

# PROFESSIONAL KIT

## FOR WIRELESS SENSOR NETWORKS

- Out-of-the-box Evaluation and Development Kit for Wireless Sensor Networks
- Packaged, Pre-programmed Wireless Sensor Nodes for Temperature, Humidity, Barometric Pressure, Acceleration and Ambient Light Monitoring
- FCC and CE Certified\*
- Reliable Networking Software for Self-forming, Self-healing Mesh Networks (XMesh)
- 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 Different ISM Frequencies
  - 2.4 GHz, 802.15.4/ZigBee
  - 868/916 MHz



**The MEMSIC Professional Kit** provides a comprehensive and cost-effective platform for the evaluation and development of wireless sensor network applications either in the 2.4GHz or 868/916 MHz ISM bands. The professional kit provides all the components needed for rapidly deploying a multi-hop wireless sensor mesh network. The sensor nodes and gateway are pre-configured with MEMSIC's reliable, self-forming, self-healing mesh networking software (XMesh).

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

### MoteWorks™

The development of custom sensor applications is enabled through MEMSIC's MoteWorks™ software platform, which is available for download. MoteWorks™ is specifically optimized for low-power battery-operated networks and provides support for:

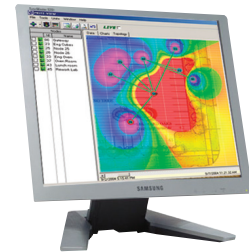
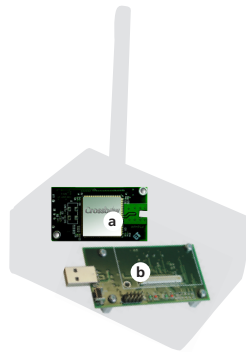
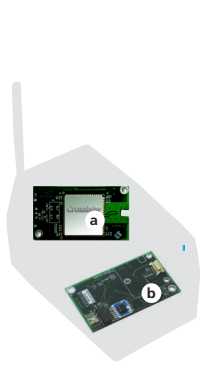
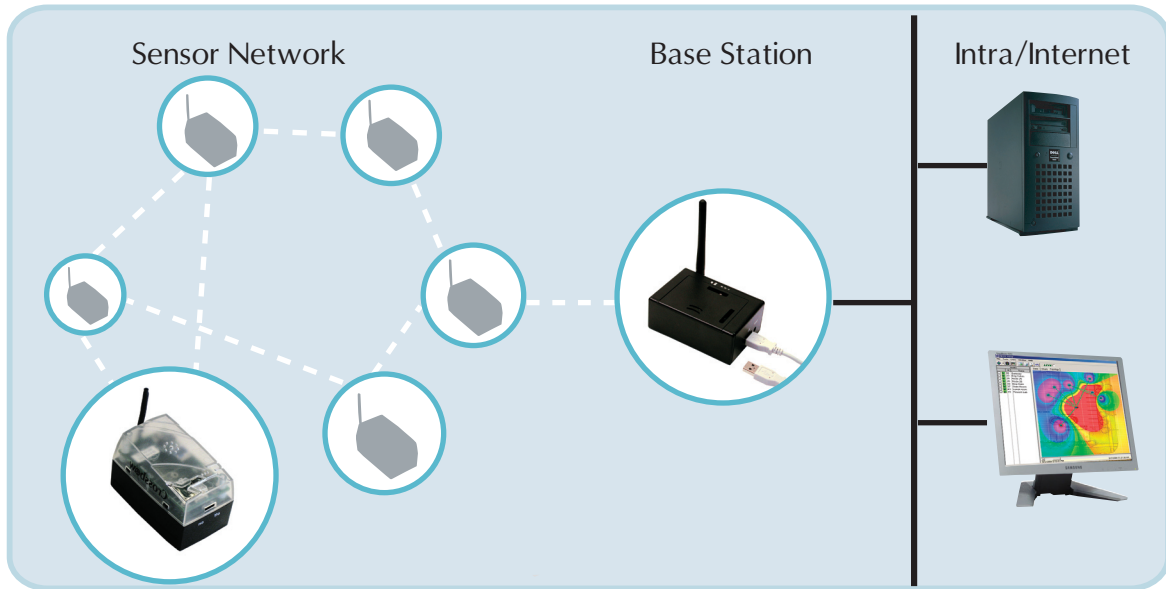
- **Sensor Devices:** Network stack and operating system, standards support (802.15.4), over-the-air-programming and cross development tools (XMesh).
- **Server Gateways:** Middleware for connecting wireless sensor networks to enterprise information and management systems (XServe).
- **User Interface:**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

## Ordering Information

Model	Description
WSN-PRO900CA	MICA2 Professional Kit - 868/916 MHz
WSN-PRO2400CB	MICAz Professional Kit - 2.4 GHz
WSN-PRO2110CB	IRIS Professional Kit - 2.4GHz

\*FCC/CE certified for 2.4 GHz. Certification pending for 868/916 MHz.

# Network Architecture



## Sensor Node

### a. Processor/Radio Board:

IRIS/MICA modules to enable the low-power wireless sensor networks measurement system. Available in 868/916 MHz or 2.4 GHz.

### b. Sensor Board:

MTS400 multi-sensor board including temperature, humidity, barometric pressure, acceleration and ambient light sensing capabilities.



### Data Acquisition Board:

MDA300 is a high performance data acquisition board with up to 11 channels of 12-bit ADC analog input and onboard temperature and humidity sensors.

## Base Station

### a. Processor/Radio Board:

IRIS/MICA module functioning as a base station when connected to the USB PC interface.

### b. USB PC Interface Board:

MIB520 Gateway provides a USB Interface for data communications.



### USB Programming Board:

MIB520 provides a USB interface for data communications.

## Monitoring Software

### MoteView Client:

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

### Kit Contents

6 Sensor Nodes (SN21140 / SN24040 / SN9040)
1 Base Station (BU2110 / BU2400 / BU900)
1 Processor/Radio Board
1 Data Acquisition Board (MDA300)
1 USB Programming Board (MIB520)
1 WSN Kit CD