Product Description

The Zigbee UWS or Universal Weight Sensor is designed to detect and report occupancy of a bed or chair.

Features

- Unique low-profile weight sensor
- Advanced digital signal processing algorithms
- User Tare pushbutton and LED indicators for easy configuration.

Installation

- Please familiarize yourself with the concepts of Zigbee Networking with the "Understanding Sensor Networking" paper.
- The network Coordinator and any Routers must be set up before setting up this sensor.
- Open the battery compartment and pull out the battery activation tab. The blue LED should flash briefly indicating successful power up. The green LED will blink rapidly for about 15 seconds while the sensor detection circuitry stabilizes. Close up the unit.
- For a wheeled bed leg
    o attach (place in and twist) one of the mounting plates with no serrated teeth onto the sensor head.
    o mount the sensor head in the supplied castor cup adaptor with the black plastic side facing up (the side with the attached mounting plate face down)
    o Place the castor cup under the wheel
    o Use the supplied Velcro strap to attach the sensor body to the bed, out of the way of vacuum cleaners, etc.
- For a wood chair/bed leg
    o attach one of the toothed mounting plates to the bottom of the chair leg using the supplied screw
    o attach the sensor head to the mounting plate (push in and twist)
    o Use the supplied Velcro strap to attach the sensor body to the leg, out of the way of vacuum cleaners, etc.
- For a metal chair/bed leg
    o clean the bottom of the leg
    o attach one of the non-toothed mounting plates to the bottom of the leg using the supplied double-sided tape.
    o attach the sensor head to the mounting plate (push in and twist)
    o Use the supplied Velcro strap to attach the sensor body to the leg, out of the way of vacuum cleaners, etc.
- Once the unit is mounted, with no one occupying the furniture, press the multifunction button. Each time the button is pressed the unit will Tare (zero).

Then test the unit by occupying the furniture. When the unit detects occupancy the unit will transmit this status via Zigbee (blue LED) and the green LED will flash every 5 or 6 seconds while occupied. When unoccupied the green LED will stop flashing, and the status will be reported via Zigbee.

Commissioning

- Once powered up the sensor will automatically join the Zigbee network.

Operation

In normal operation the user need not interact with the occupancy detector, as it is normally controlled remotely via Zigbee and automatically calibrates itself.
Please note that the sensor is designed to resist false occupancy, such as someone throwing a purse or small bag on a bed, or a cat jumping up on a chair. As such it may take up to a minute to finally report an occupied or unoccupied state.

Changing batteries

The device uses standard AA alkaline batteries. Always replace both batteries at the same time. Always use fresh new batteries of the same brand. The battery compartment is exposed by twisting a quarter in the slot at the end of the case, and then pulling apart. Make note of the polarity markings in the battery enclosure.

Technical Specs

Voltage	2xAA 1.5V alkaline battery
Weight sensor	0-400lbs (180kg) range
Temperature range	-10ºC to 40ºC
Enclosure	High impact ABS plastic
Communication	IEEE 802.15.4 Zigbee, 2.4GHz ISM band, +0dBi max output
Typical range indoor	30 feet (10m)
Typical range outdoor	300 feet (100m)
Zigbee profile	HA (Home Automation) OS (occupancy sensor)

Zigbee Profile

sample profile for a ZigbeeUWS device:

```
<ZigbeeDevice>
        short addr: 0x7971
        IEEE addr: 0x1e00000008000400
        type bits: 0x2
        freq bits: 0x8
        caps bits: 0x0
        servermask bits: 0x0
        complex desc. avail: 0x1
        user desc. avail: 0x1
        APS flags: 0x0
        mfg code: 0x1038
        bufsiz: : 0x50
        xfersiz: 0x0
        powermode: 0x1
        powersources: 0x4
        powersource: 0x4
        powerlevel: 0xc
        user descr: QC101600 v0.6
        language: None
        charset: None
        mfg name:
        model:
        serial#:
        device URL:
        endpoints: {2:
<ZigbeeDescriptor>
        profile: 0x104
        device: 0x107
        version: 0x0
        inClusters: [0, 3]
        outClusters: [1, 6, 1026, 1027, 1030]
        flags: 0x0
</ZigbeeDescriptor>
, 20: None}
        registered? 0
        last contact 2008-01-16 16:45:53.602245
        last LQI 67
        avg LQI  72.518955
        missed pkts 11
        attributes: {'pressure': 0,
                    'switch': 'off',
                    'occupied': False,
                    'battery voltage': 2.5,
                    'temperature': 19.5}
</ZigbeeDevice>
```

