

News Release

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Renesas Electronics Europe and port GmbH Announce Availability of CANopen Protocol Stack for latest Renesas' 32-Bit RX231 MCU Group

Düsseldorf, October 22, 2015 – Renesas Electronics Europe, a premier supplier of advanced semiconductor solutions, and port GmbH today announced the availability of a highly efficient CANopen protocol stack for Renesas' smart 32-bit RX231 MCUs. Renesas ported the widely used and popular CANopen software stack in cooperation with its business partner port GmbH.

The Renesas RX231 series offers a family of devices with large on-chip SRAM of up to 64 KB and up to 512 kB of on-chip flash, paired with one Controller Area Network (CAN) interface, which is fully compliant with the CAN 2.0B and the ISO11898-1 (standard and extended frames) standards, and is therefore well-suited to industrial and consumer applications requiring CAN interfaces.

The embedded CAN module on the RX231 includes 20 buffers, 16 of which can be programmed to be shared between receive and transmit functions, creating 2 receive FIFO's and a transmit FIFO. A powerful acceptance filter selects which messages to receive according to 16 receive rules allowing the user a great deal of flexibility in creating incoming message handling strategies. The CAN modules can interact with Renesas' RX CPU by using different interrupts such as reception complete, transmission complete, receive FIFO, transmit FIFO, and error interrupts.

"Amongst the other available industrial communication protocols, CANopen remains a market leader especially in the fields of industrial automation and medical applications where an easy manageable protocol with a small memory footprint for reliable low bandwidth communication is essential," said Bernd Westhoff, Manager of the Global RX Product Marketing team of Renesas Electronics Europe. "The widespread popularity of CANopen in those applications is supported by Renesas' latest 32bit RX231 MCU with embedded CAN interface. These RX MCUs, combined with the well-known CANopen stack supported by port GmbH, provide an excellent foundation for fast and smart development using the powerful embedded CAN interfaces."

The CANopen stack follows the strict and very efficient coding and documentation standards established by port GmbH. These standards result in a very small memory footprint (less than 19 KB Flash / 3 KB RAM) as well as a high execution speed and easily readable code. For easy implementation, port GmbH offers board support packages for the standard Renesas Starter Kits.

Further PORT GmbH offers CANopen training, integration workshops and “be up to date” service maintenance agreements.

The RX231 MCU Group with embedded CAN comes in 48-pin to 100-pin packages with on-chip flash memory of 128 KB to 512 kB and 32 KB to 64 KB of on-chip SRAM.

The RX231 MCU Group offers a maximum operating frequency of 54 MHz. As part of the enhanced RXv2 CPU core architecture, the RX231 incorporates an on-chip 32-bit multiplier, single-precision floating-point unit (FPU) and a 32-bit enhanced barrel shifter for dramatically improved operation processing performance.

CANopen Source Code Library

The CANopen source code library Master/Slave contains the services of the CANopen CiA-301 V4.2 and CiA-302 standard including LSS. The library has been fully ANSI-C coded, and hardware specific interfaces have been placed in separate driver packages (also available in ANSI-C source code). This facilitates adaptation to different systems. The scope of delivery for the CANopen Source Code Library includes one driver package for one CPU and one CAN controller (if already available at port). Further information is available at:

<http://www.port.de/en/products/canopen/software/ansi-c-canopen-library.html>

CANopen Design Tool

The CANopen Design Tool enables the rapid and cost-effective development of CANopen applications (devices). It automatically generates an object dictionary and an initialization function in C-code, an Electronic Data Sheet and the documentation of the project.

Furthermore, it simplifies the configuration of the CANopen Library and of the CANopen Driver Packages. An evaluation version is available free of charge at:

<http://www.port.de/pages/shop/canopends.php?lang=en>

The CANopen stack and the CANopen Design Tool (CDT) are available now. Further information is available from Renesas Electronics Europe sales offices or from port GmbH.

About port GmbH

port is one of the leading providers of industrial communication technologies with emphasis on CAN/CANopen. Since 1990 port has been situated in Halle (Saale) Germany and for five years port has successfully established a position in the area of Industrie 4.0 - industrial Ethernet technology (PROFINET, EtherCAT, POWERLINK, EtherNet/IP). Apart from stacks, tools, trainings and integration support port offers customer specific hard- and software development, including the manufacturing of electronic devices and systems.

About Renesas Electronics Europe

Renesas Electronics Europe, with its business operations centre located in Dusseldorf, Germany, is a wholly owned subsidiary of Renesas Electronics Corporation (TSE: 6723). As the world's number one supplier of microcontrollers and a premier supplier of advanced semiconductor solutions, Renesas supports customers get their products to market quicker by providing complete solutions that integrate microcontrollers and microprocessors, SoC, ASIC, Analog & Power devices and software. Renesas was established in 2010 and is headquartered in Japan. With over 800 hardware and software alliance partners worldwide it has the industry's largest local support network.

Renesas Electronics' European structure is comprised of two business groups – automotive and industrial – as well as the global ADAS solution group and the engineering group. The engineering group consists of the European Design Centre, the European Quality Centre and the European Technology Centre, which design leading-edge products specifically for the European as well as the global market and provide technical support to local customers.

Further information about Renesas Electronics Europe is available at www.renesas.eu.

Renesas Electronics Europe is also on social media at http://twitter.com/Renesas_Europe, <http://facebook.com/RenesasEurope> and <http://youtube.com/RenesasPresents>.

Remarks

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