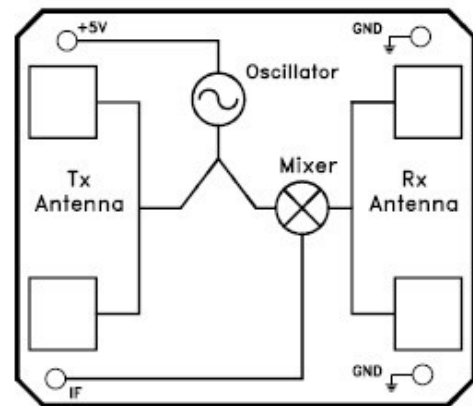


1238687



HB100 sensore di movimento a microonde 10,525GHz compatibile Arduino

L'HB100 è un sensore di movimento a microonde basato sull'effetto Doppler.

È composto da una sezione trasmittente e una ricevente.

Non appena viene alimentato il sensore invia un treno di impulsi con una frequenza di 10,525 GHz, quando viene rilevato un ostacolo, il treno di impulsi di ritorno, ricevuto dal modulo sarà maggiore o minore a seconda della distanza.

Questo sensore può essere utilizzato per l'accensione automatica di luci, apertura porte....

Portata massima 20 metri.

Specifiche Tecniche:

Trasmittitore

Frequenza di trasmissione: 10.525 GHz

Potenza di uscita (minima): 13dBm EIRP

Alimentazione: 5V ± 0.25V

Consumo: 60 mA max., 37mA tipico

Emissione armonica: <-10dBm

Ricevitore:

Sensibilità (rapporto S/N 10dB) in larghezza di banda da 3Hz a 80Hz: -86dBm

Rumore in larghezza di banda da 3Hz a 80Hz: 10µV

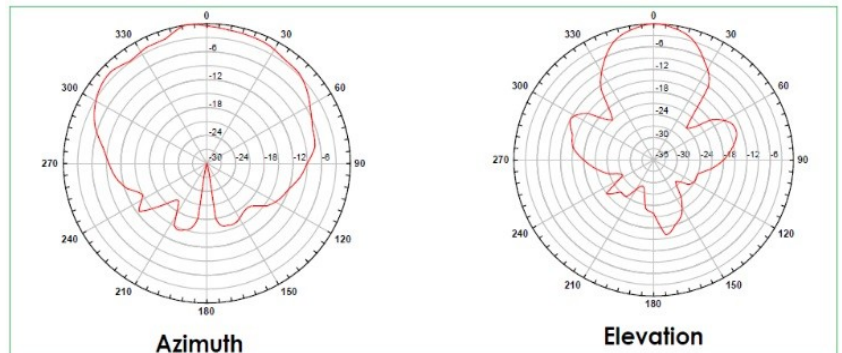
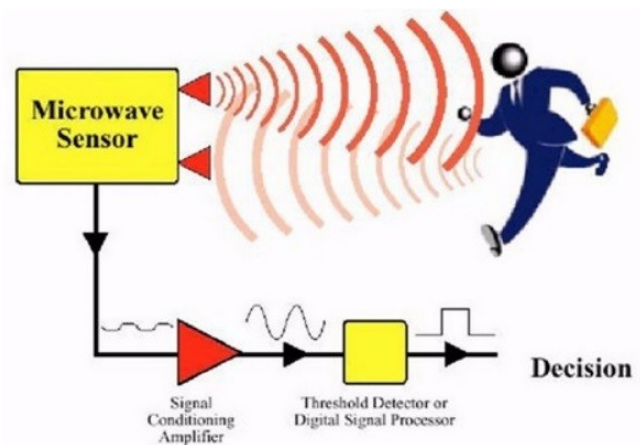
Guadagno antenna: 8dBi

