokogawa Digital Computer Corporation
	Parallel writer	AF9709B or MB9708 (for writing 1 piece) AF9723 (for writing several pieces simultaneously)
	Parallel writer adapter	LQFP-120: In development

Application Examples

Fig.3 presents a product application example. USB is adopted for connection with a PC and a multi-channel serial interface and multi-unit A/D are integrated. By utilizing the features of the various detection functions, it can be utilized as the main control microcontroller not only in consumer devices such as photo printers, label printers, and audio devices but also in controllers for FA devices and inverter control devices. ✱

Figure 3 Application Example



Press Release Clippings

Wireless Design and Development Asia, Nov 6, 2008

Fujitsu launches low power full HD H.264 CODEC LSIs.

Product News > Nov 2008

Free Print Subscription | Print-Friendly Version | Email this story to a friend

Fujitsu Launches Low Power Full HD H.264 CODEC LSIs

(Product News, 6 Nov 2008)

Fujitsu Microelectronics Asia Pte Ltd (FMAL) has announced two LSIs to expand its line-up of H.264 CODEC LSIs, which encode and decode Full HD (1,920 dots x 1,080 lines) video in the H.264 format. The first of the two products to be launched, the MB86H55, features power consumption of only 0.5W during Full HD encoding including the in-package memory, an industry-leading level for low power consumption.

Meanwhile, the MB86H56 LSI offers processing of Full HD video at 60fps (progressive), 60p, to improve picture quality even further.

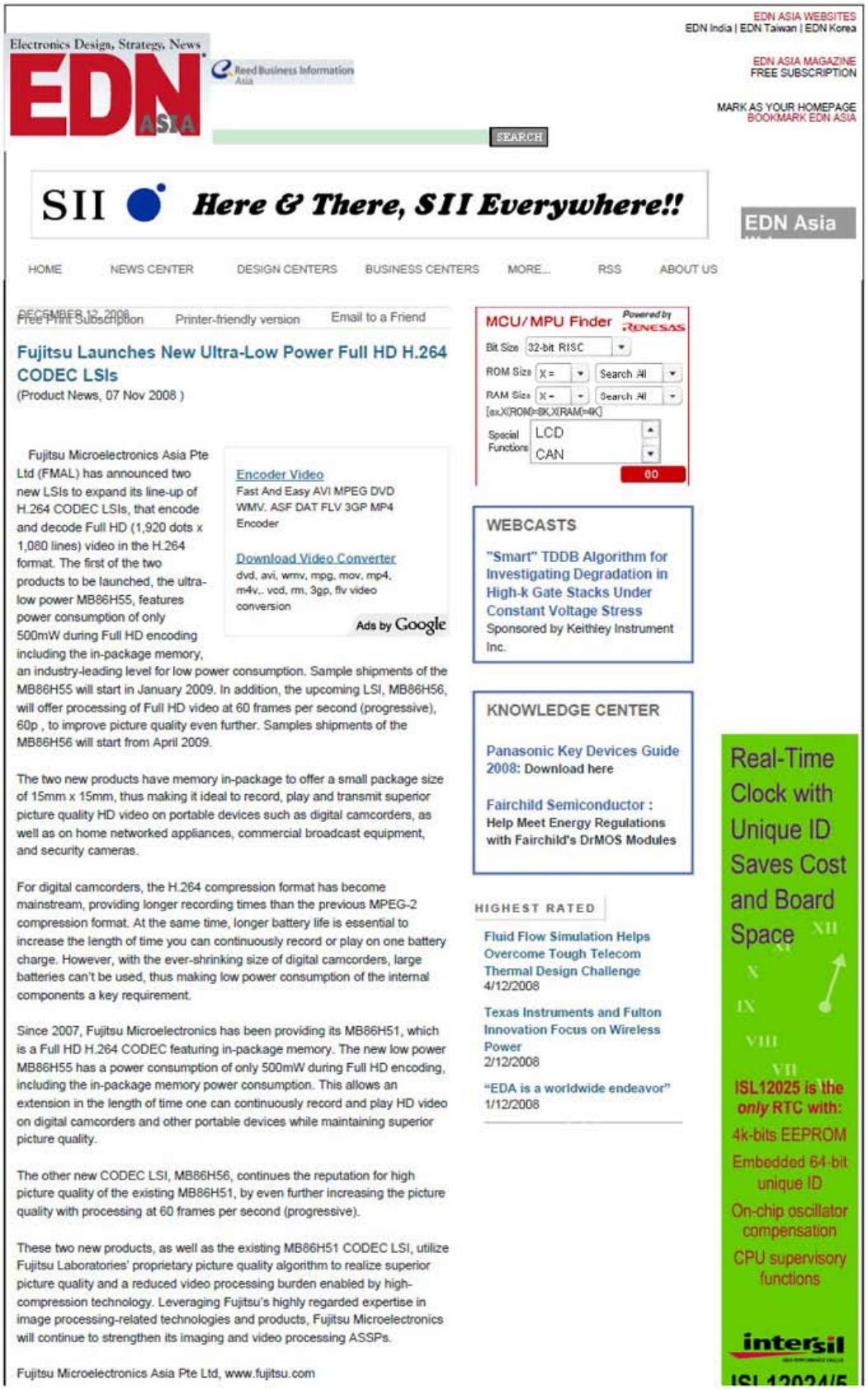
The two 15x15mm products have memory in-package, thus making it ideal to record, play and transmit superior picture quality HD video on portable devices such as digital camcorders, as well as on home networked appliances, commercial broadcast equipment, and security cameras. For digital camcorders, the H.264 compression format has become mainstream, providing longer recording times than the previous MPEG-2 compression format. At the same time, longer battery life is essential to increase the length of time you can continuously record or play on one battery charge. However, with the ever-shrinking size of digital camcorders, large batteries can't be used, thus making low power consumption of the internal components a key requirement. These two products, as well as the existing MB86H51 CODEC LSI, utilize Fujitsu Laboratories' proprietary picture quality algorithm to realize superior picture quality and a reduced video processing burden enabled by high-compression technology.

