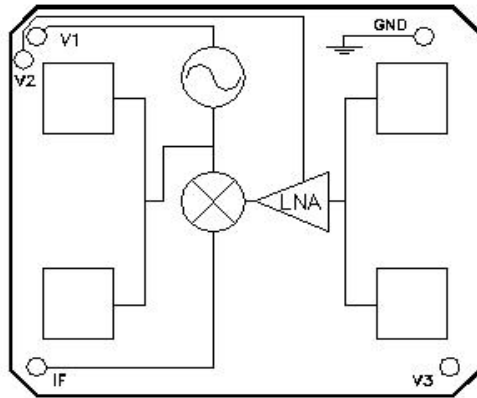


X-band Long Range Microwave Motion Sensor Module



Block Diagram and Connection



Description

HB7 Series Miniature Microwave Motion Sensor is a X-Band Bi-Static Doppler transceiver module. Its built-in Dielectric Resonator Oscillator (DRO), receiver and a pair of Micro-strip patch antenna array, make it ideal for OEM usage in motion detection equipment. The high sensitivity of the receiver gives it the capability for longer detection range.

This module is suitable for applications in movement detection and speed measurement.

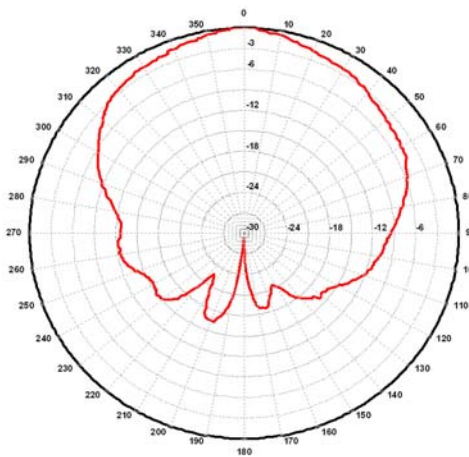
Features

- Low current consumption
- CW or Pulse operation
- Flat profile
- Long detection range

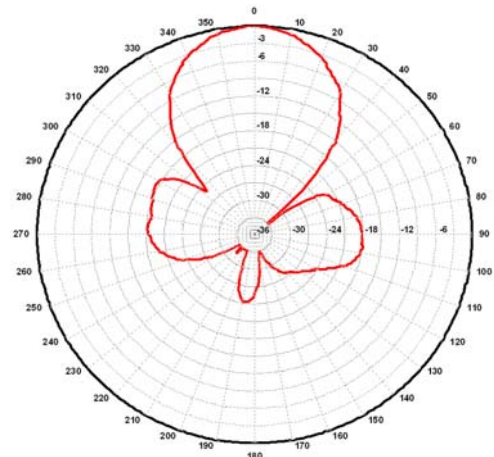
Applications

- Motion detector
- Speed measurement

Antenna Beam Pattern



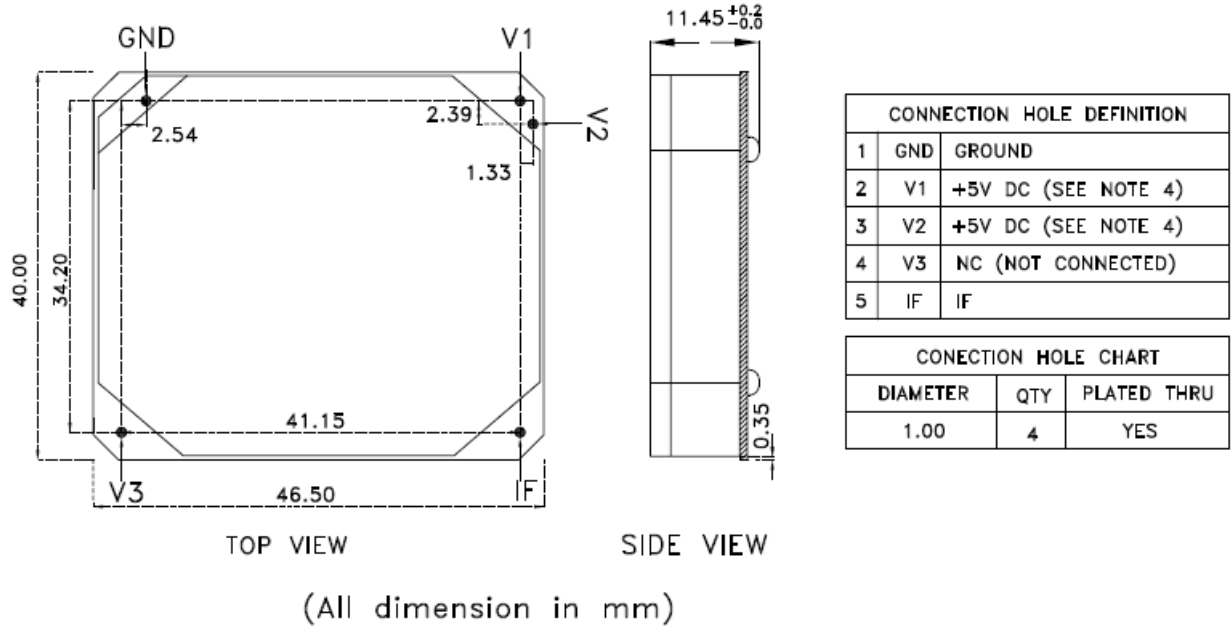
Azimuth



Elevation



Outline Diagram



Technical Specifications

Unless noted otherwise, the specifications are measured with the condition V1= +5VDC PULSE, V2=+5VDC, and 12 kΩ load at ambient temperature of +25°C.

| Parameter | Notes | Min | Typ | Max | Units |
|---------------------------------------|-------|--------|--------|--------|-------|
| Frequency Setting(HB170) | 1 | 10.520 | 10.525 | 10.530 | GHz |
| Frequency Setting(HB570) | 1 | 10.582 | 10.587 | 10.592 | GHz |
| Radiated Power (EIRP) | 1 | | 20 | | dBm |
| Spurious Emission | 1 | | | -30 | dBm |
| Settling Time | | | 3 | 6 | μSec |
| Noise | 2 | | | 5.2 | μVrms |
| Antenna Beam-width (3 dB) - Azimuth | | | 80 | | ° |
| Antenna Beam-width (3 dB) - Elevation | | | 40 | | ° |
| Supply Voltage V1 (transmitter) | | 4.75 | 5.00 | 5.25 | VDC |
| Current Consumption for transmitter | | | 25 | 30 | mA |
| Supply Voltage V2 (Receiver) | 3 | 4.75 | 5.00 | 5.25 | VDC |
| Current Consumption for Receiver | 3 | | 9 | 12 | mA |
| Pulse Repetition Frequency (V1) | 3 | | 2 | | KHz |
| Pulse Width (V1) | 3 | 10 | | | μSec |
| Operating Temperature | | -25 | | 60 | °C |
| Weight | | | 19 | | gm |

Note 1 : The radiated emissions is designed to meet the requirements of EN 300 440

Note 2 : The noise voltages are measured from 10Hz to 100Hz at the output port, inside a Anechoic chamber.

Note 3 : Pulse Operation of Transmitter (V1) for low power consumption .Pulse Operation of Receiver (V2) is not recommended.

Note 4 : The design, manufacturing process and specifications of this device are subject to change without prior notice.

Note 5 : **CAUTION: ELECTROSTATIC SENSITIVE DEVICE.** Observe precautions for handling and storage.

VER 3.00

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