

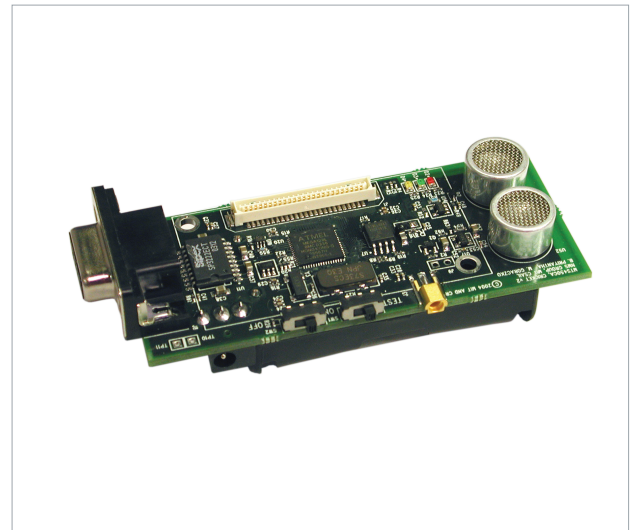
MCS410

CRICKET WIRELESS LOCATION SYSTEM

- High Performance MICA2 Wireless Location System
- Ultrasound Transmitter and Receiver for Time of Flight Ranging
- Centimeter Level Accuracy/Resolution with Decentralized and Scalable Operation
- Embedded or External Antenna Option

Applications

- Indoor Location System
- Ubiquitous Computing
- Asset and People Tracking
- Ultrasound Location Research



MCS410CA

The MCS410CA, Cricket Mote, is a location aware version of the popular MICA2 low-power Processor/Radio module. The Cricket Mote includes all of the standard MICA2 hardware and an Ultrasound transmitter and receiver. This device uses the combination of RF and Ultrasound technologies to establish differential time of arrival and hence linear range estimates.

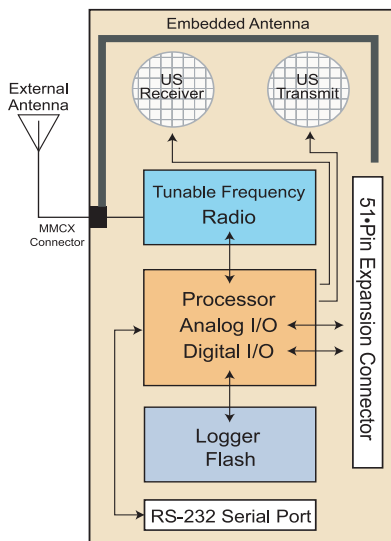
Cricket Mote modules can be configured as both Listeners and Beacons. Beacons are placed throughout a building or facility and transmit concurrent RF and Ultrasound pulses. Listeners are attached to mobile devices and listen for RF signals. Upon receipt of the Beacon RF signal, the Listener then listens for the corresponding ultrasonic pulse. When this pulse arrives, the Listener obtains a distance estimate for the corresponding Beacon by taking advantage of the difference in propagation speed between RF and Ultrasound (speed of

sound). The Listener runs algorithms that correlate RF and Ultrasound samples to pick the best correlation. Even in the presence of several competing Beacon transmissions, the Cricket Mote rapidly achieves impressive precision and accuracy.

Also known as the Cricket V2, the MCS410CA Mote module was developed via joint design collaboration between Crossbow Technology and MIT. Using the same processor and radio components found on a standard 433 MHz MICA2 (MPR410), the MCS410CA offers the additional functionality of a direct connect RS-232 serial port.

More information on Cricket can be obtained at:
Cricket.csail.mit.edu

More information on TinyOS can be obtained at:
Webs.cs.Berkeley.edu



MCS410CA Block Diagram

Ordering Information

Model	Description
MCS410CA	433 MHz Cricket Mote Platform