
5.8GHz Wireless Radar Transceiver Module



Data Sheet Revision History

Version	Date	Changes
V1.00	Jan 23, 2018	First Edition

➤ Key Feature

- Operating frequency 5.8GHz
- 10dBm Output Power
- 10m Detection distance

➤ Application

- Security system
- Automatic power switch control
- Industrial sensors

➤ Function introduction

This Wireless Radar Transceiver Module TRW-5.8GHz 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 movement of the sources and the observer's movement, which 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 happens when the observer approaches or is away from the fixed light source. When both of the distance are shortened, the frequency of light is higher than that of light source, and in turn is lower.

Before the Doppler effect was discovered, we could only estimate the distance from a distant moving object by observing. After Doppler effect is applied to radar, the distance and velocity of the observed object can be calculated correctly by receiving the frequency of the reflected wave.

➤ Electrical Specifications

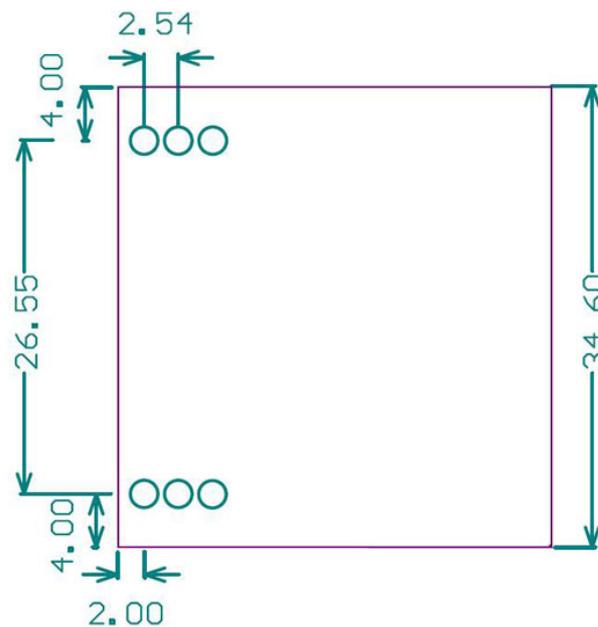
Parameter	Specification			Unit	Condition
	Min.	Typ.	Max.		
Frequency Range		5.8		GHz	
IF output Amplitude			3600	mV	VPP
Supply Voltage, VDD		5		V	DC
Current		20		mA	
Module size	34.6*33*26			mm	

➤ Pin Assignment

Pin	Description	Typical Value
1	GND	5Vdc supply
2	OUT	load 10k Ohm
3	GND	
4	NC	
5	NC	
6	NC	

➤ Size

(unit : mm)



➤ Block Diagram

