



Fujitsu Semiconductor America, Inc.

**Corporate Profile
2010–2011**

shaping tomorrow with you

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 4.6 trillion yen (US\$50 billion) for the fiscal year ended March 31, 2010.

ISO 9001: 2008 and ISO/TS 16949:2002 Certifications

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.



56GSa/s ADCs – Fujitsu 56GSa/s Analog-to-Digital Converters (ADCs) provide the enabling technology for 100Gbps Ethernet and OTU-4 transport systems. Fujitsu's revolutionary CHArge-mode Interleaved Sampler technology (CHAIS) 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.

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 Solutions

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.

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.

WiMAX SoCs – As a co-founder and board member of the WiMAX Forum®, Fujitsu leads the worldwide promotion and implementation of new-generation broadband wireless access technology. The Fujitsu Mobile WiMAX SoC supports advanced time- and space-diversity features like MIMO and beamforming. With its low-power consumption, the latest generation mobile WiMAX SoC solution is appropriate for embedded handheld devices and M2M applications.

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 FRAM MCU, RFID and custom products fully utilize the technology's benefits, security and anti-tampering properties even at the high radiation tolerance required by medical and pharmaceutical industries.





Shinichi "James" Machida
President

Our Role in the U.S.

As I write this in summer 2010, the industry is recovering from the severe downturn of the past few years. The growth in global GDP has almost returned to the pre-financial-crisis level with emerging economies such as China and India growing more than three times faster than mature economies.

In fact, Gartner predicts that the worldwide semiconductor revenue will touch \$290 billion this year, about a 27% increase over 2009 compared to a 10.5% decline from 2008 to 2009. Gartner further predicts that the semiconductor revenue could surpass the \$300 billion mark in 2011, and that the ASSP market will grow about 20% this year. Recovery is widespread in many applications worldwide, but the biggest application growth is in the PC and smart-phone markets.

Last year I wrote that we were aggressively introducing new technologies and related ASSPs for markets such as the emerging PC and mobile-related applications. Our efforts are paying off. We are engaging with customers worldwide and growing this area of our business faster than the industry.

I believe in U.S. innovation and technology. Our mission is to nurture U.S.-centric business opportunities to become global forces. As part of the Fujitsu Semiconductor group, we are building a global structure so that customers can seamlessly receive support worldwide.

New Businesses and Alliances

Here are our business highlights of 2009-2010:

- Strengthening the channel – We started a global channel business with DigiKey for e-distribution. We also added Symmetry Electronics as a new authorized distributor in the U.S., Mexico, and South America for a full range of products such as MCUs, graphics display controllers, H.264 CODEC and analog ICs, including power management ICs.
- Industry's first 3G LTE and SAW-less transceiver – 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.
- 56GSa/s Analog-to-Digital Converter – This technology is for telecommunication applications such as 100Gbps Ethernet and OTU-4 transport systems using coherent receivers. The ADC uses the Fujitsu CHArge-mode Interleaved Sampler technology (CHAIS), which allows the implementation of extremely fast, high-resolution ADCs in CMOS process technology.
- Collaborations on 40nm and 28nm process technologies – Fujitsu Semiconductor and TSMC are collaborating on 40nm and 28nm process technologies. This collaboration combines Fujitsu's expertise in advanced high-speed process and low-power design technologies with TSMC's strength in power-efficient, high-performance logic/SoC process and the leading-edge technology that is part of TSMC's Open Innovation Platform™.
- Image- and video-processing ICs – Our strengths in imaging and video processing can be seen in the success our customers enjoy providing solutions for digital video cameras, set-top boxes, digital video recorders, and digital TVs.

Fujitsu will continue to be an industry leader in H.264 video-processing technology, and will provide customers with video-processing ICs for high-performance digital equipment.

Our Milbeaut series of image-processing ICs for cameras delivers high-definition imagery, fast processing speeds, and low power consumption.

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 enhance their competitive advantage.

Shinichi Machida
Sunnyvale, California
August 2010

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
 - Support for multiple displays
 - Up to eight layers
 - Video capture
 - APIX® interface support

Embedded MCUs and Controllers Solutions

- 8-, 16- and 32-bit MCUs
- Graphics display controllers

Video and Image-Processing Solutions

- HD transcoders
- Low- and ultra-low-power H.264 CODECS
- HD multi-standard decoders
- 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
- WiMAX SoCs

Memory Solutions

- FRAM and RFID ICs
- Fast Cycle RAM

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