April 21, 2022

Serial 64-Mbit SuperFlash® Memory Extends Options for Designing Space Systems Using Radiation-Tolerant COTS-Based Devices

The SST26LF064RT memory device is Microchip's second SuperFlash® technology-based offering to be space-qualified

CHANDLER, Ariz., April 21, 2022 (GLOBE NEWSWIRE) -- Designers of spaceflight-qualified systems have a great need to reduce development time, cost and risk in their systems. Microchip Technology Inc. (**Nasdaq: MCHP**) proposed the concept of starting with Commercial-Off-The-Shelf (COTS) devices and then replacing them with space-qualified, Radiation-Tolerant (RT) equivalent parts. Microchip today announces it has extended its family of COTS-based, RT SuperFlash® devices for these applications and is bringing the Microchip memory technology's unrivaled 50 kilorad (krad) Total Ionizing Dose (TID) tolerance to a 64-Mbit serial quad I/O NOR flash memory device for use in harsh aerospace and defense system environments.

"The SST26LF064RT SuperFlash device brings the best TID performance on the market to a 64-Mbit serial quad I/O memory solution that works alongside any SRAM-based FPGA in diverse space applications," said Bob Vampola, associate vice president of Aerospace and Defense at Microchip. "It is ideal for systems used in Low Earth Orbit (LEO) space constellations and other harsh radiation environments where companion flash memory is required for storing the critical software code or bitstream that drives the complete system."

Microchip SuperFlash NOR flash memory products use a proprietary split-gate cell architecture to improve performance, data retention and reliability as compared to conventional stacked-gate flash. They eliminate the complexity of power management switching to achieve their industry-high TID even while the flash is still biased and operating in systems such as satellite on-board computers and different types of controllers for motors, sensors, solar panels and power distribution. Proven in industrial applications, Microchip's RT SuperFlash technology has been offered as a parallel-interface solution with its 64-Mbit SST38LF6401RT device that is now space-qualified and available in-flight models. With the SST26LF064RT product, designers now also have a serial quad I/O 64Mbit memory option.

An application note explains how to use the serial 64-Mbit SuperFlash device with Microchip's SST26LF064RT RT flash reference evaluation board and space-qualified SRAM-based FPGAs. Like Microchip's parallel SuperFlash memory, the serial SuperFlash memory option can also be used as configuration memory with an FPGA and other Microchip solutions such as the Arm® Cortex®-M7- based SAMRH707 radiation-hardened (rad-hard) microcontroller (MCU). It can also be used with the RT PolarFire® FPGA to support in-flight system reconfiguration.

Availability

Ceramic samples for Microchip's RT SST26LF064RT SuperFlash memory product are available for sale. Additionally, the SST38LF6401RT (parallel) ceramic and plastic qualified flight models are available for sale. The devices are complemented by the RT FPGA (RTG4™ and RT PolarFire), rad-hard microprocessor (MPU) SAMRH71 and rad-hard MCU SAMRH707. For more information including pricing, contact a Microchip representative or authorized worldwide distributor.

Microchip's COTS-to-Radiation-Tolerant Process

Microchip selects relevant devices from its proven automotive- or industrial-qualified product family and adds silicon process improvements that make them more immune to single-event latch-up in the heavy ion environments of space. The radiation performance of these slightly modified devices is fully characterized and supported by a dedicated radiation report for each functional block. Designers begin system implementation with easy-to-source COTS devices before replacing them at the PCB stage with these pinout-compatible space-qualified equivalents.

Resources

High-res images available through Flickr (feel free to publish):

- Application Image: www.flickr.com/photos/microchiptechnology/51984916664/sizes/l/

About Microchip Technology

Microchip Technology Inc. is a leading provider of smart, connected and secure embedded control solutions**.** Its easy-to-use development tools and comprehensive product portfolio enable customers to create optimal designs which reduce risk while lowering total system cost and time to market. The company's solutions serve more than 120,000 customers across the industrial, automotive, consumer, aerospace and defense, communications and computing markets. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality. For more information, visit the Microchip website at **www.microchip.com**.

Editorial Contact:
Brian Thorsen
480-792-7182
brian.thorsen@microchip.com

Reader Inquiries:
1-888-624-7435

Source: Microchip Technology Inc.