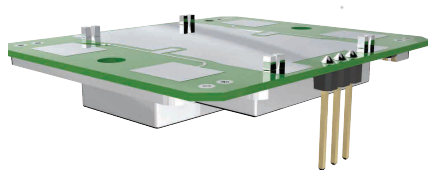


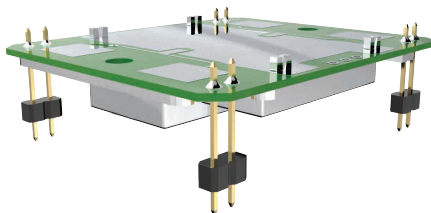


X-band Doppler Sensing Devices

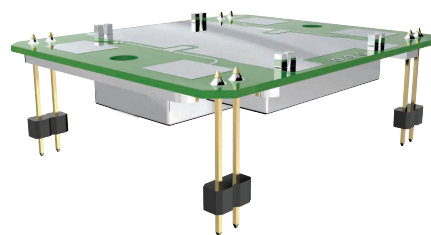
Model: PD-V9S / PD-V9-P / PD-V9-H



PD-V9S

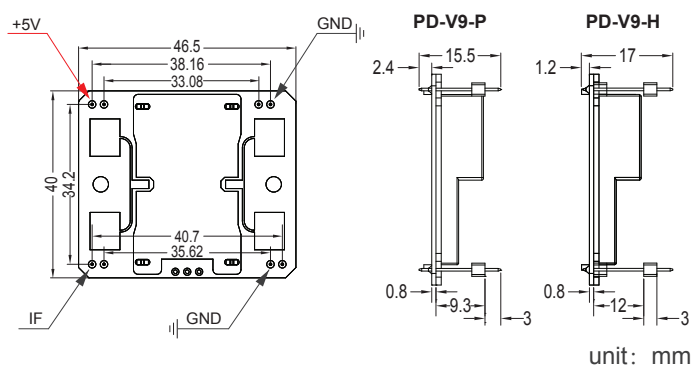
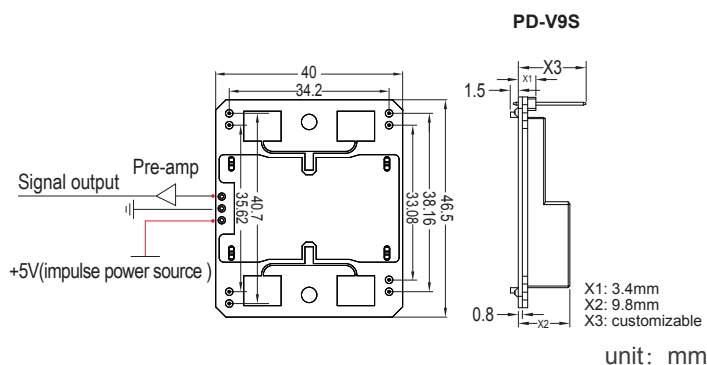


PD-V9-P



PD-V9-H

SIZE



FEATURES

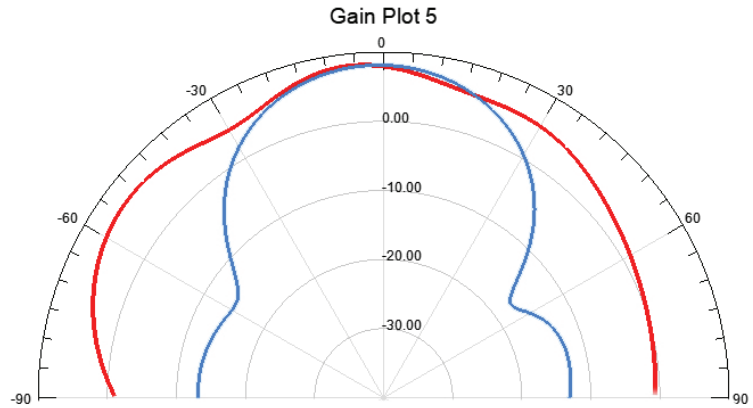
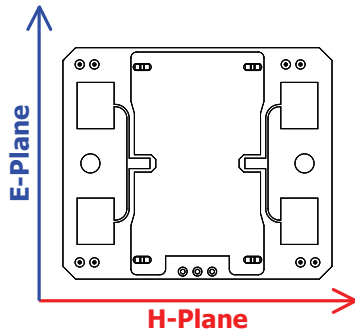
- Frequency Setting: 10.5035-10.5413GHz
- Including Patch Antenna
- DRO: Dielectric Resonator Oscilato
- Low DC Current Drain
- Small Size
- RoHS Compliance

SPECIFICATIONS

Item	Specifications	
Frequency Setting	10.5035-10.5413GHz (Customized according to different requirements)	
Condition	Ta = +25 C, Vin = +5 VDC	
Operating Voltage	+5.0 ± 0.5 VDC	
Operating Current	<32 mA typ.	
Output Power	7.5dBm (EIRP)	
Frequency Stability	±5 MHz max. (Ta: -30 to +55 C)	
Return Loss Sensitivity	-90 dBc typ.	
Second Harmonic Emission	-40 dBm range	
Antenna Beamwidth (-3 dB)	E-Plane	36 degree nom. (The oretical full angle of 72 degrees)
	H-Plane	72 degree nom. (The oretical full angle of 144 degrees)
RF Interface	Patch Antenna	
Temperature Range	-30 to +55 C (Standard usage scope), -40 to +80 C (Maximum usage range)	
Regulation for compliance	ETSI EN 300 440	

RADIATION PATTERN

Radiation Pattern (Reference data)



BRIEF INTRODUCTION

The PD-V9 series brightness sensor operates in the X-band. The operating frequency is in the frequency range of 10.5035GHz to 10.5413GHz. Users need to make purchases based on customize according to the frequency regulations of the country where it is located. The PD-V9 series sensors are widely used in security and surveillance applications products, automatic door sensors, mobile sensing lights, IoT sensors, speed sensors, and various mobile sensor products. The sensor has H-Plane large angle detection and Eplan small angle detection. Users can fix the sensor at different angles as needed during use. as if users want the working current of the sensor to be as small as possible, you can set the power supply mode of the sensor to PWM (duty cycle) mode, which can effectively reduce the working current.

