MICAz
WIRELESS MEASUREMENT SYSTEM

- IEEE 802.15.4, Tiny, Wireless Measurement System
- Designed Specifically for Deeply Embedded Sensor Networks
- 250 kbps, High Data Rate Radio
- Wireless Communications with Every Node as Router Capability
- Expansion Connector for Light, Temperature, RH, Barometric Pressure, Acceleration/Seismic, Acoustic, Magnetic and other Crossbow Sensor Boards

Applications
- Indoor Building Monitoring and Security
- Acoustic, Video, Vibration and Other High Speed Sensor Data
- Large Scale Sensor Networks (1000+ Points)
- ZigBee Compliant Systems and Sensors

MICAz

The MICAz is a 2.4 GHz, IEEE 802.15.4 compliant, Mote module used for enabling low-power, wireless, sensor networks. The MICAz Mote features several new capabilities that enhance the overall functionality of Crossbow’s MICA family of wireless sensor networking products. These features include:

- IEEE 802.15.4/ZigBee compliant RF transceiver
- 2.4 to 2.4835 GHz, a globally compatible ISM band
- Direct sequence spread spectrum radio which is resistant to RF interference and provides inherent data security
- 250 kbps data rate
- Runs TinyOS 1.1.7 and higher, including Crossbow’s reliable mesh networking stack software modules
- Plug and play with all of Crossbow’s sensor boards, data acquisition boards, gateways, and software

TinyOS 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 software development tools are publicly available at: http://webs.cs.berkeley.edu/tos

Processor & Radio Platform (MPR2400CA)

Using TinyOS, a single processor board can be configured to run your sensor application/processing and the mesh networking radio stack simultaneously. The MICAz (MPR2400CA) IEEE 802.15.4 radio offers both high speed (250 kbps) and hardware security (AES-128). The MICAz 51-pin expansion connector supports Analog Inputs, Digital I/O, I2C, SPI and UART interfaces. These interfaces make it easy to connect to a wide variety of external peripherals.

Sensor Boards

Crossbow offers a variety of sensor and data acquisition boards for the MICAz Mote. All of these boards connect to the MICAz via the standard 51-pin expansion connector. Custom sensor and data acquisition boards are also available. Please contact Crossbow for additional information.

Base Stations

A base station allows the aggregation of sensor network data onto a PC or other computer platform. Any MICAz Mote can function as a base station by...
plugging the MPR2400CA Processor/Radio Board into an MIB510CA/ MIB520CA serial/USB interface board. The MIB510CA provides an RS-232 serial interface while the MIB520 provides a USB interface for both programming and data communications. Crossbow also offers a stand-alone gateway solution, 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-KIT2400CB</td>
<td>2.4 GHz MICAz Developer’s Kit (8x MPR2400CA, 4x MTS310CA, 3x MTS300CA, 1x MDA300CA, 1x MIB600CA, 1x MIB510CA)</td>
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<tr>
<td>MPR2400CA</td>
<td>2.4 GHz Processor/Radio Board</td>
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