Temperatura di funzionamento: -20°C a +55°C

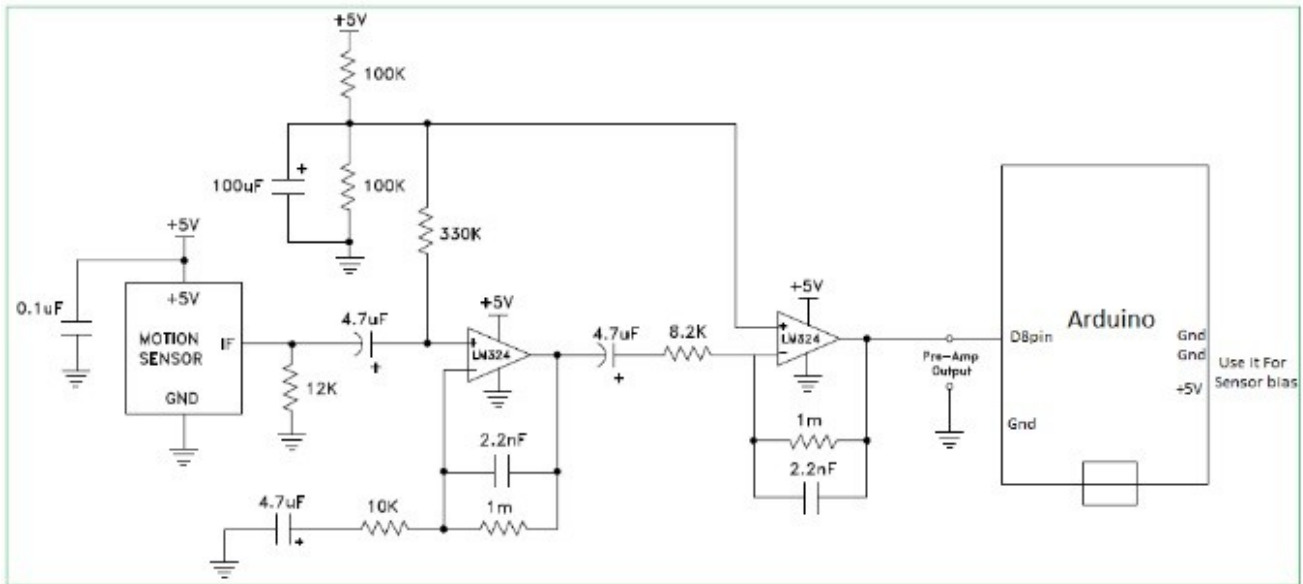
Temperatura di stoccaggio: -30°C a +70°C

Dimensioni (mm): 37x45x8

Peso: 6 grammi



Esempio di interfacciamento con Arduino



```
#include "FreqPeriod.h"

double lfrq;
long int pp;

void setup() {
  Serial.begin(9600);
  FreqPeriod::begin();
  Serial.println("FreqPeriod Library Test");
}

void loop() {
  pp = FreqPeriod::getPeriod();
  if (pp) {
    Serial.print("period: ");
    Serial.print(pp);
    Serial.print(" 1/16us / frequency: ");

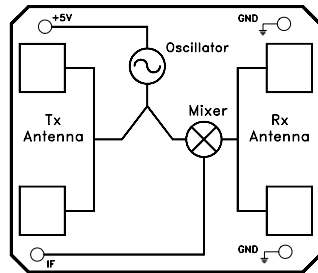
    lfrq = 16000400.0 /pp;
    Serial.print(lfrq);
    Serial.print(" Hz ");
    Serial.print(lfrq/31.36);
    Serial.println(" Mph ");
  }
}
```

Link utili:

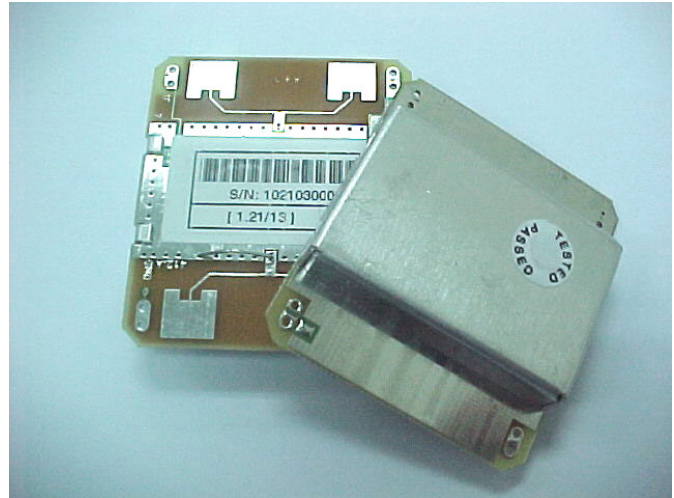
https://docs.google.com/document/d/1CVdH3UVTROaJ4_Bgsx_-hyg5_LvoNxYiB13pPRN9gzU/edit

HB 100 Microwave Sensor Module

10.525GHz Microwave Motion Sensor Module



Block diagram and connection



Description

HB100 Miniature Microwave Motion Sensor is a X-Band Bi-Static Doppler transceiver module. Its built-in Dielectric Resonator Oscillator (DRO) and a pair of Microstrip patch antenna array, make it ideal for OEM usage in motion detection equipment.

This module is ideally suitable for false alarms reduction in intruder detectors when work together with Passive Infrared (PIR) sensor. It can also be used for auto-door opening and vehicle speed measurement.