POSSIBLE PROBLEMS ENCOUNTERED

When users encounter the following issues while using or directly replacing the original sensor.

1. First use:

When you are using the PD-V9 series sensor for the first time and encounter high sensitivity or insufficient sensitivity, you should first check the gain setting status of the amplification circuit. And whether the calculation method used by MCU to process signals is appropriate. Generally speaking, it is easy to find a solution.

2. Possible issues that may arise when directly replacing previously used sensors:

When directly replacing previously used sensors, there may also be issues of high sensitivity and low sensitivity, which can be easily resolved. Simply increasing the amplification circuit or decreasing the gain of the amplification circuit is sufficient. No need to consider the signal processing algorithm of MCU.

Help that beginners may need when using:

If you encounter difficulties while using the PD-V9 series sensors and need assistance. You can contact us via email. Generally speaking, answers can be obtained.

Product Introduction:

The product introduction may be modified and improved by PDLUX at any time when necessary. Not necessarily will everyone be notified in a timely manner.

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Regulatory Module Integration Instructions

2.2 List of applicable FCC rules

This device complies with part 15.245 of the FCC Rules.

2.3 Summarize the specific operational use conditions

This module can be used in household electrical appliances as well as Intelligent switch , Wall-hung switch equipments. The input voltage to the module should be nominally 5VDC ,typical value5VDC and the ambient temperature of the module should not exceed 80°C.

This module using only one kind of antennas with maximum gain.Other antenna arrangement is not covered by this certification.

The antenna is not field replaceable. If the antenna needs to be changed, the certification should be re-applied.

2.4 Limited module procedures

Not applicable

2.5 Trace antenna designs

Not applicable

2.6 RF exposure considerations

The modular transmitter is authorized to be used in a specific type of host platform and installed such that it can be operated at closer than 20 cm to users or nearby persons.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter .If the equipment built into a host as a portable usage, the additional RF exposure evaluation may be required as specified by 2.1093

2.7 Antennas

The certified antennas include: PCB pattern Antenna

2.8 Label and compliance information

The outside of final products that contains this module device must display a label referring to the enclosed module. This exterior label can use wording such as: "Contains Transmitter Module FCC ID: 2AIWW-PD-V9 ", or "Contains FCC ID: 2AIWW-PD-V9 ", Any similar wording that expresses the same meaning may be used.

2.9 Information on test modes and additional testing requirements

a) The modular transmitter has been fully tested by the module grantee on the required frequency , it should not be necessary for the host installer to re-test.

It is recommended that the host product manufacturer, installing the modular transmitter, perform some investigative measurements to confirm that the resulting composite system does not exceed the spurious emissions limits or band edge limits.

b) The testing should check for emissions that may occur due to the intermixing of emissions with the other transmitters, digital circuitry, or due to physical properties of the host product (enclosure). This investigation is especially important when integrating multiple modular transmitters where the certification is based on testing each of them in a stand-alone configuration. It is important to note that host product manufacturers should not assume that because the modular transmitter is certified that they do not have any responsibility for final product compliance.

c) If the investigation indicates a compliance concern the host product manufacturer is obligated to mitigate the issue. Host products using a modular transmitter are subject to all the applicable individual technical rules as well as to the general conditions of operation in Sections 15.5, 15.15, and 15.29 to not cause interference. The operator of the host product will be obligated to stop operating the device until the interference has been corrected

2.10 Additional testing, Part 15 subpart B disclaimer

The final host / module combination need to be evaluated against the FCC Part 15B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.

The host integrator installing this module into their product must ensure that the final composite product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation and should refer to guidance in KDB 996369.

Frequency spectrum to be investigated

For host products with certified modular transmitter, the frequency range of investigation of the composite system is specified by rule in Sections 15.33(a)(1) through (a)(3), or the range applicable to the digital device, as shown in Section 15.33(b)(1), whichever is the higher frequency range of investigation.

Operating the host product

When testing the host product, all the transmitters must be operating. The transmitters can be enabled by using publicly-available drivers and turned on, so the transmitters are active. In certain conditions it might be appropriate to use a technology-specific call box (test set) where accessory devices or drivers are not available.

When testing for emissions from the unintentional radiator, the transmitter shall be placed in the receive mode or idle mode, if possible. If receive mode only is not possible then, the radio shall be passive (preferred) and/or active scanning. In these cases, this would need to enable activity on the communication BUS (i.e., PCIe, SDIO, USB) to ensure the unintentional radiator circuitry is enabled. Testing laboratories may need to add attenuation or filters depending on the signal strength of any active beacons (if applicable) from the enabled radio(s). See ANSI C63.4, ANSI C63.10 for further general testing details.

FCC Statement

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.