Fujitsu Microelectronics introduces a next generation general purpose 32-bit RISC Microcontroller

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Supported by an easy-to-use starter-kit

March 8th 2004. Fujitsu Microelectronics announces a new 32-bit RISC microcontroller implemented in 0.25μm CMOS technology and operating at 3.3V. With its flexible configuration, supporting 16-bit/32-bit SDRAMs and numerous other memory interfaces, this new controller is ideal for applications requiring simultaneous implementation of fast data processing and control of peripheral resources.

The MB91302A is the successor to the MB91101. It operates at up to 68MHz and features 4KB data RAM and 4KB of Instruction Cache for fast on-chip processing. Its FR60 core with a 5-stage pipeline, 16-bit fixed-length instruction set, built-in hardware multiplier and barrel shifter was designed specifically for embedded applications.

The versatile external interface allows direct access to SDRAM/FCRAM, SRAM, asynchronous ROM and various page and burst mode memories, and together with its high speed 5-channel Direct Memory Access Controller (DMAC), guarantees fast data transfer and simplifies circuit board design. DMA transfer in fly-by mode allows it to move data directly between an external device and a memory without passing through the CPU, thereby doubling the data transfer rate.

The embedded BootROM includes code for an easy startup of the controller from external memories.

Serial communication is supported by two I2C interfaces and three USARTs (each with their own baud rate generator). Four independent ICU (Input Capture Unit) channels to detect edges of external signals, three 16-bit reload timers, four PPG timers and 4 channels of a 10-bit A/D converter complete this powerful data processing engine.

The MB91302A is available in a 144-pin QFP package. This pin count allows the usage of up to 80 general purpose I/O ports if the resource function connected to the related port is not required.

A flexible clock concept, which offers several internal clock frequencies as well as individual settings for the core, the peripherals and the external bus interface, combined with the standard power management function assists the user in finding the optimum trade-off between performance and power consumption for his application.

For users needing to start software development before their target board is available, Fujitsu offers the low cost MB91302A starter-kit which:

- allows usage of an unregulated external 9V-12V DC power supply
- includes a 5V internal power supply with power-LED
- makes all MB91302A resources available for evaluation
- has all MB91302A pins routed to connectors
- includes the 16 MHz main-crystal

- is equipped with two UART transceivers
- 8 user LEDs
(optional: alphanumeric standard LCD connectable instead of LEDs)
- has a reset-button, a reset-LED
- offers 5 user-buttons configurable for INT0, INT3, TIN1, NMI and ADTG/INT4
-includes the following memories:
- Flash 4MBx16 in socket
- SDRAM 512Kx32x4

The external bus interface of the MB91302A can also be used to directly connect Fujitsu Graphic Display Controllers.

For connection of the starterkit to Fujitsu Graphic Controller Boards, it can optionally be equipped with

- Graphic-Board-Connector (VG96ABC, VG48ABC)
- Power Supply for Graphic Boards (5V, 3V3, 2V5)

The MB91302A and starter-kit are available now.

About Fujitsu Microelectronics Europe
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This solutions approach is supported by a broad range of advanced semiconductor devices, IP and building blocks as well as leading-edge LCDs and Plasma Display Panels. For more information visit Fujitsu Microelectronics Europe's website at http://www.fme.fujitsu.com

ISSUED ON BEHALF OF:
Fujitsu Microelectronics Europe
Am Siebenstein 6-10
D-63303 Dreieich-Buchschlag
Germany
Tel: +49-6103-690-0
Fax: +49-6103-690122
E-mail: jim.bryant@fme.fujitsu.com

Contact: Jim Bryant

MORE INFORMATION FROM:
JDK Marketing Communications
The Old Dairy
Squerryes

Goodley Stock Road
Westerham, Kent TN16 1SL
Tel: 0870 787 9510
Fax: 0870 787 9509

E-mail: Joanna@jdk.co.uk

Contact: Joanna Muggeridge