










# PRODUCT FEATURE REFERENCE

## SENSORS AND FUNCTIONS

### Mote Processor/Radio Platforms

|                           | MPR2400   | MPR400  | MPR410                   | MPR420                   | MPR500                   | MPR510  | MPR520                   | MPR2600   | MPR600  |
|---------------------------|---|---|--------------------------|--------------------------|--------------------------|---|--------------------------|---|---|
| <b>Features</b>           |  |  |                          |                          |                          |  |                          |  |  |
| <b>Frequency Range</b>    | 2400-2483.5 MHz   | 868-870; 902-928 MHz  | 433-434.8 MHz            | 313.9-316.1 MHz          | 868-870; 902-928 MHz     | 433.1-434.8 MHz   | 313.9-316.1 MHz          | 2400-2483.5 MHz   | 868-870; 902-928 MHz  |
| <b>Processor</b>          | Atmel ATmega 128L   | Atmel ATmega 128L   | Atmel ATmega 128L        | Atmel ATmega 128L        | Atmel ATmega 128L        | Atmel ATmega 128L   | Atmel ATmega 128L        | Atmel ATmega 128L   | Atmel ATmega 128L   |
| <b>Radio Transceiver</b>  | 802.15.4 Compliant DSSS   | FSK Frequency Selectable  | FSK Frequency Selectable | FSK Frequency Selectable | FSK Frequency Selectable | FSK Frequency Selectable  | FSK Frequency Selectable | 802.15.4 Compliant DSSS   | FSK Frequency Selectable  |
| <b>Nonvolatile Memory</b> | Atmel AT45DB41B (512 kB)  | Atmel AT45DB41B (512 kB)  | Atmel AT45DB41B (512 kB) | Atmel AT45DB41B (512 kB) | Atmel AT45DB41B (512 kB) | Atmel AT45DB41B (512 kB)  | Atmel AT45DB41B (512 kB) | Atmel AT45DB41B (512 kB)  | Atmel AT45DB41B (512 kB)  |




### Sensor Data Acquisition Boards

|  | MDA300  | MDA320  | MDA100  | MTS300  | MTS310   | MTS400  | MTS420  | MTS510  | MDA500  |
|--|---|---|---|---|--|---|---|---|---|
| <b>Features</b>                        |  |  |  |  |  |  |  |  |  |
| <b>Accelerometer (2 Axis)</b>          |   |   |   |   | •  | •   | •   | •   |   |
| <b>Actuator Relays</b>                 | •   |   |   |   |  |   |   |   |   |
| <b>Ambient Light</b>                   |   |   |   |   |  | •   | •   |   |   |
| <b>Barometric Pressure &amp; Temp.</b> |   |   |   |   |  | •   | •   |   |   |
| <b>Buzzer</b>                          |   |   |   | •   | •  |   |   |   |   |
| <b>External Analog Sensor Inputs</b>   | • (12-bit)  | • (16-bit)  | • (10-bit)  |   |  |   |   |   | •   |
| <b>GPS</b>                             |   |   |   |   |  |   | •   |   |   |
| <b>GPIO</b>                            | •   | •   | •   |   |  |   |   |   |   |
| <b>Magnetic Field</b>                  |   |   |   |   | •  |   |   |   |   |
| <b>Microphone</b>                      |   |   |   | •   | •  |   |   | •   |   |
| <b>Photo-sensitive Light</b>           |   |   |   |   |  | •   | •   |   |   |
| <b>Photoresistor</b>                   |   |   | •   | •   | •  |   |   | •   |   |
| <b>Rel Humidity &amp; Temperature</b>  | •   |   |   |   |  | •   | •   |   |   |
| <b>Thermistor</b>                      |   |   | •   | •   | •  |   |   | •   |   |



## Gateways and Network Interfaces

|                              | MIB510   | MIB520   | MIB600   | SPB400  |
|------------------------------|--|--|--|---|
| <b>Features</b>              |   |                         |                        |  |
| <b>Description</b>           | Serial Port Programmer   | USB Programmer   | Ethernet Port Programmer   | Stargate, XScale Platform   |
| <b>Mote/Board Connectors</b> | <ul style="list-style-type: none"> <li>· MICA, MICA2, MICAz</li> <li>· MICA-sensor boards</li> <li>· MICA2DOT</li> </ul> | <ul style="list-style-type: none"> <li>· MICA, MICA2, MICAz</li> <li>· MICA2DOT (with MPC100)</li> </ul> | <ul style="list-style-type: none"> <li>· MICA, MICA2, MICAz</li> <li>· MICA2DOT (with MPC100)</li> </ul> | MICA2, PCMCIA, MICAz, USB, RS-232, Compact Flash, RS-232, Ethernet                  |
| <b>Programming Port</b>      | Serial (RS-232)  | USB  | Ethernet   | With host PC: RS-232 or Ethernet (using ssh)  |
| <b>Data Port</b>             | Serial (RS-232)  | USB  | Ethernet   | Various   |

## Wireless Sensor End User Systems

|                                       | MEP410  | MEP510  | MSP410  |
|---------------------------------------|---|---|---|
| <b>Features</b>                       |  |  |  |
| <b>Ambient Light</b>                  | ●   |   |   |
| <b>Barometric Pressure</b>            | ●   |   |   |
| <b>Buzzer</b>                         |   |   | ●   |
| <b>Magnetic Field</b>                 |   |   | ●   |
| <b>Microphone</b>                     |   |   | ●   |
| <b>Photo-sensitive Light</b>          | ●   |   |   |
| <b>PIR</b>                            |   |   | ●   |
| <b>Rel Humidity &amp; Temperature</b> | ●   | ●   |   |

## Research Platforms

|                           | TELOSB  | MCS410 (Cricket)  |
|---------------------------|---|---|
| <b>Features</b>           |  |  |
| <b>Required Range</b>     | 2400-2483.5 MHz   | 433-434.8 MHz   |
| <b>Processor</b>          | Texas Instruments MSP430  | Atmel Atmega 128L   |
| <b>Radio Transceiver</b>  | 802.15.4 Compliant DSSS   | FSK Frequency Selectable  |
| <b>Nonvolatile Memory</b> | Atmel AT45DB41B (512 Kb)  | Atmel AT45DB41B (512 Kb)  |
| <b>Light</b>              | ●<br>(2420 only)  |   |
| <b>Ultrasonic / Range</b> |   | ●   |
| <b>Temperature</b>        | ●<br>(2420 only)  |   |
| <b>Humidity</b>           | ●<br>(2420 only)  |   |