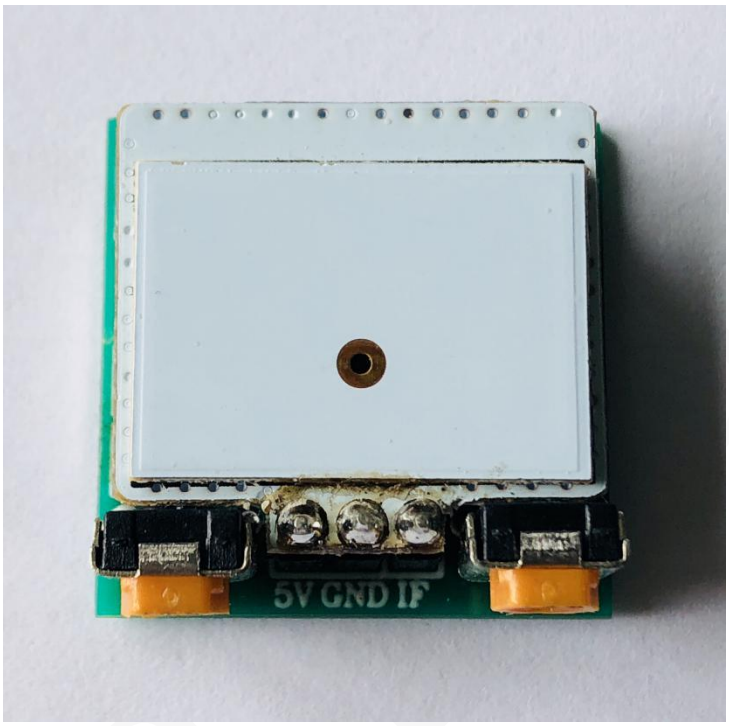
HW-XC508 microwave sensor module

SPECIFICATION



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Product Overview

HW-XC508 is the latest dual-board microwave induction module of the company. Its appearance is exquisite, the circuit structure of the product is simple and compact, the performance is stable and cost-effective, and its cost performance is high, especially suitable for other electronic appliances such as intelligent electrical appliances, security products, lighting products, etc. Secondary development of the field. This product can be widely used in security monitoring, intelligent control systems, lighting appliances (garages, corridors, roads, etc.)

Working Principle

According to the Doppler effect principle, the HW-XC508 microwave sensing module uses a planar antenna to transmit and receive high-frequency electromagnetic waves, and then detects a slight movement change of the folded-back wave, which triggers the microprocessor to work. Finally, the OUT output is 5V. High level signal.

Features

Professional 5.8G fixed-frequency plane horn antenna design, field-shaped transceiver signal, wide coverage, high consistency, low power consumption, ROHS-friendly, and strong anti-interference ability, free from temperature, humidity, airflow, dust, noise, bright Dark and other effects.

When the product is used indoors, the sensing effect is better; when it is used outdoors, the sensing distance is slightly reduced or the sensitivity is slightly weak due to the influence of the environment. This is a normal phenomenon, and the user does not have to question the product.

