President’s Message

At Fujitsu Semiconductor America, we continue to focus on U.S. innovation and industry to find new opportunities for growth. Overall, we are well-positioned as industry leaders in semiconductor solutions for the computing, automotive and wireless sectors, and can offer our customers world-class ASIC, foundry services, and advanced packaging solutions.

A key part of our strategy is developing flexible products for high-end markets as well as for cost-conscious applications. These advanced semiconductor solutions can often be deployed globally in multiple industries. For example, our graphics display controllers (GDCs) are used not only in the automotive industry but in other applications ranging from vending machines and kiosks to medical equipment and computer games.

Our mission is to nurture U.S.-centric business opportunities to become global forces. We are concentrating our resources not only in the United States, but also in the emerging markets of Mexico, Brazil and other parts of South America.

And we are enhancing our service capabilities to support customers throughout the product selection and design process. As part of the Fujitsu Semiconductor group, we are building a global structure so that customers can seamlessly receive application support worldwide.

Key Technologies and Products

Here are some business highlights of 2010-2011:

- **The FM3 Family of 32-bit Microcontrollers** – Fujitsu complimented its proprietary lines of 8-, 16-, and 32-bit devices with the introduction of the general purpose FM3 family of MCUs featuring the industry's leading-edge ARM Cortex-M3™ CPU and Fujitsu's highly reliable and high-speed secure embedded flash technology. The devices include a host of robust peripheral features and are optimized to address the 16-bit and 32-bit microcontroller market for a variety of industrial and consumer applications.

- **Graphics Display Controllers for High-end 2D/3D Graphics** – Fujitsu continues to build on its leadership position in the embedded graphics market. We introduced the MB86R1x “Emerald” GDC family, a powerful system-on-a-chip (SoC) device to enable high-end automotive 2D/3D graphics applications. The full line of GDCs from Fujitsu brings robust 2D and 3D graphics not only to automotive applications, but also to appliances, retail kiosks and vending machines.

- **65GSa/s Analog-to-Digital Converter** – Fujitsu introduced the second-generation 8-bit CHArge-mode Interleaved Sampler (CHAIS) ADC for optical transport designs based on coherent detection. The new generation, which supports data rates from 55 to 65GSa/s, is based on the same ground-breaking ADC architecture as Fujitsu’s 56GSa/s CHAIS ADC. The technology is ideal for telecommunication applications such as 100Gbps Ethernet and OTU-4 transport systems using coherent receivers.

- **Industry’s First 3G and 4G LTE and SAW-less Transceivers** – Our LTE multimode RF transceiver supports most global band configurations and standard interfaces, and its simple RF API programming reduces radio integration time. The Fujitsu RF transceivers feature a high-level programming model for controlling the radio using an open standard digital interface, which is compatible with a wide range of industry basebands.

- **3D Wrap-around Video-imaging Technology** – Available as a toolset for Fujitsu GDCs, the breakthrough 360-degree Wrap-around Video-imaging Technology provides a complete 3D view of a vehicle’s surroundings, for unmatched driver visibility, safety and convenience.

Our Commitment

These successes are the result of our commitment to meeting the needs of our customers. I am confident that we will be successful by continuing to help our customers differentiate their products and be more competitive.
Corporate Overview

Fujitsu Semiconductor America, Inc. (FSA) is a leading designer and developer of innovative semiconductor solutions for new generations of consumer, communications, automotive and industrial products. The company provides a comprehensive portfolio of high-quality, reliable semiconductor products and services throughout North and South America.

Founded in 1979 and headquartered in Sunnyvale, California, FSA (formerly Fujitsu Microelectronics America) is a wholly owned subsidiary of Fujitsu Semiconductor Limited (FSL), Japan. FSL, which was established as a subsidiary of Fujitsu Limited in 2008, offers semiconductor solutions through its sales and development network in Japan and throughout Asia, Europe, and the Americas.

Fujitsu is a leading provider of ICT-based business solutions for the global marketplace. With approximately 170,000 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 4.5 trillion yen (US$55 billion) for the fiscal year ended March 31, 2011.


Since July 2008, FSA has been ISO 9001:2008 certified for the sales, marketing, design and development of ICs in its California and Michigan locations. FSL has held the ISO/TS 16949:2002 certificate for the design, development and manufacture of ICs for automotive use since December 2003. FSA is committed to further improving processes to assure ISO quality and business standards.
Products and Services

ASIC and Foundry Services

Technologies and Services – Fujitsu’s world-class processes, design technology and packaging capability can transform customers’ product concepts and designs into leading-edge semiconductor solutions quickly and cost-effectively. The Fujitsu technology platforms integrate advanced processes, proprietary design methodology and application-optimized IP to deliver reliable, high-speed and low-power products. Fujitsu has expanded its cutting-edge process technology portfolio for the 40nm and 28nm nodes through collaborations with Taiwan Semiconductor Manufacturing Company (TSMC).

