



Ultra Low Power

Telos' microcontroller has a sub 1µA sleep state and can rapidly wakeup from sleep in under 6µs. Telos operates down to 1.8V in order to extract as much energy as possible from the battery source.

Designed for Long-lived Monitoring Applications

Designed by UCB and Intel Research, Telos uses a low power microcontroller, radio, and flash to maximize longevity and minimize power consumption.

Standards-based Interfaces

IEEE 802.15.4 radio for wireless personal area networks provides low power radio operation while achieving a 250kbps data rate. Programming and communication are performed through USB.

Single-board Design

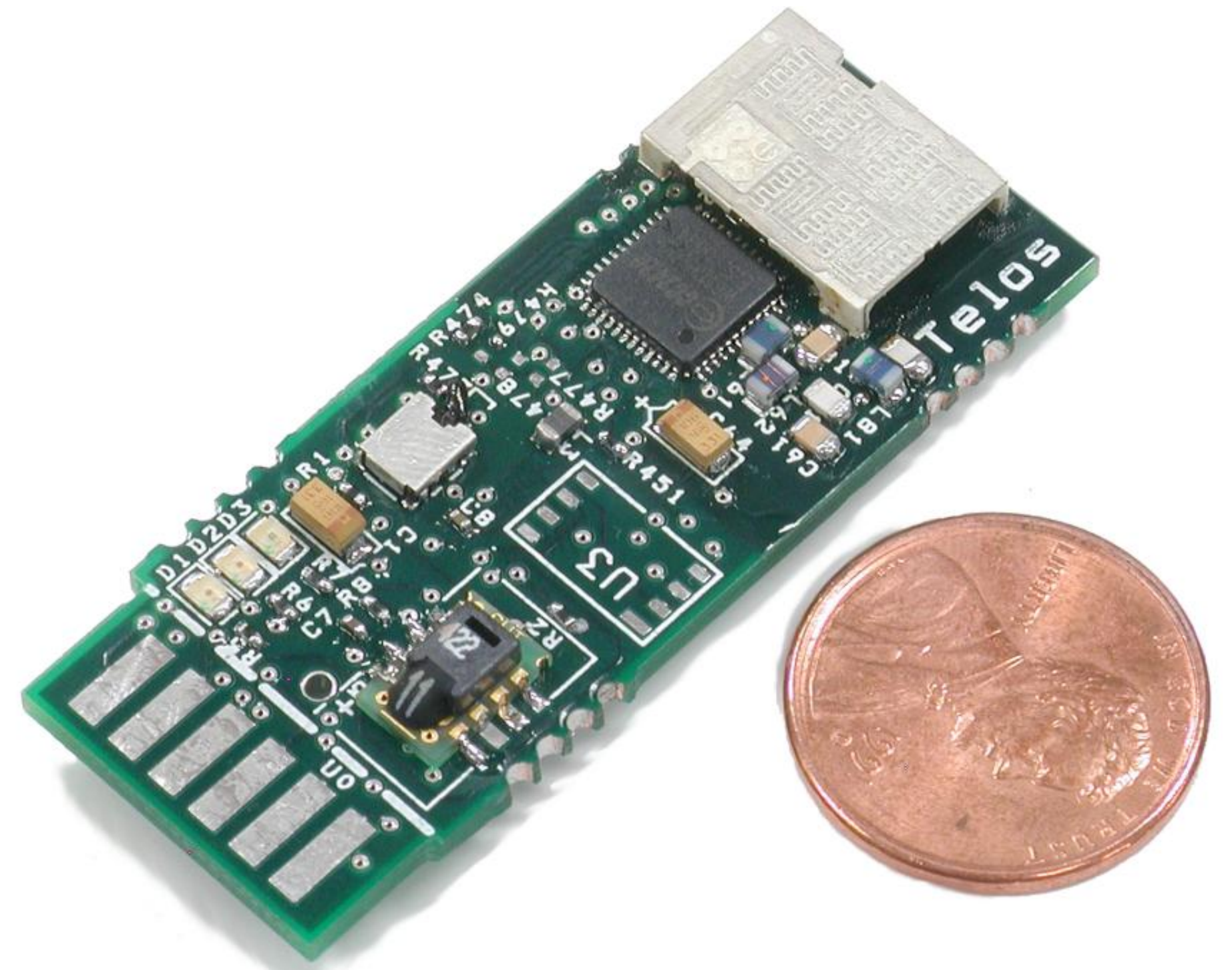
By integrating all sensors onto a single board, Telos is easy to environmentally seal. The single board philosophy reduces cost and size by producing specialized motes for each class of monitoring applications. Telos is mechanically robust by minimizing connectors and integrating the wireless antenna with the circuit board.

