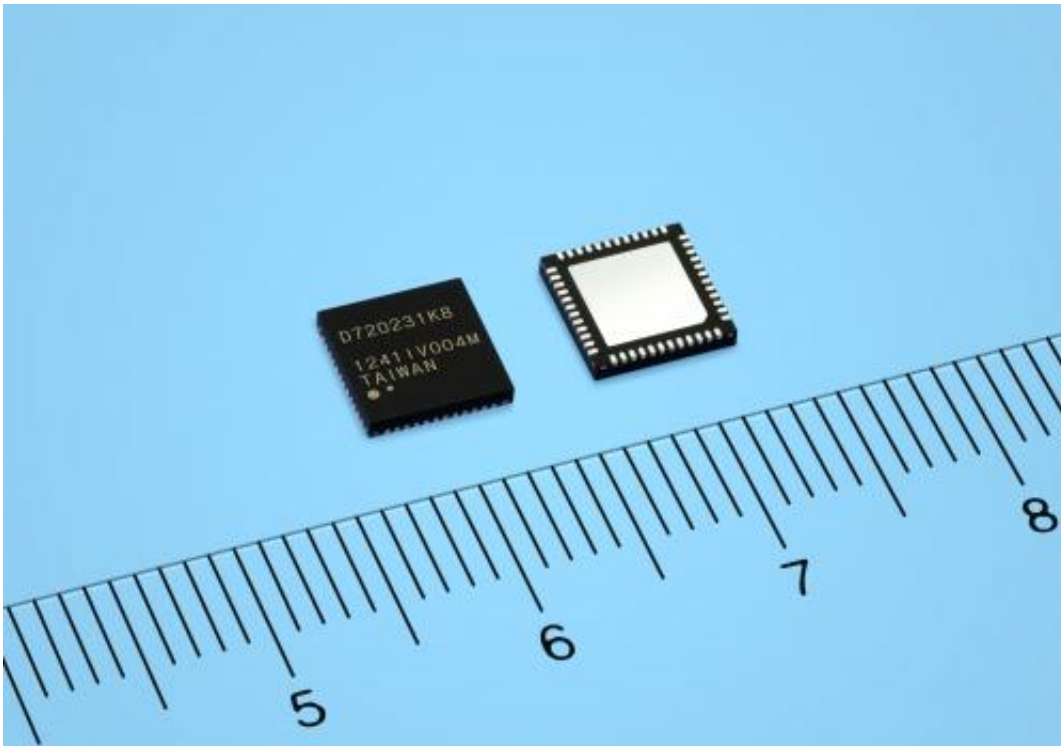


Second-generation USB 3.0-SATA3 bridge SoC with reduced external components

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Credit: Renesas Electronics

Renesas Electronics today announced the availability of its new SuperSpeed Universal Serial Bus (USB 3.0) to Serial ATA (SATA) Revision 3 [Note] bridge SoC (system on chip, part number μ PD720231) that enables the reduction of the total BOM significantly. The μ PD720231 enables effective multi-gigabit per second (Gbps) data transfer between a USB 3.0 host system and a SATA device used in

widely adopted external USB hard drives and solid state drives (SSD).

USB 3.0 technology delivers more than 10 times the data transfer performance of the commonly used USB 2.0 peripheral interface. As the demand for [media storage](#) capacities and data transfer speed increases, the μ PD720231 offers a fundamental building block to create an improved user experience for external USB storage.

Renesas Electronics has played a leading role both in defining USB standards and in developing USB technology. Renesas has enabled the USB 3.0 market by releasing the μ PD720200 USB 3.0 host controller to [mass production](#) in June 2009. Since then, the company's lineup of USB 3.0 host controllers has been widely adopted by customers worldwide. Total shipments of these products have already exceeded 62 million units. In December 2009, the company also released a UASP driver that further enhances the data transfer for storage devices by improving the performance limit of the BOT (Bulk-Only Transfer) standard used by USB 2.0, making it possible for external storage devices to take advantage of the increased speed offered by the new USB 3.0 standard. To respond to the need for even faster data transfer performance necessary with the increased scale of the data in the [storage device](#) market, Renesas introduced the μ PD720230 bridge SoC and confirmed USB-IF certification in 2011.

The new μ PD720231 device was developed to respond to the need to reduce the number of components and to simplify printed circuit board (PCB) controller design.

Key features of the new μ PD720231 SoC:

- **Contributes to downsizing and power saving.** Through integration, the new μ PD720231 USB 3.0-SATA3 bridge SoC

has reduced the number of components by 40 percent compared with the number of other commercial devices with equal functions. The μ PD720231 features an embedded voltage regulator and power-on reset circuit. The new product can store firmware in SATA devices such as hard discs and SSD and can also omit external serial flash ROM.

- **Support for SATA Revision 3.0 enables 6 Gbps high-speed data transfer.** The μ PD720231 USB 3.0-SATA3 bridge SoC supports SuperSpeed USB transfer speeds of up to 5 Gbps—as well as the SATA Revision 3.0 6Gbps bit rate achieving maximum data transfer performance of USB 3.0. Thus, users can utilize actual USB 3.0 transfer rate, free from the transfer speed of the SATA side.
- **Supports high-speed UASP protocol, independent of OS.** Renesas' free UASP driver runs not only on the Renesas μ PD720200 USB 3.0 host controller and its follow-on products, the μ PD720200A, μ PD720201 and μ PD720202, but also on major chip sets with an embedded USB 3.0 host controller, enabling higher data transfer speed on Windows XP/Vista/7. Renesas licenses this driver from MediaLogic, Corp. The new μ PD720231 device is compatible with Microsoft UASP drivers on Windows 8, and therefore does not depend on PC platform or OSs and can work in any major environment with higher data [transfer speed](#) by UASP.
- **Seamless connectivity with proven Physical Layer (PHY) core.** [Renesas'](#) USB 3.0 host controllers have provided the de facto USB 3.0 connection for various peripherals. The new μ PD720231 bridge adopts the same proven PHY core used in these host controllers, eliminating the unknown when connecting to USB 3.0 hosts.
- **Supports optical disc drive by ATAPI command support.** The new μ PD720231 device can control BD/DVD drives by supporting ATAPI command. It facilitates design of BD/DVD

drives with USB interface. Refer to the separate sheet for the main specifications of the μ PD720231 USB 3.0 SATA3 SoC.

Mass production started in February 2013 and is expected to reach a scale of 500,000 units per month in June 2013.

Provided by Renesas Electronics

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