Customers benefit from Fujitsu’s broad range of services, from full turnkey ASIC to foundry engagement. The company’s enhanced design services include high-speed interfaces, analog IP and processor cores, RTL design, synthesis, design partitioning, floor planning, timing analysis, test insertion, design-for-manufacturability, and other services critical to first-pass success.

65GSa/s ADCs – Fujitsu’s 65GSa/s Analog-to-Digital Converters (ADCs) provide the enabling technology for 100Gbps Ethernet and OTU-4 transport systems. Fujitsu’s revolutionary CHAIS technology and new ADC techniques make it possible to design single-chip 100Gbps coherent receivers in 65nm CMOS technology. An industry first, this innovative solution meets the performance and power requirements of long-haul optical systems, providing a path beyond 100Gbps networks.

Customer Choices – Fujitsu provides complete SoC design and manufacturing services to ASIC and foundry customers. With vast technical resources that include highly experienced global design teams, EDA and IP partners, FSA has consistently delivered first-pass success in IC development and fabrication. FSA and its third-party design partners can support customers through a wide range of engagement models—from full-service ASIC to cost-effective foundry—to achieve quick time-to-revenue production.

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Automotive MCUs and Network Solutions

Fujitsu’s innovative controllers meet the increasing demand for ICs in automotive applications in the navigation, entertainment, safety, comfort, convenience, and user-interface areas.

MCUs and FlexRay™ Controllers – Fujitsu continues to expand its 8-, 16- and 32-bit MCU families for automotive applications. The 16FX architecture, which incorporates the reliable LIN and CAN interfaces, features optimized performance and low power consumption. Fujitsu is pioneering the use of FlexRay in vehicle designs. The company’s new FlexRay ASSP, integrated 32-bit FlexRay MCU, and development kit allow designers to begin using the FlexRay standard.
1394 Automotive Controllers – Fujitsu introduced the industry’s first fully integrated 1394 Automotive single-chip controller for in-vehicle multimedia systems. The industry-leading controllers connect HD-quality video and audio to vehicle displays from devices such as the head unit, navigation system, camera, amplifier, DVD or Blu-ray players, delivering the ultimate in-vehicle multimedia solution by the S800, 800Mbps high-speed communication standard.

Automotive-Grade Graphics Display Solutions

Fujitsu is the global leader in graphics display controllers (GDCs) with a complete family of products designed specifically for embedded applications. Fujitsu combines advanced, proprietary display controller functionality with higher performance graphics-rendering capability to produce single-chip solutions for displaying content in the growing variety of embedded applications that are using TFT LCD panels to provide a dynamic user interface. The Fujitsu graphics controllers for automotive applications include instrument clusters, in-dash navigation, heads-up displays and rear-seat entertainment.

The Fujitsu GDC roadmap is well-established through the middle of the next decade, making Fujitsu the secure supplier for embedded graphics applications.

Embedded MCUs and Controllers

MCUs for Consumer and Industrial Markets – Fujitsu develops and markets general-purpose and application-specific 8-, 16- and 32-bit MCUs for consumer, industrial, medical and smart-energy applications. Fujitsu developed a special ASSP for Internet appliances and other emerging applications that require high-quality encryption capabilities.

Graphics Display Controllers for Medical and Industrial Equipment – The rapid price decline of small-form-factor color LCDs is fueling the deployment of panels in applications previously limited to simpler user interfaces. Fujitsu’s GDCs are also ideally suited for new, low-cost medical, avionics and industrial systems, as well as for virtually any application needing a highly efficient display management system.

Video- and Image-Processing Solutions

Fujitsu’s image-processing ICs for cameras deliver high-definition imagery and fast processing speeds with low power consumption. The product line meets the requirements of widely used digital SLRs, compact DSCs and mobile phone cameras. The single-chip technology offers all the functions these cameras require including image 3A’s (AWB, AE and AF), image and video compression, noise reduction, and memory-card processing.

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USB Solutions

USB 3.0 – One of the first USB 3.0 external storage solutions certified by the USB-IF, the Fujitsu USB 3.0 SATA bridge IC enables USB 3.0 adoption in storage markets with optimized chips and cost-effective systems for rapid time to market. With its turnkey reference design, faster transfer rates and small package, the Fujitsu USB 3.0 solution meets the needs of external HDD, SSD, Blu-ray, and DVD/CD implementations.