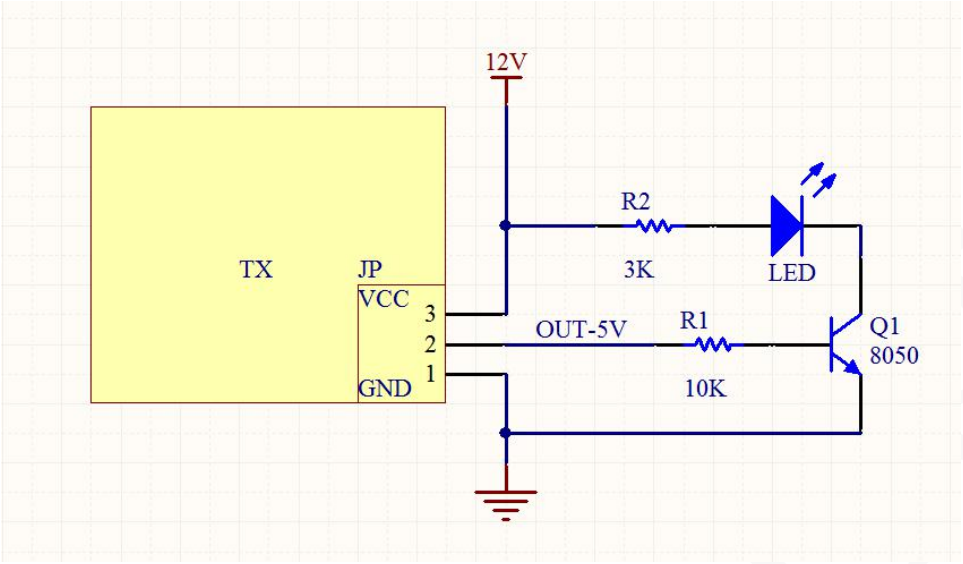
Induction time

The default repeatable trigger: after the first trigger output signal, when the sensing area is triggered again, the module delay time will be superimposed again when the first trigger time is not stopped (for example, the module trigger time is 2S, and it is accepted again in 2S). The sensing signal is superimposed 2S again, and there will always be an output signal when it is continuously triggered without interruption. Non-repeatable triggering: The sensor is triggered once, and the time is not superimposed (for example: time 2s, trigger once, output 2s, no multiple triggers are considered invalid within 2s, time is not superimposed once for 2s)

Parameter

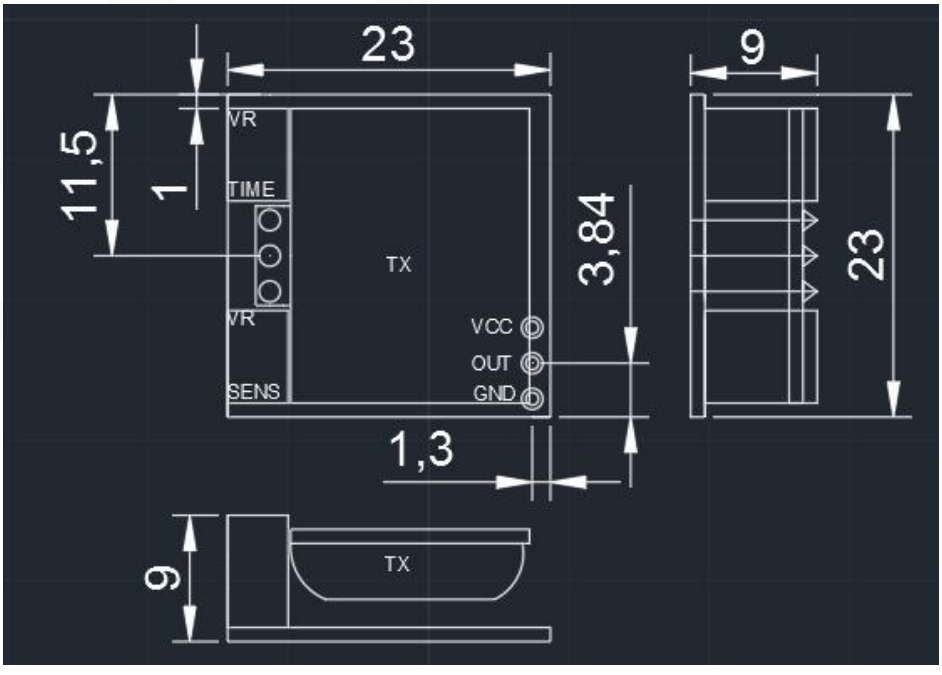
Model	HW-XC508	-----	Fixed frequency module
Input voltage VCC	DC-6V-24V / 300mA	DC:V+	Note: Please pay attention to distinguish between positive and negative+ -
Working current V/A	＜15mA	Note: Power supply is required by constant power supply	
output voltage VOUT	H:5V	L:0V	TTL（1---0）
Induction method	Doppler motion detection（SENSOR installation is not move）		
Induction time	Time:customize	2s-120s（3326）	Adjustable: with direction recognition
Induction distance	SENS:customize	0.5m-12m	Adjustable: with direction recognition
Trigger mode	Repeatable trigger (default)		Non-repeatable triggering is not supported
Radiation frequency	5.8GHz±100MHz		
Transmit power	<0.3W		
angle	90°-360°		Determined by SENS
Photosensitive	5p-1/ 3P-1	Blocked OUT when receiving light	Photosensitive sensor (default)
Operating temperature	-20~80℃		Ambient temperature
Dimensions	L23 X M22 X13		mm
port	PJ-2.54	V+ OUT GND	Output (default without connector)

