**Introduction**

This ear tag is a simple replacement for a regular sheep tag and will help prevent predation. The tag will turn on during crepuscular hours. When activated it flashes a light to scare predators.

**Microcontroller**

Texas Instrument Ultra low power MSP430G2553

The microcontroller is the brain of the ear tag.

**Real Time Clock**

Maxim Integrated DS1339 I2C Serial Real-Time Clock

The real time clock keeps track of time and is used to run each of the modes on the ear tag.

**Prototype Ear Tag**

**Vibration Sensor**

Vibration sensor switch SW-18010P

This sensor triggers as the sheep is running.

**LED**

Super bright white LED

The LED flashes for five minutes scaring away the predators. Then shuts off for twenty minutes.

**Operational Modes**

**Active Power Mode**

During crepuscular hours, detects sheep running, turns on and turns off light

**Low Power Mode**

During non-crepuscular hours, conserves power by putting the device in sleep mode.

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**Block Diagram**

- Real Time Clock
- Vibration Sensor
- Microcontroller
- LED

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[Image: http://controlpredators.com/background.html]

[Image: http://www.hanamicronamerica.com/fullaccess/PicRaFidTagen1.jpg]

[Image: https://upload.wikimedia.org/wikipedia/commons/d/d1/Twilight_description_full_day.svg]