Open Source Software

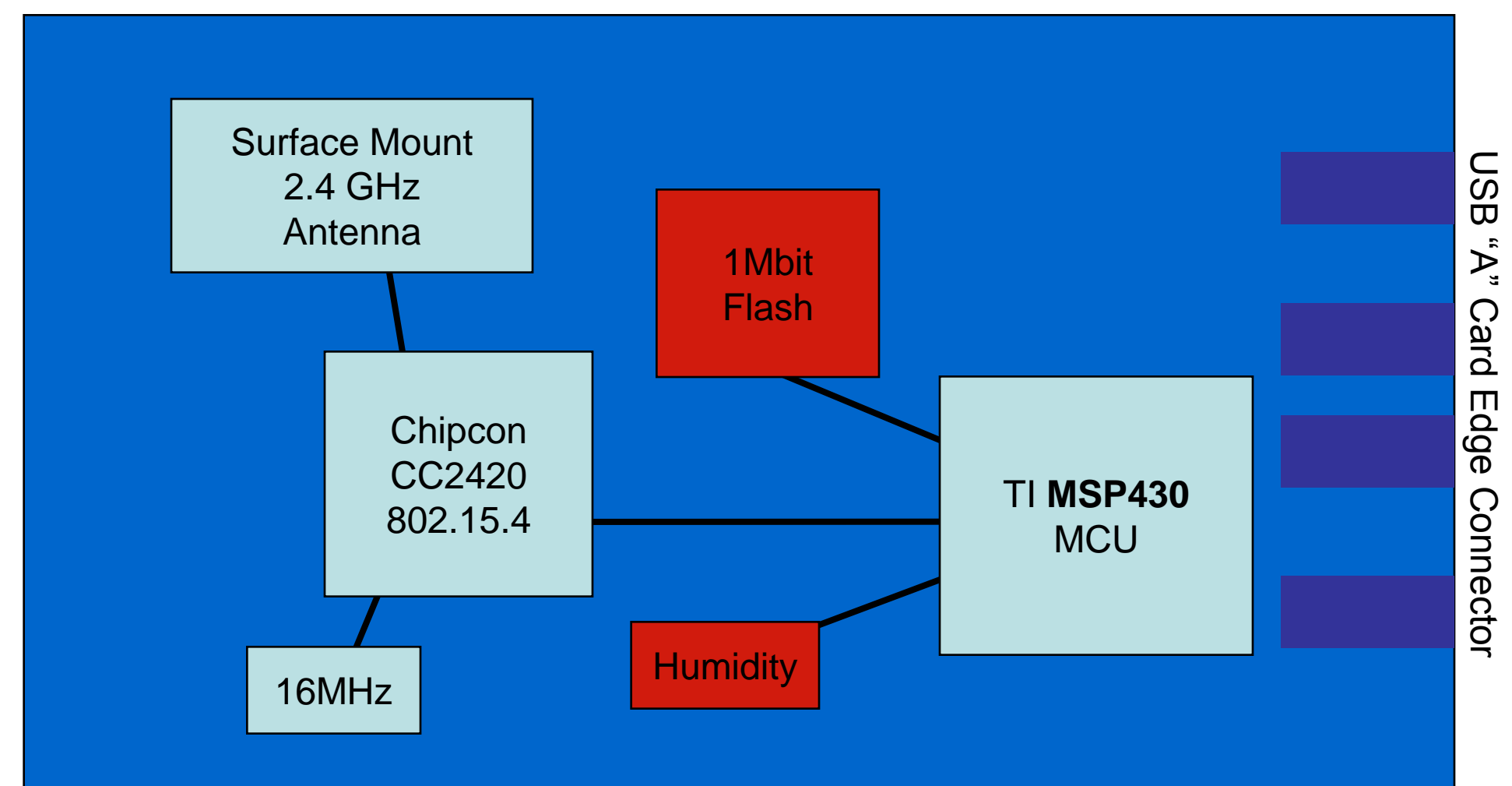
TinyOS includes support for the Telos platform. Compilation and programming are performed by a variety of open source tools including msp-gcc, perl, and python.

Status

- TinyOS running on Motorola HCS08 and Texas Instruments MSP430
- Basic TinyOS applications operational
- 802.15.4 Radio Stack under development. Stack designed for operation on Motorola, TI, and Atmel microcontrollers using a hardware abstraction layer.



Block Diagram



Telos:Humidity Specifications

CPU	
Bus Speed	8 MHz
RAM	2 Kb / 10 Kb
Program Space	60 Kb / 48 Kb
External Flash	256 Kb
Serial Communications	DIO,SPI,I2C,UART
Current (active w/ radio on)	19 mA
Current (sleep)	0.8 µA
Voltage	1.8-3.6V
Radio	
Frequency	2400-2483 MHz
Data rate	250 kbps
Output Power	-25 to 0 dBm
Antenna Gain	+3 dBi
Humidity Sensor	
Humidity Accuracy	3.5% RH
Temperature Accuracy	0.5 °C
Electromechanical	
Battery	2xAA, 2/3A, coin cell

