

Green Energy Budget for Wireless Sensor Networks

Dresden, November 30, 2012

More power, less power consumption: Based on Atmel's new SoC ATmega256RFR2, dresden elektronik is placing a new radio module family deRFmega256 on the market in early December. The modules combine higher memory capacity with considerably reduced power consumption compared to the existing modules deRFmega128. With this dresden elektronik is reacting to the increasing demand for more efficient radio modules for ZigBee applications.

Mini modules – compact and efficient

The new series of radio modules in mini format presented by dresden elektronik in March of this year at the embedded world trade show in Nuremberg is being extended consistently in this manner. The current developments in the ZigBee market and complex applications in sensor networks could only be partially catered to with the existing deRFmega128 modules. The new radio modules deRFmega256 for the 2.4 GHz frequency band have enough resources available to meet the requirements of ZigBee IP and Smart Energy as well as of the current ZigBee Light Link profile. First samples will be available in the first quarter of 2013 in the online shop under <https://shop.dresden-elektronik.de/>.

Features:

- dimensions: 19 x 13.2 x 3 mm
- microcontroller: ATmega256RFR2 for 2.4 GHz
- with integrated chip ceramic antenna or RF pads for connecting own antenna designs
- control lines for power amplifier + antenna diversity

New Atmel chip ATmega256RFR2

At the core of the radio modules is Atmel's new ATmega256RFR2 chip from the 8-bit microcontroller family that was introduced in the middle of November at the trade show electronica. Compared to its predecessor ATmega128RFA1, the new AVR-SoC offers double the memory (256 KB Flash memory, 8 KB EEPROM, 32 KB SRAM) and a wider temperature range, up to 125°C, for deployments in more demanding environments such as wireless controlled lighting applications.

The improved features in Atmel's wireless solution include a true 1.8 V operation at 16 MHz, and provides significantly reduced power consumption. This is enabled by the new RX override feature for intelligent frame reception, while the power consumption in receive mode has been reduced by 50 percent from 12.5 mA to 6 mA by the RPC-Mode.

Press Release

“The new modules with integrated Atmel wireless solutions offer higher energy efficiency to extend the durability of battery-driven or energy harvesting applications. This further demonstrates Atmel’s continued leadership in the wireless and low-power market segments,” said Magnus Pedersen, product marketing director of MCU Wireless Solutions, Atmel Corporation.

For several years dresden elektronik has developed and produced components and development kits for the American chip manufacturer in the field of wireless technology according to IEEE 802.15.4. “The success of our close cooperation proves that we are right. The collectively acquired know-how from hardware support to the application level is a crucial competitive advantage for the two companies. This will also be confirmed by our new ZigBee Light Link project with an especially short time-to-market.” says Lutz Pietschmann, managing director of dresden elektronik ingenieurtechnik gmbh.

dresden elektronik ingenieurtechnik gmbh

With currently approx. 80 employees dresden elektronik develops and manufactures customized solutions in the field of low-power wireless communication, control systems for traffic light systems, modular display technology for public transportation management as well as measurement and testing technology.

For wireless sensor networks based on the low-power radio standard IEEE 802.15.4 the product range extends from optimally tuned hardware components such as radio modules and USB sticks to easy-to-use control tools for ZigBee or 6LoWPAN networks all the way to customized turn-key solutions.

From development to serial production through to type testing of industrial electronic components and systems, dresden elektronik has offered the entire value-added chain from a single source for more than 20 years.

Products from dresden elektronik are applied in numerous branches such as mechanical engineering and construction, stagecraft, traffic guidance technology, automotive industry, measurement and test engineering, medical engineering, semiconductor industry, precision equipment engineering and in research and development.

For more information please visit: www.dresden-elektronik.de