Product inspection wiring diagram and CAD drawing



The product wiring diagram and CAD drawing are shown in the figure. VCC can supply DC12V, JP is XC508 output port, 2: middle output high level signal is 5V. When 2 feet output high level, Q1-NPN tube 8050 is turned on. VCC will supply power to the LED. At this time, the LED is on, indicating that the module has a signal output. When there is no signal output on pin 2, the output is in the no-signal state 0V. To test the performance of this product, you can wire it separately as shown above. This signal can be triggered later: trigger circuit - MOS tube - thyristor - relay - MCU and so on.

CAD Dimensions：



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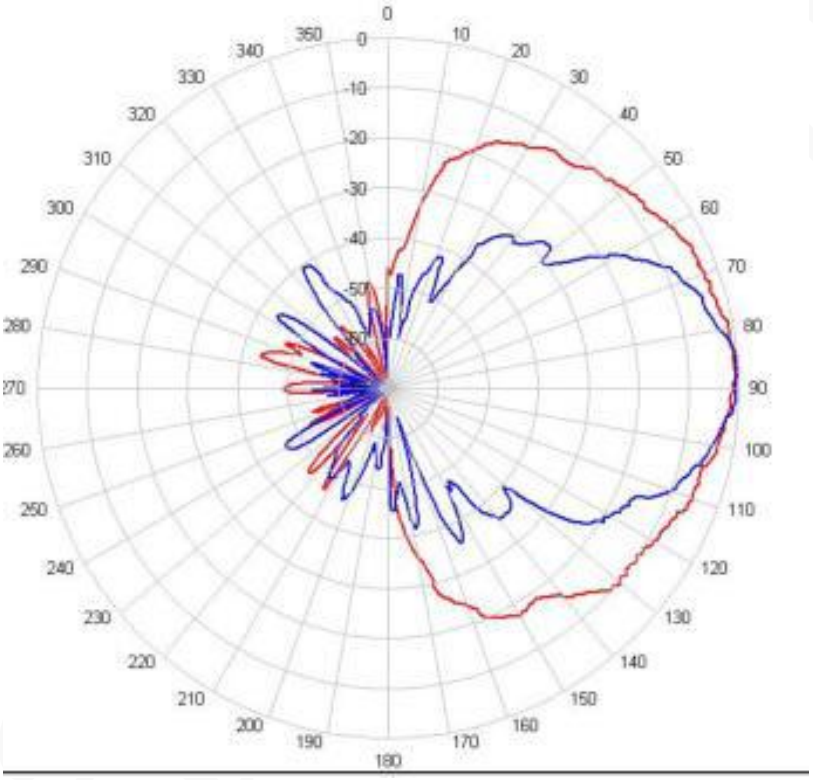
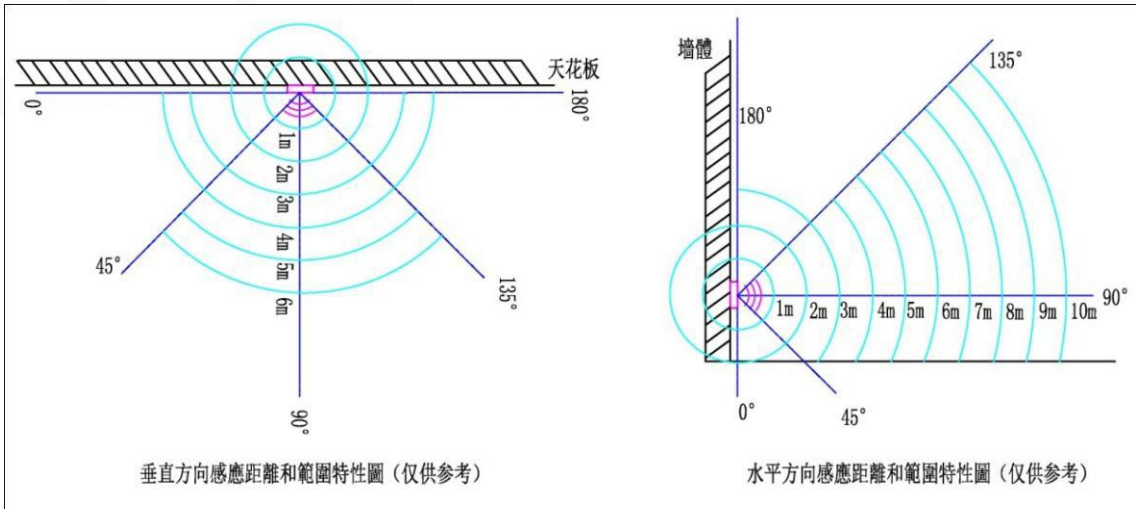
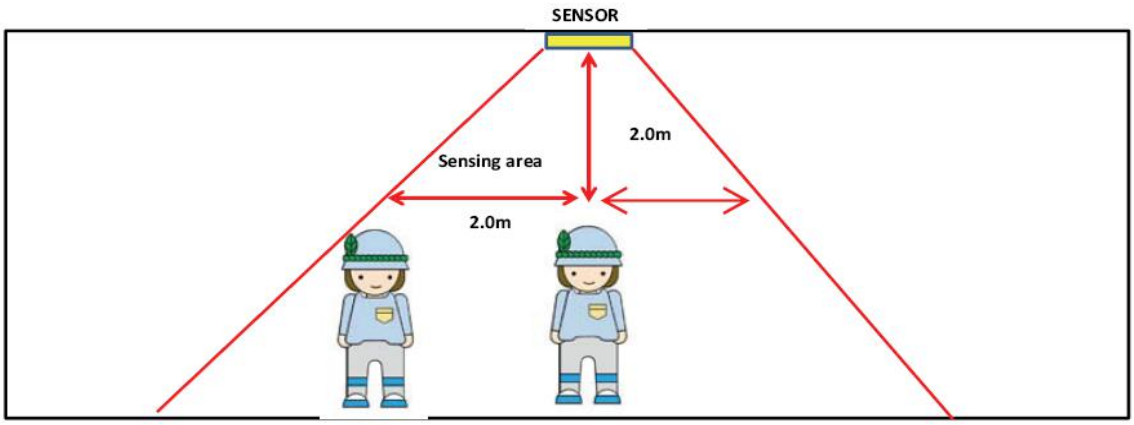
Angle and radiation pattern

