**News Release**

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**Renesas Synergy™ Platform Adds Low Power S5D3 MCU Group with Advanced Security for Industrial IoT Endpoint Devices**

*High Integration MCUs Simplify Application Development with Secure Cryptographic Engine and Synergy Software Package*

Düsseldorf, February 20, 2019 – Renesas Electronics Corporation (TSE:6723), a premier supplier of advanced semiconductor solutions, today extended its high integration Renesas Synergy™ S5 microcontroller (MCU) series with the introduction of the entry-level [S5D3 MCU Group](https://www.renesas.com/products/synergy/hardware/microcontrollers/s5-series/s5d3-group.html). The four new S5D3 MCUs join the mid-range S5D5 and high-end S5D9 MCU Groups with similar S5 Series features—integrated 120 MHz Arm® Cortex®-M4 core and advanced security—as well as general-purpose features that simplify designing cost sensitive, low power Internet of Things (IoT) endpoint devices. The entry-level S5D3 MCUs target a broad range of industrial, building automation, and office equipment, as well as smart metering, and home appliances employing a capacitive touch human-machine interface (HMI).

The Renesas Synergy Software Package (SSP) supports the S5D3 MCUs with HAL drivers, application frameworks and real-time operating system. Embedded system designers can use either of the Renesas Synergy development environments--e² studio or IAR Embedded Workbench®--to build and customize their designs. Based on a 40nm process, the S5D3 MCUs integrate a secure cryptographic engine (SCE7) with key protection that safeguards the MCU boot code and IoT endpoint device communication with a root of trust. This capability eliminates the need for external security functions and reduces BOM cost. The SCE7 features encryption hardware accelerators like RSA, DSA, AES, ECC, SHA and true random number generator (TRNG) to provide a secure system connection to the cloud. Each S5D3 MCU offers superior power consumption of 100 μA/MHz in active mode, ultra-low 1.3 μA in standby mode, and 900 nA for a VBATT supply that keeps the integrated real-time clock running, making these devices ideal for applications that require low power and high performance.

The S5D3 MCUs offer 512 KB flash memory and a large 256 KB SRAM memory. This unique 2:1 ratio of embedded flash to SRAM supports intensive communication stacks utilization for robust IoT connectivity, and the 8 KB data flash enables more read/write cycles than the competition. Each S5D3 MCU integrates several analog components including two 12-bit analog-to-digital converters (ADCs), a 2-channel 12-bit digital-to-analog converter (DAC), high-speed 6-channel comparator, temperature sensor, and a 6-channel programmable gain amplifier (PGA). The S5D3 MCUs also offer a scalable set of 13 independent 32-bit general-purpose timers, and communications interfaces such as USB, CAN, I2C, SPI, SDHI, and SSI.

“The S5D3 MCUs beat the competition with superior security, memory performance, MCU scalability, and Synergy Platform support,” said Daryl Khoo, Vice President, Product Marketing, IoT Platform Business Division, Renesas Electronics Corporation. “The cost-optimized and pin-compatible S5D3 MCUs are scalable up through the S5D5, S5D9 and S7G2 MCU groups if customers later require additional features, more memory, or higher performance.”

**About the Renesas Synergy Platform**

The [Renesas Synergy Platform](https://www.renesas.com/synergy) is a fully supported software/hardware platform that accelerates time to market and removes the obstacles engineers face designing IoT products. By enabling development to begin at the application programming interface (API) level, Renesas reduces the complexity with designing security-aware connected devices and HMI systems with graphical user interfaces and capacitive touch.The Synergy Platform is accessible from the [Renesas Solutions Gallery](https://www.renesas.com/products/synergy/gallery.html), and consists of integrated software, development tools, and scalable Arm® Cortex®-M-based Synergy MCUs fully accessible through the software APIs. There are no upfront licensing fees or back-end royalties – everything is included in the purchase price of the MCU.

**Pricing and Availability**

The Renesas Synergy [S5D3 MCU Group](https://www.renesas.com/products/synergy/hardware/microcontrollers/s5-series/s5d3-group.html) are available now from Renesas Electronics’ worldwide distributors, and are priced from $5.10 USD to $5.40 USD in 10,000-unit quantities.

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| **S5D3 Group MCUs** | **Flash** | **SRAM** | **Package** |
| [R7FS5D37A2A01CLJ](https://www.renesas.com/products/synergy/hardware/microcontrollers/s5-series/s5d3-group/r7fs5d37a2a01clj.html) | 512 KB | 256 KB | 100-pin LGA |
| [R7FS5D37A3A01CFP](https://www.renesas.com/products/synergy/hardware/microcontrollers/s5-series/s5d3-group/r7fs5d37a3a01cfp.html) | 512 KB | 256 KB | 100-pin LQFP |
| [R7FS5D37A3A01CFM](https://www.renesas.com/products/synergy/hardware/microcontrollers/s5-series/s5d3-group/r7fs5d37a3a01cfm.html) | 512 KB | 256 KB | 64-pin LQFP |
| [R7FS5D37A3A01CNB](https://www.renesas.com/products/synergy/hardware/microcontrollers/s5-series/s5d3-group/r7fs5d37a3a01cnb.html) | 512 KB | 256 KB | 64-pin QFN |

The [TB-S5D3 Target Board Kit](https://www.renesas.com/products/synergy/hardware/kits/tb-s5d3.html), priced at $34.00 USD, allows customers to evaluate the S5D3 and start their system development using an on-chip debugger, through-hole pin header access to all MCU pins, USB port, LEDs, and capacitive touch buttons. The kit comes with users guide, design files, schematics, PCB layout and bill of materials (BOM) cost.

Watch the video “[Design your next IoT solution using the Synergy S5D3 MCU](https://www.renesas.com/eu/en/support/videos.html?videoId=6002833374001)”, and learn more about the new S5D3 MCUs in Booth 1-310 (Hall 1) at [embedded world](https://www.embedded-world.de/en), February 26-28, 2019 in Nuremberg, Germany.

**About Renesas Electronics Corporation**

Renesas Electronics Corporation ([TSE: 6723](http://www.jpx.co.jp/english/)) delivers trusted embedded design innovation with complete semiconductor solutions that enable billions of connected, intelligent devices to enhance the way people work and live. A [global](https://www.renesas.com/en-hq/about/company/profile/global.html) leader in microcontrollers, analog, power, and SoC products, Renesas provides comprehensive solutions for a broad range of automotive, industrial, home electronics, office automation, and information communication technology applications that help shape a limitless future. Learn more at [renesas.com](http://www.renesas.com/).

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