Block diagram
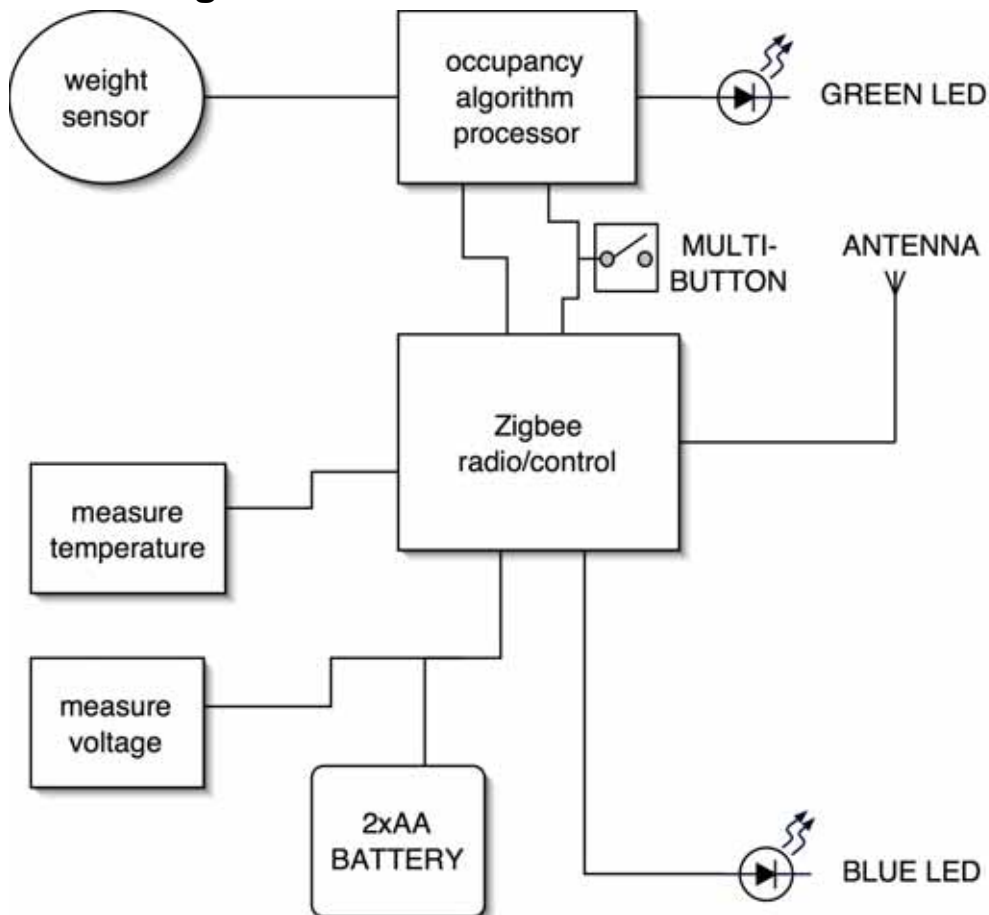
Approvals

INSTRUCTIONS TO THE USER:

The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interferences will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CE directive 93/68/EEC, EMC directive 89/336/EEC, LV directive 73/23/EEC
This class B digital apparatus complies with Canadian ICES-003

The term "IC:" before the certification/registration number only signifies that the Industry Canada technical specifications were met.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

FCC NOTE:
The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.