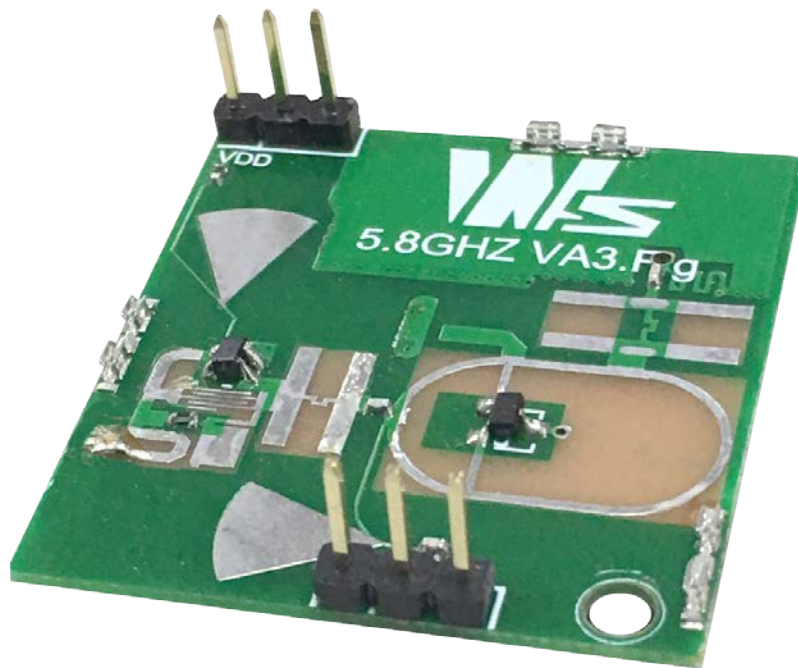


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## 5.8GHz Wireless Radar Module

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### Data Sheet Revision History

Version	Date	Changes
V1.00	Jan 23, 2018	1 <sup>st</sup> . Edition
V2.00	March 08, 2019	2 <sup>st</sup> . Edition

## ➤ Key Feature

- Operating frequency: 5.8GHz
- Dual antenna design
- Output power: 12dBm
- Detection distance: over 10m

## Application

- ▶ Security system
- ▶ Automatic power switch control
- ▶ Industrial sensors

## ➤ Function introduction

This Wireless Radar Module TRW-5.8G-B uses the Doppler effect principle to detect the frequency changes caused by the movement of personnel or articles. When the signal is detected, the output is transmitted to the MCU for detection, or the signal size is processed through the OP AMP voltage comparator.

It is simple and convenient to use, and it can achieve lower cost and higher stability than PIR (infrared body temperature detection).

## ➤ Doppler Effect

The Doppler effect is to describe the wave in space because of the source's movement and the observer's movement. It allows the observer to observe a different frequency. Which means that when the signal transmitting end is near the receiving end, its frequency will be pushed up due to its proximity, resulting in higher frequency. Conversely, the frequency of the receiving end and the transmitting end will start to pull away from the two ends, and the frequency will be reduced. This physical phenomenon is the Doppler effect.

For example, when a car travels at a very high speed, the driver finds that the red light turns green (the frequency of the red light is lower than the green light.) And the same situation happens when the observer approaches or is away from the fixed light source. When both distances are shortened, the frequency of light is higher than the light source. Conversely, it is lower.

Before the Doppler effect was discovered. We measured distance for a moving object, only enabled to use of observation to estimate the distance. After Doppler effect is applied to radar. Distance and velocity of the observed object can be calculated correctly by receiving the frequency of the reflected wave.

## ➤ Electrical Specifications

Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Frequency Range		5.8		GHz	
Output Power	8		12	dBm	
IF Output Amplitude		40		mV	VPP
Supply Voltage, VDD		5		V	DC
Current		25		mA	
Module Dimension	33*29.5*11 (including Pin)			mm	

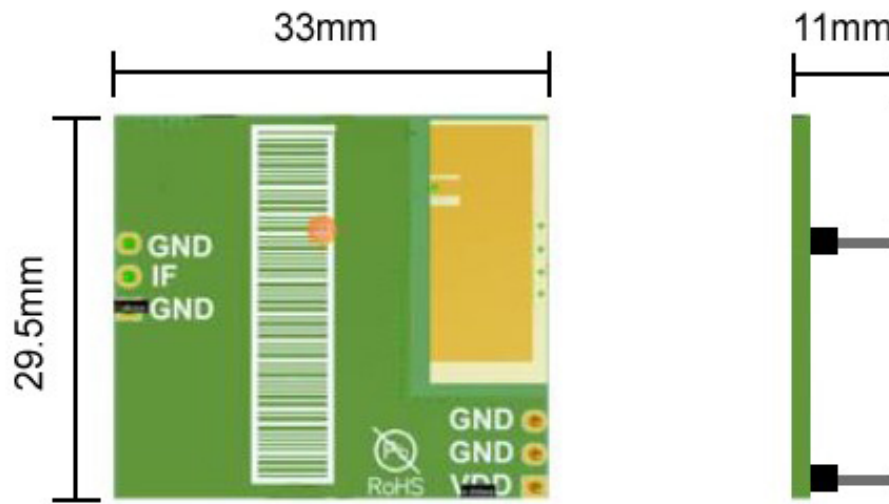
## ➤ Pin Assignment

Pin	Name	I/O	Description
1	GND	I	Ground
2	IF	O	Analog signal output
3	GND	I	Ground
4	GND	I	Ground
5	GND	I	Ground
6	VDD	Power	Power Supply DC 5V



➤ Dimension

(Unit : mm)



➤ Block Diagram

