

X-Band Motion Detector



Overview

The X-Band Motion Detector's sensor is a common component in security systems and automatic door openers and can detect movements within a room, yard, or even on the other side of a wall.

The X-Band Motion Detector operates in the X-band frequency, at 10.525 GHz and indicates detected movements with oscillations in its high/low output. Sensitivity is manually adjustable with a potentiometer, offering direct line of sight detection from roughly 8 to slightly over 30 ft (~2.4 to 9+ m).

Key Features:

- Trim potentiometer for manually adjustable sensitivity
- 4-Pin SIP header for breadboard or through-hole prototyping
- Built-in series resistor for compatibility with the Propeller microcontroller and other 3.3 V devices
- Plated test point hole for monitoring pre-comparator signal

Application Ideas:

- Security systems
- Automatic door openers
- Automatic lighting
- Nuisance animal deterrence

Details

- Operation frequency of 10.525 GHz
- Able to detect motion through walls and windows
- More immune to false triggers than passive infrared motion sensors
- Active-high enable pin with internal pull-up resistor
- Power supply requirements: regulated 5 VDC, 8 mA
- Communication: High (3.9 V) / low (0 V) signal oscillates with motion
- Dimensions: 1.8 x 1.75 x 0.75 in (46 x 45 x 19 mm)
- Operating temp range: +32 to +131 °F (0 to +55 °C)