Renesas Electronics Strengthens Its Lineup of USB 3.0 Hub Controllers to Meet Demand for More USB Ports on Electronic Devices

Addition of Two-Port Hub Controller alongside Existing Four-Port Product Widens System Designers’ Selection of the Number of USB Ports

Santa Clara, Calif., September 9, 2013— Renesas Electronics Corporation (TSE: 6723), a premier provider of advanced semiconductor solutions, today announced a new Universal Serial Bus 3.0 (USB 3.0) hub controller (part number µPD720211) with dual downstream ports, extending more flexibility to implement USB 3.0 connections of digital devices such as PCs, tablets, and digital TVs to other USB 3.0-compatible peripheral devices.

Adding a new two-port hub controller to the lineup alongside Renesas’ world’s-first certified USB 3.0 four-port hub controller (part number µPD720210) increases system designers’ options for USB 3.0 hub expansion with products such as PCs, tablets, display monitors, docking stations (function expansion units that connect to notebook PCs), and digital TVs. The addition of the two-port hub controller (µPD720211) supports designs with tighter space and cost budgets, while expanding the USB 3.0 connectivity to utilize the increasing number and performance of USB 3.0 peripherals devices available in the market.

The two-port hub controller employs a quad flat no-lead (QFN) package, which is presently the industry-leading small package for USB 3.0 hub controller chips, and integrates a voltage step-down regulator equivalent to that of existing hub controllers as well as peripheral components required for rapid charging of tablets, smartphones, etc. In addition, the two-port hub controller delivers industry-leading small power consumption at approximately 5 milliwatts (mW) in low-power mode and approximately 350 mW during USB 3.0 operation.

The USB 3.0 standard, which delivers 10 times the previous maximum transfer rate of 480 megabits per second, was introduced in response to demand for higher data interface speeds to accommodate the large file sizes of video content and recording media with increased storage capacity. More recently, chipsets with integrated USB 3.0 host controller functionality have appeared, spurring adoption of USB 3.0 on devices other than PCs, such as tablets and digital home electronics products.

Against this background, there is a growing need for the ability to add more USB 3.0 ports at low cost to meet the product specifications of PCs, etc. In addition, in the case of
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products incorporated into PCs, etc., low standby power consumption and suitability for mounting on small printed wiring boards are desired. Renesas developed the new two-port hub µPD720211 controller in response to demand for a compact hub controller with a small package and integrated peripheral functions for reduced space.

Another issue is that electrical signals can deteriorate when there is a long distance between the ports of the host controller built into the chipset and the connector that functions as the USB connection opening. The new two-port µPD720211 hub controller solves this problem by integrating the link from the ports to the USB connectors.

**Key features of the new two-port USB 3.0 Hub controller:**

1. Two ports and power-efficient operation for optimized system configuration cost and reduced power consumption
   
   The new µPD720211 hub controller retains the functions and performance of the earlier µPD720210, the world’s first four-port hub controller to be certified for compliance with the USB 3.0 standard. In addition to providing the same high level of connection compatibility as the earlier µPD720210 device, but for two rather than four ports, the new µPD720211 device delivers power consumption among the lowest in the industry at approximately 5 mW in low-power mode and approximately 350 mW during USB 3.0 operation. This contributes to both optimized system configuration cost and reduced power consumption.

2. Compact package for reduced device space requirements
   
   The new µPD720211 hub controller employs a quad flat no-lead (QFN) package, which at 8 mm × 8 mm is presently among the smallest in the industry for USB 3.0 hub controller chips, allowing for a smaller mounting area. The µPD720211 device also integrates a voltage step-down regulator for lowering the 3.3 V peripheral component power supply to 1.05 V, as well as peripheral functions required for a rapid charging, etc. This results in a total mounting area among the smallest in the industry when peripheral components are included. Thus, the new µPD720211 device contributes to a more compact system size overall.

**Leadership in USB**

As a member of the USB Implementers Forum (USB-IF) since 1996, Renesas Electronics (formerly NEC Electronics) has played a leading role both in defining USB standards and in developing USB technology. In April 2000, the company (then NEC Electronics) launched the uPD720100 (the world’s first USB 2.0-compliant host controller chip),
the uPD720110, (the world's first USB 2.0-compliant hub controller chip) and an extensive lineup of other USB devices, and has earned a reputation for delivering dedicated customer service and high quality.

In May 2009, Renesas Electronics (then NEC Electronics) introduced the industry's first USB 3.0 xHCI host controller and, only after four months of its release, the company became the world's first to earn the “Certified SuperSpeed USB (USB 3.0)” certification from the USB-IF, and also started mass production of the uPD720200 host controller. Renesas contributed to the USB-IF certification tests, providing the organization with the host controller products as the platform for other USB 3.0 device certification.

Pricing and Availability

Samples of Renesas Electronics' uPD720211 two-port hub controller will be available in October 2013, priced at US$2.5 per unit. Mass production is scheduled to begin in February 2014 and is expected to reach combined production volume of 1,000,000 units per month by April 2014. (Pricing and availability are subject to change without notice.)

About Renesas Electronics Corporation

Renesas Electronics Corporation (TSE: 6723), the world's number one supplier of microcontrollers, is a premier supplier of advanced semiconductor solutions including microcontrollers, SoC solutions and a broad range of analog and power devices. Business operations began as Renesas Electronics in April 2010 through the integration of NEC Electronics Corporation (TSE:6723) and Renesas Technology Corp., with operations spanning research, development, design and manufacturing for a wide range of applications. Headquartered in Japan, Renesas Electronics has subsidiaries in 20 countries worldwide. More information can be found at www.renesas.com.

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