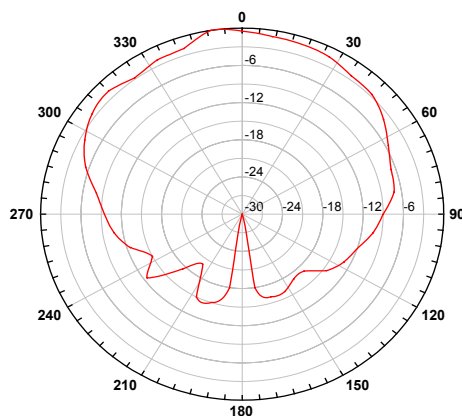
Features

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

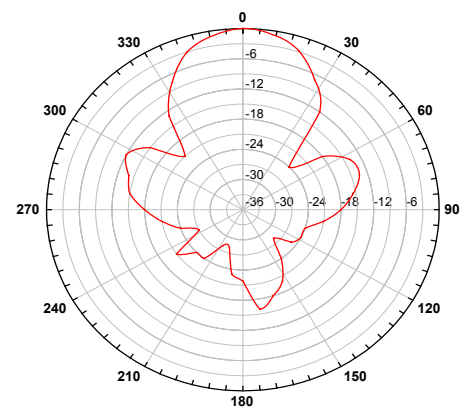
Applications

- Microwave-PIR motion detector
- Speed measurement
- Lighting control

Antenna Beam Pattern



Azimuth



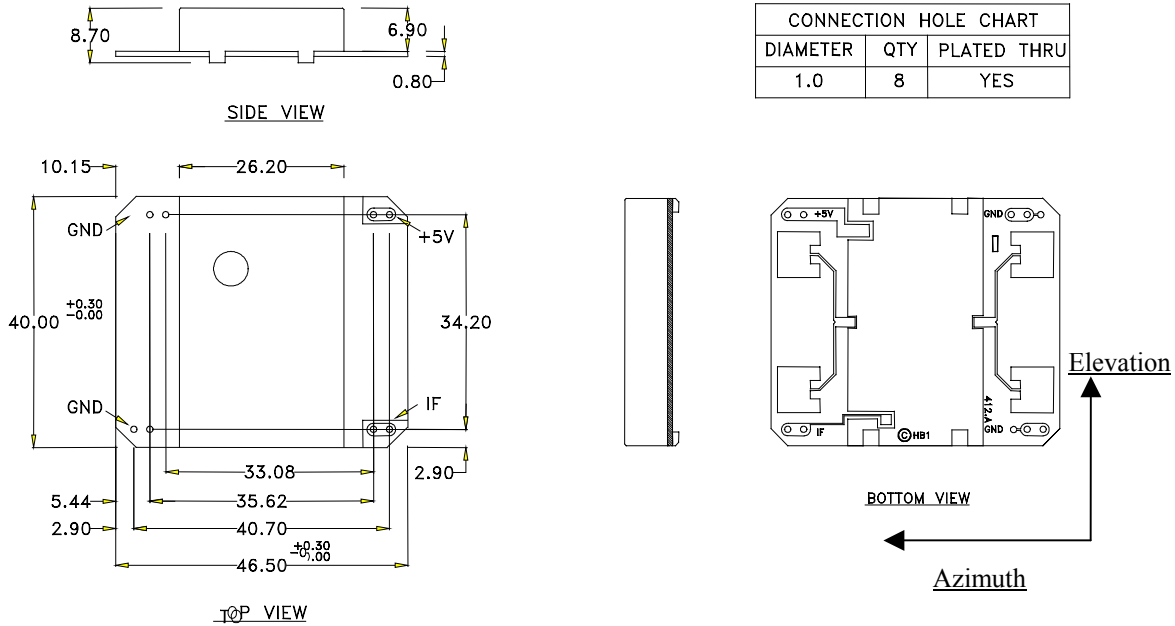
Elevation



CERT. NO. : 94-1-0033
SS ISO 9001 : 2000

Technical Specifications

Outline diagram (All dimensions in mm)



Unless noted otherwise, the specifications are measured with +5VDC, CW operation, 12 kΩ load at ambient temperature of +25°C.

Parameter	Notes	Min	Typ.	Max	Units
Frequency Setting	1	10.520	10.525	10.530	GHz
Radiated Power (EIRP)	1	12	15	20	dBm
Spurious Emission	1			-7.3	dBm
Settling Time			3	6	μSec
Received Signal Strength	2		200		μVp-p
Noise	3			5	μVrms
Antenna Beam-width (3 dB) - Azimuth			80		°
Antenna Beam-width (3 dB) - Elevation			40		°
Supply Voltage		4.75	5.00	5.25	VDC
Current Consumption			30	40	mA
Pulse Repetition Frequency	4		2		KHz
Pulse Width	4	10			μSec
Operating Temperature		-15		55	°C
Weight			8		gm

Note 1: The radiated emissions of HB100 is designed to meet the requirements of Federal Communications Commission (FCC) rules, Part 15, Section 15.245 (use within a building or to open building door)

Note 2: The Received Signal Strength (RSS) is measured at the total 2 ways path loss of 93dB.

Note 3: The noise voltages are measured from 10 Hz to 100 Hz at the output port, inside an Anechoic chamber.

Note 4: Pulse operation.

Note 5: The design, manufacturing process and specifications of this device are subjected to change without prior notice.

Note 6: **CAUTION: ELECTROSTATIC SENSITIVE DEVICE.** Observe precautions for handling and storage.

VER 1.02