

Motion Sensor Module

Motion sensor

The motion sensor module is comprised of a Panasonic passive infrared motion sensor (AMN41121) and a 3V watch battery (CR2032). The sensor detects changes infrared radiation which occur when there is movement by a person or object which is different in temperature from the surroundings.

Motion sensor module output

The output of the module can be plugged into a separate Telos mote using a sub-mini mono jack. The inside conductor is the signal while the outside conductor is ground. The module outputs a digital high of around the battery voltage when motion is detected; otherwise, the output is low (20mV ~ 150mV). When connected to a Telos mote, the pin stays “not low” for approximately two seconds without additional external capacitances or resistances. This behavior can be adjusted by adding resistors or capacitor to the component board inside this module.

Power

The CR2032 cell contains approximately 230mAh of energy. The motion sensor uses approximately 46uA of current when idle and uses approximately 100uA of current when sensing motion. Assuming the sensor detects motion 10% of the time, the battery will last approximately six months.

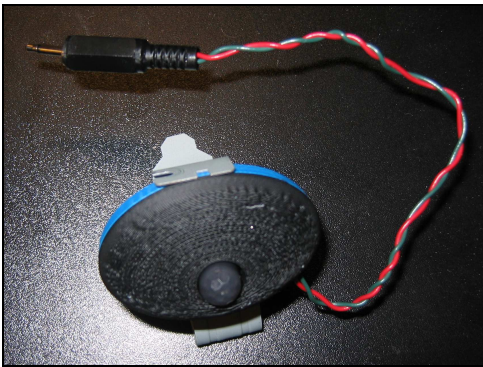


Figure 1 Motion sensor module