MICA2DOT

WIRELESS MICROSENSOR MOTE

- 3rd Generation, Quarter-Sized (25mm), Wireless Smart Sensor
- TinyOS - Unprecedented Communications and Processing
- Battery-Powered, Low-Mass
- Fits Anywhere, Wireless Reprogrammable
- Wireless Communications with Every Node as Router Capability
- 868/916 MHz, 433 MHz or 315 MHz Multi-channel Radio Transceiver (MICA2 Compatible)

Applications

- Wireless Sensor Networks
- Temperature and Environmental Monitoring
- Remote Data Logging
- Smart Badges, Wearable Computing
- Active 2-Way “Smart” Tags

MICA2DOT

The MICA2DOT Mote is a third generation mote module used for enabling low-power, wireless, sensor networks. The MICA2DOT is similar to the MICA2, except for its quarter-sized (25mm) form factor and reduced input/output channels. The following features make the MICA2DOT better suited for commercial deployment:

- 868/916MHz, 433MHz or 315MHz multi-channel transceiver with extended range
- TinyOS (TOS) Distributed Software Operating System v1.0 with improved networking stack and improved debugging features
- Support for wireless remote reprogramming
- Compatible with MICA2 (MPR400) Mote
- On Board Temperature Sensor, Battery Monitor, and LED

TinyOS 1.0 is a small, open-source, energy efficient, software operating system developed by UC Berkeley which supports large scale, self-configuring sensor networks. The source code and software development tools are publicly available at:

http://webs.cs.berkeley.edu/tos

Processor and Radio Platform (MPR500CA):

The MPR500CA is based on the Atmel ATmega 128L. The ATmega 128L is a low-power microcontroller which runs TOS from its internal flash memory. Using TOS, a single processor board (MPR500CA) can be configured to run your sensor application/processing and the network/radio communications stack simultaneously. The MICA2DOT features 18 solderless expansion pins for connecting 6 Analog Inputs, Digital I/O, and a serial communication or UART interface. These interfaces make it easy to connect to a wide variety of external peripherals.

Sensor Boards:

Various sensor boards and data acquisition boards are available from Crossbow. These boards connect onto the MICA2DOT through a ring of 18 solderless expansion pins. These pins allow boards to be stacked both above and below the MICA2DOT processor radio board. Crossbow supplies the following expansion boards:

- MDA500CA: Protoboard
- Contact Crossbow for information on other boards
Base Stations:
The MICA2DOT communicates with base stations that use the MICA2 radio module. These include a standard MICA2 (MPR400CB) mated to a Mote Interface Board (MIB510CA), as well as the MICA-WEB Gateway.

Packaging:
The MICA2DOT is presently distributed as a stand-alone subassembly without packaging. In future, a small plastic housing will be available.

Developers Kits:
Crossbow offers a variety of development kits for the MICA2 and MICA2DOT Motes.