As shown in the figure: the reference picture is obtained by the measuring instrument, and the actual sensing area is in the range of 100 square meters in the room. Due to the close relationship between microwave and space in Doppler radar, the actual application needs to define the detection range and angle according to the application environment (the smaller the microwave detection range is, the higher the sensitivity is, and the larger the space is, the sensitivity is relatively attenuated). This figure serves as an official guide reference, and the actual application needs to be tested according to the use environment.



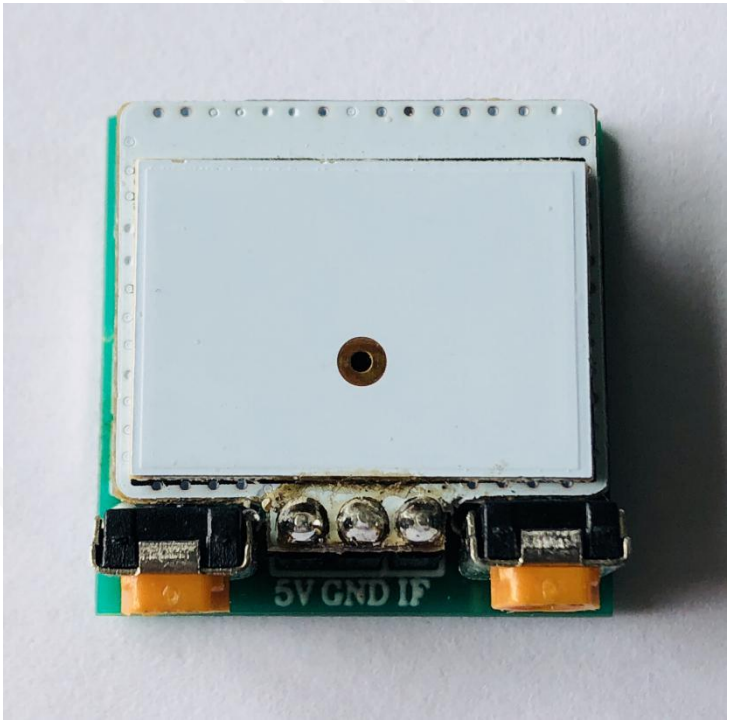


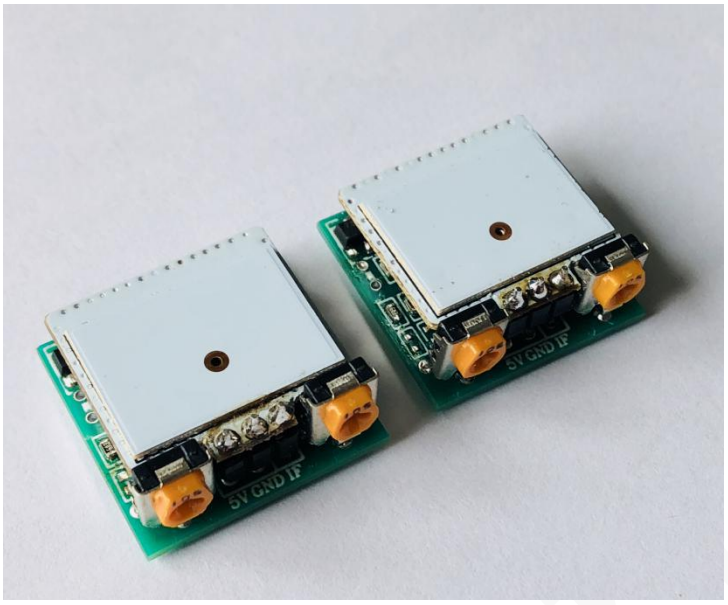


Product Picture

1.TIME potentiometer rotates clockwise, the longer the induction time, the counterclockwise rotation, the shorter the induction time

2. The SENS potentiometer rotates clockwise. The shorter the distance, the counterclockwise rotation, the longer the sensing distance. (The SENS potentiometer rotates clockwise, the sensitivity decreases, and the counterclockwise rotation increases the sensitivity.)

