moteiv

Wireless Sensor Networks

Devices
Consulting
Applications

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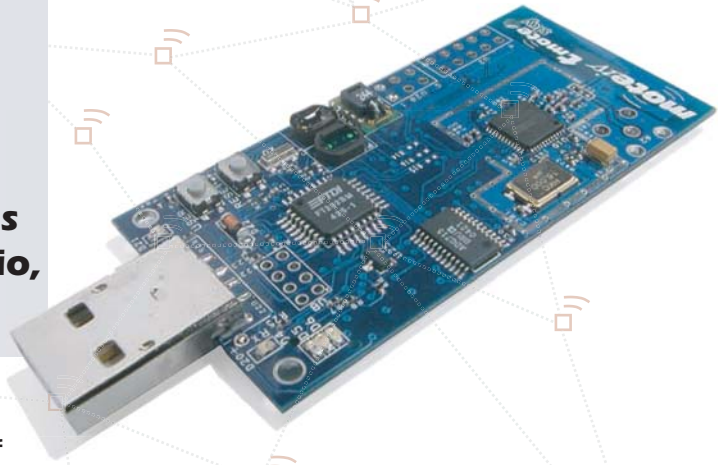
tmote™ sky

IEEE 802.15.4 Module

IEEE 802.15.4 compliant device for wireless mesh networking featuring a 250kbps radio, 10kB RAM, 48kB flash, and 1MB storage.

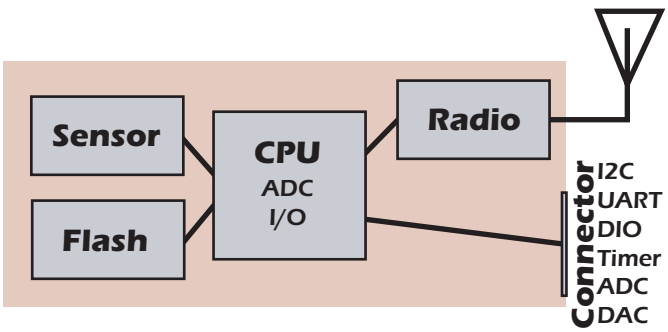


Tmote sky is the next-generation mote platform for extremely low power, high data-rate, sensor network applications designed with the dual goal of fault tolerance and development ease. Tmote sky boasts the largest on-chip RAM size (10kB) of any mote, the first IEEE 802.15.4 radio, and an integrated on-board antenna providing up to 125 meter range. Tmote sky offers a number of integrated peripherals including a 12-bit ADC and DAC, Timer, I2C, SPI, and UART bus protocols, and a performance boosting DMA controller. Tmote sky offers a robust solution with hardware protected external flash (1Mb in size), applications may be wirelessly programmed to the Tmote sky module. In the event of a malfunctioning program, the module loads a protected image from flash. Toward development ease, Tmote sky provides an easy-to-use USB protocol for programming, debugging and data collection.

Designed at the University of California, Berkeley, by TinyOS developers, the Tmote sky platform offers seamless vertical integration between the hardware and the TinyOS operating system. TinyOS is a small, open-source, component-based operating system also developed at UC Berkeley. TinyOS was specifically designed to support the networked sensor regime. By leveraging their intimate knowledge of both the hardware and TinyOS layers, Moteiv produces a robust device and can promise the highest levels of support to our customers.

Features

- 250kbps 2.4GHz IEEE 802.15.4 Chipcon Radio
- 8MHz TI MSP430 microcontroller with 10kB RAM
- Integrated onboard antenna with 125m range
- Integrated Humidity and Temperature Sensor
- Ultra low current consumption
- ADC and UART operate with MCU off (<5uA current)
- Integrated peripherals: DMA, ADC, DAC, PWM, SVS
- Fast wakeup from sleep (<6us)
- Hardware link-layer encryption and authentication
- Programming and data collection via USB



Specifications

CPU	
Bus Speed	8 MHz
RAM	10 kB
Program Space	48 kB
External Flash	1024 kB
Serial Communications	DIO,SPI,I2C,UART
Current (active w/ Radio on)	19 mA
Current (sleep)	5.1 uA
Startup Time	6 us
Voltage	1.8-3.6 V
Radio	
Frequency	2400-2483 MHz
Data rate	250 kbps
Output Power	-25 to 0 dBm
Startup Time	580 us
Antenna Type	Inverted-F or SMA Coax
Humidity Sensor	
Humidity Accuracy	3.5% RH
Temperature Accuracy	0.5 °C
Sampling Rate	90 Hz

Order online at http://www.moteiv.com