Analog Solutions

Fujitsu’s world-class analog products are based on proprietary, mixed signal design capability coupled with low-power process technology.

PMICs – The Fujitsu lineup of PMICs includes DC-DC converters, battery-charger ICs and voltage-level monitors. The PMICs are adopted particularly in consumer electronics such as digital cameras, printers and camcorders. The PMICs have also been designed into newer platforms like medical equipment, netbooks, cellular phones, and Ultra-Mobile PCs (UMPCs).

DACs – Fujitsu’s high-resolution 14-bit DACs support conversion rates of up to 1.3GSa/s. The converters feature the shortest propagation delay for 1GSa/s DACs, which is critical for low-latency control applications. Fujitsu DACs offer outstanding performance for high direct IF above 200MHz.

PLLs – Ultra-low-power PLL devices use either Integer-N or sigma delta fractional-N methods. These devices come with competitive packages including the space-saving QFN package, which takes up a fraction of the space of conventional TTSOP or SSOP packages.

Wireless Solutions

RF Transceivers – The Fujitsu transceiver eliminates 3G and LTE TX and RX interstage SAW filters and low-noise amplifiers (LNAs). The single-chip transceiver is backwardly compatible with a high-level programming model (API) for radio control using the DigRF/MIPI D3G and D4G open standard digital interfaces. This makes the transceiver compatible with a wide range of industry basebands.

Memory Solutions

FRAM – Fujitsu is a pioneer in Ferroelectric Memory (FRAM), which outperforms other non-volatile memories like Flash and EEPROM in speed, power and endurance. Fujitsu’s standalone FRAM, RFID and custom products fully utilize the technology’s benefits, security and anti-tampering properties even at the high radiation tolerance required by the medical and pharmaceutical industries.

Fujitsu is a pioneer in FRAM, which outperforms other non-volatile memories like Flash and EEPROM in speed, power and endurance.
Product Offerings

ASIC and Foundry Services
- Full turnkey ASIC solutions
- Foundry services
- Advanced packaging

Automotive MCUs and Network Solutions
- 8-, 16- and 32-bit MCUs
  - FlexRay, CAN, LIN support
- 1394 Automotive controller

Automotive-Grade Graphics Display Solutions
- 2D and 3D GDCs and SoCs
  - Support for multiple displays
  - Up to eight layers
  - Video capture
  - APIX® interface support
- 3D Wrap-around Video-imaging Technology

Embedded MCUs and Controllers
- 8-, 16- and 32-bit MCUs, including the FM3 Family of ARM-based 32-bit MCUs
- Graphics display controllers

Video and Image-Processing Solutions
- HD transcoders
- High-speed, high-resolution, low-power digital camera ASSPs

USB Solutions
- USB 3.0 SATA ICs
- USB 1.1, 2.0-compatible MCUs

Analog Solutions
- Analog-to-digital converters
- Phase locked loop devices
- Power management ICs
- Spread Spectrum Clock Generators

Wireless Solutions
- RF transceivers

Memory Solutions
- FRAM and RFID ICs
- Fast Cycle RAM (FCRAM)
Fujitsu Semiconductor Group Environmental Policy

With our customers, we contribute to the protection of a rich global environment, using state-of-the-art technology to provide semiconductor devices with superior environmental characteristics.

Operational Principles

By applying the following principles, we work to prevent pollution of the global environment and reduce the environmental burden of our products throughout their lifecycles, including development, procurement, manufacture, sales, usage, and disposal:

1. By aggressively promoting the development of Super Green Products and the proper management of product chemical content, we improve the environmental characteristics of our products and actively reduce the burden on the global environment and our customers.

2. We aggressively promote measures to counteract global warming and reduce emissions of greenhouse gases (e.g., CO₂, PFCs¹).

3. We aggressively promote chemical management and reduced emissions of volatile organic compounds (VOCs²).

4. We aggressively promote waste reduction and appropriate recycling.

5. We conform to environmental regulations around the world and keep our promises to customers.

6. We work to improve the individual environmental consciousness of our employees, to help them become good environmental citizens, promote the preservation of biological diversity, and make environmental and social contributions in their local communities.

7. We expand the effectiveness and transparency of our environmental management system, driving continuous improvement and development.

1. PFCs (perfluorocarbons) are CFC (chlorofluorocarbon) substitutes; they are used in semiconductor manufacturing etching and cleaning processes.

2. VOCs (Volatile Organic Compounds) are used in semiconductor manufacturing cleaning processes.