

WAVEMOTE

Ultra low-power wireless sensor network (WSN) 2.4GHz IEEE 802.15.4 module



Brief description

Wavemote is an ultra low-power OEM module for wireless sensor network (WSN) applications. Wavemote offers a modular architecture, which allows for high flexibility, fast design, easy integration and low-cost customization.

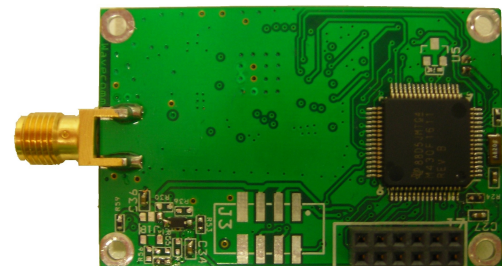
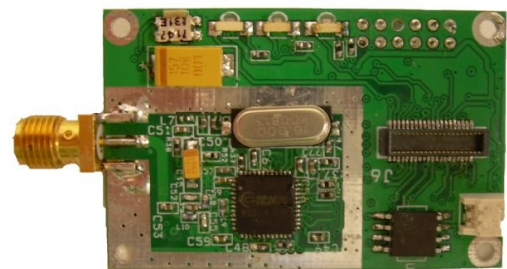
The wireless module includes a 16 bit RISC microcontroller unit (MCU) and a 2.4GHz Zigbee-ready radio transceiver, which operates according IEEE 802.15.4 standard.

A 40-pin connector allows to plug-in customized sensor boards, to fulfil specific requirements. Available sensors include: temperature, humidity, light, infrared, magnetometer, accelerometer.

Module programming and interfacing is achieved, through a dedicated 12-pin connector, with an external programming board, which offers JTAG and USB standard interfaces.

Wavemote is ideal for fast and easy implementation of distributed embedded wireless sensor networks, in a wide range of applications:

- remote control and sensing
- environmental monitoring
- automatic meter reading
- building and infrastructure monitoring
- transportation and mobility
- home automation
- automotive



Main features

Microcontroller (MCU)	Texas Instruments MSP430F1611 16-bit RISC with 48kB flash, 10kB RAM Ultra-low current consumption: 0.5 mA (active mode @1MHz), 0.2 μ A (LPM4) Integrated 12-bit ADC and DAC, DMA, SVS, SPI/I2C interfaces
Transceiver	Texas Instruments CC2420 (2.4 – 2.483) GHz IEEE 802.15.4 compliant / Zigbee-ready, 250 kbps data rate Low current consumption: 18.8 mA (RX), 17.4 mA (TX @ 0dBm) Output power: from -25 to 0 dBm (programmable) Sensitivity: -95 dBm Typical communication range: 150 m (outdoor), 30 m (indoor)
Connectors	SMA female: for external antenna 40-pin connector: for external sensor board (optional) 12-pin connector: for programming/interface board
Power	3V (2 AA Alkaline battery) 3 – 5 V (with optional voltage regulator)
Size	46 x 30 mm

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