

# OEM DESIGN KIT

## FOR WIRELESS SENSOR NETWORKS

- OEM Design Kit for Wireless Sensor Network Devices
- Stamp-size Modules for Fast Integration of Wireless Processor/Radios into Hardware Designs
- Pre-programmed Sensor Interfaces and Boards for Immediate Sensor Data Acquisition Capabilities
- Gateway for connecting Wireless Sensor Network with PC or Internet
- Windows® Based User Interface for Visualization and Analysis of Network and Sensor Data
- Support for 2.4 GHz, IEEE 802.15.4



## OEM DESIGN KIT

The Crossbow OEM Design Kit supports fast development of wireless sensor network systems. The OEM Design Kit is targeted at applications using the 2.4 GHz frequency band. The kit provides users with OEM Edition Modules, a module programmer, pre-programmed reference design boards, sensor/data acquisition boards, a debug pod and a base station with Ethernet connectivity.

The MoteView application for Windows-based PCs provides an intuitive graphical user interface to monitor and manage the wireless sensor network. It enables users to display network topologies, charts and graphs of sensor readings, as well as configuring and managing sensor nodes.

### Processor Radio Platforms

The stamp-size OEM processor/radio modules offer low-power radios for robust RF communication in the 2.4 GHz band use in a Direct Sequence Spread Spectrum (DSSS) radio. The 68-pin package is designed for easy sensor integration. Reference board design files/gerbers are provided for simplified OEM design integration.

### Sensor Boards

The MDA300 sensor and data acquisition boards provide basic sensor capabilities for temperature and humidity as well as standard interfaces for connecting external sensors to the reference designs.

### MoteWorks™

The development of custom sensor applications is enabled through Crossbow's MoteWorks™ software platform. MoteWorks™ can be specifically optimized for low-power battery-operated networks and provides support for:

- **Sensor Devices:** Network stack and operating system, standards support (802.15.4), over-the-air-programming and cross development tools.
- **Server Gateways:** Middleware for connecting wireless sensor networks to enterprise information and management systems.
- **User Interface:** Client application for remote analysis, monitoring, management and configuration of the sensor network.

### Kit Contents

|   |
|---|
| 5 IRIS/MICAz OEM Edition Modules          |
| 5 IRIS/MICAz OEM Edition Reference Boards |
| 3 MDA300 Sensor/Data Acquisition Boards   |
| 1 MDA100 Sensor/Data Acquisition Board    |
| 1 MIB600 Ethernet Gateway                 |
| 1 Programming/Debugging Pod               |
| 1 OEM Module Programmer                   |

# Kit Components



### Reference Board

The OEM reference design board is a carrier PCB hosting the OEM module and providing antenna, batteries and a standard interface for connecting sensor boards.

### OEM Edition Module

The stamp-size **OEM processor/radio module** offers a low-power radio in the 2.4 GHz frequency band using a Direct Sequence Spread Spectrum (DSSS) radio.



### Data Acquisition Board

The **MDA300CA** is a high-performance data acquisition board with up to 11 channels of 12-bit analog input and onboard temperature and humidity sensors.

### Sensor Board

The **MDA100CB** sensor and data acquisition board has a precision thermistor, a light sensor/photocell and general prototyping area for connecting external sensors.

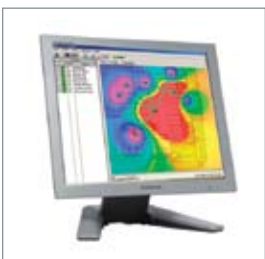


### Gateway

The **MIB600** Gateway provides an Ethernet Interface and serves as a base station connecting the wireless sensor network to the IP network.

### USB Programming Pod

The programming pod provides USB connectivity and supports programming of the OEM modules in custom hardware designs



### MoteView Client

Monitoring Software for historical and real-time charting and sensor data analysis. Provides topology map, data export capability, mote programming and a command interface to sensor networks.

### Module Programmer

The Module programmer supports programming of the stand-alone OEM modules before being placed onto the PCB.



## Ordering Information

| Model         | Description                    |
|---------------|--------------------------------|
| WSN-OEM2400CA | MICAz OEM Design Kit - 2.4 GHz |
| WSN-OEM2110CA | IRIS OEM Design Kit - 2.4 GHz  |