Click here for more information on Fujitsu Microelectronics Asia

Electronics Design, Strategy, News
EDN ASIA

EDN Asia,Nov 7, 2008

Fujitsu launches new ultra-low power full HD H.264 CODEC LSIs.



Fujitsu Launches New Ultra-Low Power Full HD H.264 CODEC LSIs

(Product News, 07 Nov 2008)

Fujitsu Microelectronics Asia Pte Ltd (FMAL) has announced two new LSIs to expand its line-up of H.264 CODEC LSIs, that encode and decode Full HD (1,920 dots x 1,080 lines) video in the H.264 format. The first of the two products to be launched, the ultra-low power MB86H55, features power consumption of only 500mW during Full HD encoding including the in-package memory, an industry-leading level for low power consumption. Sample shipments of the MB86H55 will start in January 2009. In addition, the upcoming LSI, MB86H56, will offer processing of Full HD video at 60 frames per second (progressive), 60p , to improve picture quality even further. Samples shipments of the MB86H56 will start from April 2009.

The two new products have memory in-package to offer a small package size of 15mm x 15mm, thus making it ideal to record, play and transmit superior picture quality HD video on portable devices such as digital camcorders, as well as on home networked appliances, commercial broadcast equipment, and security cameras.

For digital camcorders, the H.264 compression format has become mainstream, providing longer recording times than the previous MPEG-2 compression format. At the same time, longer battery life is essential to increase the length of time you can continuously record or play on one battery charge. However, with the ever-shrinking size of digital camcorders, large batteries can't be used, thus making low power consumption of the internal components a key requirement.

Since 2007, Fujitsu Microelectronics has been providing its MB86H51, which is a Full HD H.264 CODEC featuring in-package memory. The new low power MB86H55 has a power consumption of only 500mW during Full HD encoding, including the in-package memory power consumption. This allows an extension in the length of time one can continuously record and play HD video on digital camcorders and other portable devices while maintaining superior picture quality.

The other new CODEC LSI, MB86H56, continues the reputation for high picture quality of the existing MB86H51, by even further increasing the picture quality with processing at 60 frames per second (progressive).

These two new products, as well as the existing MB86H51 CODEC LSI, utilize Fujitsu Laboratories' proprietary picture quality algorithm to realize superior picture quality and a reduced video processing burden enabled by high-compression technology. Leveraging Fujitsu's highly regarded expertise in image processing-related technologies and products, Fujitsu Microelectronics will continue to strengthen its imaging and video processing ASSPs.