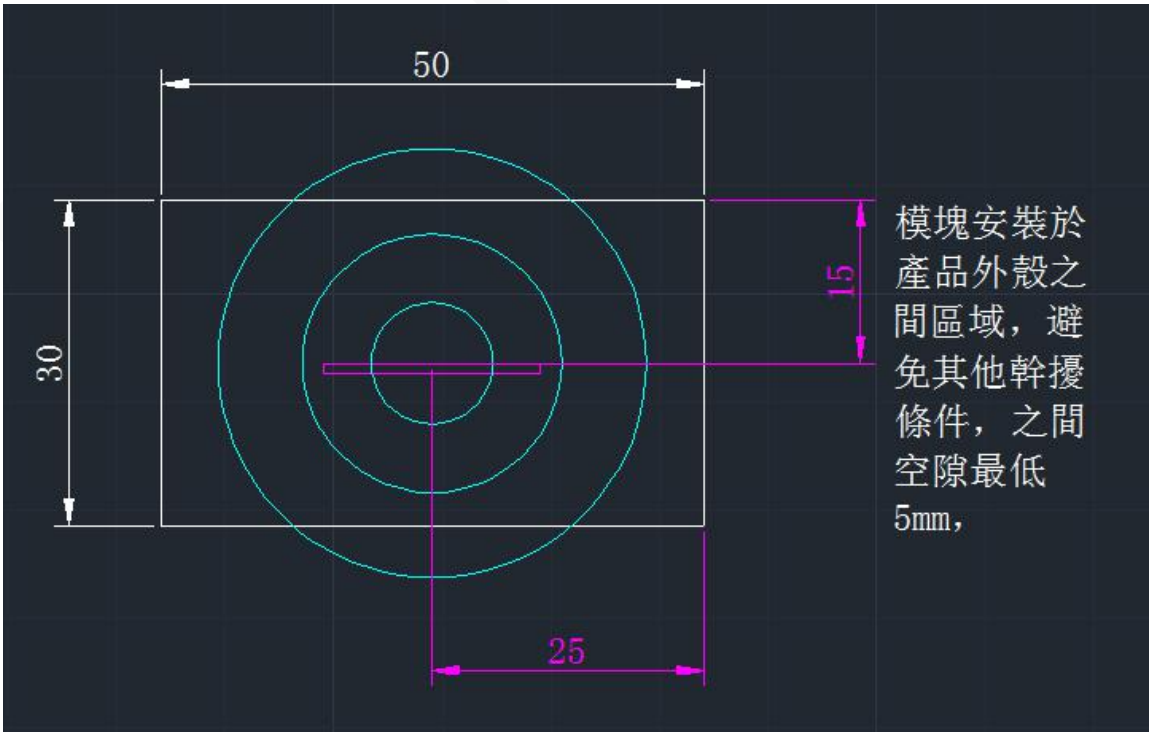




Precautions:

●About the installation process requirements of the product

When installing and testing the product, please keep the antenna board (S-shaped open PCB) of the module product at least 10mm in front of it, and never touch or touch the plane of any object, otherwise the product will not work properly.



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●About power

It is recommended to use qualified DC stabilized power supply, that is, DC power supply with output voltage, current and ripple coefficient, etc., otherwise it will affect the stability of this product, and some abnormalities may occur, such as: false alarm, no induction. , loop self-start, and so on.

●About false positives

1. To ensure the eligibility of the power supply, please refer to the first item above;

2. During the test, ensure that there are no moving objects around the product to be tested (within the sensing range);

3, about 10s initialization time after power-on, during this period is abnormal induction, may cause false positives; determined by TIME.

4. In the indoor test, the induction is relatively sensitive, the surrounding needs to be static, and the next test signal cycle is completed before the next test; when testing outdoor, be sure to pay attention to the dynamics of the surrounding environment, such as birds, Pedestrians, vehicles, etc.;

5. The signal current output by this module is very weak. When the load is directly driven, it will also cause false alarms. Please refer to the application diagram of this product for connection.

●Adjustment of working delay

There is a [time] 3326VR resistor TIME on the back of the module for changing the delay time. (If you don't need VR, please contact the relevant staff)

●Adjustment of sensing distance

There is a [distance] 3326VR resistor SENS on the back of the module, which is used to change the sensing distance. (If you don't need VR, please contact the relevant staff)

●The outer shell assembly of this product

The metal casing is not easily penetrated by microwaves and infrared rays, so this product should be avoided from being installed in a metal casing. However, such as plastic, ceramic, woody soil obstacles, the penetration effect is better. For details, please take the test as the standard.

●The mutual harmony of this product

This product has a certain mutual resonance interference, so in the effective sensing range, try to avoid two or more modules installed face to face, otherwise, it may affect your use. Please contact our relevant staff if necessary.

About Manufacturers - Shenzhen Haiwang Sensor Co., Ltd.

Shenzhen Haiwang Sensor Co., Ltd. is a high-tech enterprise integrating R&D, production, sales and after-sales service. It specializes in infrared and microwave induction technology for more than ten years. We specialize in providing various sensor components, sensitive electronic devices and intelligent devices. Series of electronic devices, such as pyroelectric infrared probes and their supporting ICs and Fresnel lenses; infrared sensing modules; microwave sensing modules; audio players, etc., and can provide product technology development and design, custom processing, technical support . Our products are widely used in lighting, public security, advertising media, traffic safety and so on.

Please pay attention to our brand [HW].

Shenzhen Haiwang Sensor Co., Ltd.