MICA2DOT
WIRELESS MICROSENSOR MOTE

- 3rd Generation, Quarter-Sized (25mm), Wireless Platform for Smart Sensors
- Designed Specifically for Deeply Embedded Wireless Sensor Networks
- 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;

- 868/916 MHz, 433 MHz or 315 MHz 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 (MPR4x0) Mote
- Onboard 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 ATmega128L. 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
Crossbow offers a growing family of compatible sensor and data acquisition boards for the MICA2DOT. These boards are connected to the MICA2DOT via a ring of 18 solderless expansion pins. These pins allow boards to be stacked both above and below the MICA2DOT processor/radio board. Custom sensor and data acquisition boards are also available. Please contact Crossbow for additional information.
Base Stations
The MICA2DOT communicates with base stations that use the MICA2 radio module. These include a standard MICA2 Mote mated to a serial interface board (MIB510CA), as well as the MIB600CA for TCP/IP-based Ethernet networks.

Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>MOTE-KIT5040CC</td>
<td>868/916 MHz Professional Developer’s Kit (4x MPR500CA, 4x MPR400CB, 3x MTS310CA, 2x MTS510CA, 2x MDA500CA, 1x MIB510CA)</td>
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<tr>
<td>MOTE-KIT5141CC</td>
<td>433 MHz Professional Developer’s Kit (4x MPR510CA, 4x MPR410CB, 3x MTS310CA, 2x MTS510CA, 2x MDA500CA, 1x MIB510CA)</td>
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<tr>
<td>MOTE-KIT5242CD</td>
<td>315 MHz Professional Developer’s Kit (4x MPR520CA, 4x MPR420CB, 3x MTS310CA, 2x MTS510CA, 2x MDA500CA, 1x MIB510CA)</td>
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<tr>
<td>MPR500CA</td>
<td>868/916 MHz Processor/Radio Board</td>
</tr>
<tr>
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Specifications subject to change without notice.