Fujitsu Microelectronics Asia Pte Ltd, www.fujitsu.com

ECN China Online, Oct 8, 2008

Fujitsu integrated Flexible WiMAX SoC supports Femto base stations

Fujitsu Integrated Flexible WiMAX SoC Supports Femto Base Stations

(Product News, 08 Oct 2008)

Fujitsu Microelectronics Asia Pte Ltd (FMAL) has announced a Fujitsu mobile WiMAX base station SoC, an integrated, device built using the Fujitsu 65nm process technology. The scalable WiMAX SoC can support pico and micro base station architectures, enabling system to implement a single solution across multiple, small base-station platforms. The SoC incorporates all the PHY and MAC features along with the analog and digital radio control, and analog circuits required for base station products to pass Mobile WiMAX Wave 2 certification requirements. An on-chip processing unit delivers the power needed to handle all functions of a femto base station. For larger base station applications, an additional processor can be connected by means of a PCI host interface to handle larger demands for more throughputs and a bigger user base. The SoC also provides a full range of commonly used interfaces. The power requirements are approximately 2W, typically enabling a full femto base station to operate on less than 10W.

The Fujitsu femto solution supports up to 10 users with seven simultaneous flows, each with enhanced support for self-organizing networks and on-chip IPSec support for non-secure, back-haul traffic applications. The new SoC can be designed into femto base stations for indoor applications; into pico stations for indoor or outdoor applications by service providers or enterprise networks; and into micro base stations for outdoor use by service providers. Fujitsu has also developed a femto base station reference design kit that includes all required software and hardware for ODMs or contract manufacturers to build a cost-effective system solution. The SoC continues Fujitsu's leadership in WiMAX technology, which began in April 2005 with the release of the MB87M3400, an integrated WiMAX system-on-chip that complies with the 802.16-2004 standard.

Company : Fujitsu Microelectronics Asia Pte Ltd
Product Code : 08KB011
http://www.fujitsu.com/us/news/pr/fma_20050421-1.html

Hardware Zone, Oct 7, 2008

Fujitsu announces new Fujitsu mobile WiMAX base station SoC

Fujitsu Announces New Fujitsu Mobile WiMAX Base Station SoC

Wireless/Networking | Just Announced
Tue 07 Oct 2008
digg this slashdot this

New Fujitsu Integrated Flexible WiMAX SoC Supports Femto Base Stations, and Can Scale to Pico and Micro Base Station Architectures

Fujitsu Microelectronics Asia Pte Ltd (FMAL) today announced a new Fujitsu mobile WiMAX base station SoC, a highly integrated, flexible device built using the leading-edge Fujitsu 65nm process technology.

Designed to meet the cost requirements of a femto base station architecture, the scalable WiMAX SoC can support pico and micro base station architectures, enabling system manufacturers to implement a single solution across multiple, small base-station platforms.

The new SoC incorporates all the PHY and MAC features along with the analog and digital radio control, and analog circuits required for base station products to pass Mobile WiMAX Wave 2 certification requirements. An on-chip processing unit delivers the power needed to handle all functions of a femto base station. For larger base station applications, an additional processor can be connected by means of a PCI host interface to handle larger demands for more throughputs and a bigger user base.

The SoC also provides a full range of commonly used interfaces. The power requirements are approximately 2W, typically enabling a full femto base station to operate on less than 10W.

"There is growing demand for small base-station platforms that have significantly lower capital and operating costs compared with macro base stations," said George Wu, director of the Fujitsu Wireless Solutions Business Group. "The use of many smaller base stations can provide coverage and increase capacity, while reducing user churn because of disappointing performance. Our new mobile WiMAX base station SoC is designed with the flexibility to meet those requirements, with all the features and performance to assure system certification."

"The femtocell value proposition is fairly straightforward: all the benefits of WiFi-based FMC without the need to force users into choosing from a limited supply of dual-mode devices," said Peter Jarich, research director with Current Analysis. "From a commercial perspective, however, the promise of low-cost home base stations that end-users and operators can afford has transformed the WiMAX femtocell from an abstract concept into a business model that operators are actively investigating and planning for."

The Fujitsu femto solution supports up to 10 users with seven simultaneous flows, each with enhanced support for self-organizing networks and on-chip IPSec support for non-secure, back-haul traffic applications. The new SoC can be designed into femto base stations for indoor applications; into pico stations for indoor or outdoor applications by service providers or enterprise networks; and into micro base stations for outdoor use by service providers.

To help meet the cost target anticipated for consumer-grade femto devices, Fujitsu has developed a femto base station reference design kit that includes all required software and hardware for ODMs or contract manufacturers to build a cost-effective system solution.

The new SoC continues Fujitsu' s leadership in WiMAX technology, which began in April 2005 with the release of the MB87M3400, a highly integrated WiMAX system-on-chip that complies with the 802.16-2004 standard.