

## 24.125 GHz Doppler Sensor Module, Dual Channel

### Description:

**Model SSM-24307-D1-1** is a K band Doppler sensor module that is designed and manufactured for short range measurements of a moving target's speed and direction. The sensor module has an operating frequency range of 24.05 to 24.2 GHz and takes a nominal bias of +5.0 VDC/250 mA. The sensor modules are configured with a T/R diplexer, a dual channel (I/Q) receiver and a transmitter/receiver oscillator in a die-cast housing. Sensor modules with a single receiver are offered under model number SSM-24307-S1-1 and can only detect the speed of a moving target.



### Features:

- 24.125 GHz Operation
- Low Flicker Noise and High Sensitivity
- Low Harmonic Emission
- FCC Part 15 Compliant
- RoHS Compliant

### Applications:

- Traffic Management Systems
- Microwave Fence
- Automatic Door Openers
- Automatic Production Lines

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency Range	24.050	24.125 GHz	24.200 GHz
Transmitting Power		+7 dBm	
Receiver I/Q Phase $\Delta$	60°		120°
Receiver I/Q Amplitude $\Delta$		0 dB	3 dB
IF Frequency Range	DC		100 MHz
IF Offset Voltage		$\pm 0.50 V_{DC}$	
Frequency Stability		-0.8 MHz/°C	
Power Stability		-0.03 dB/°C	
DC Supply Voltage		+5 $V_{DC}$ /250 mA	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

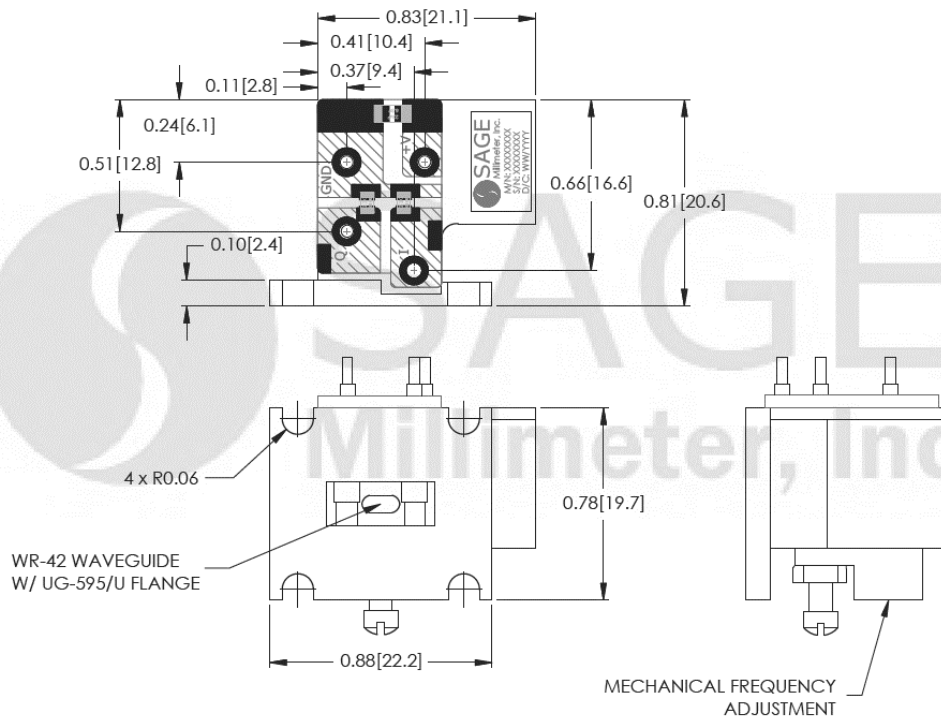


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### Mechanical Specifications:

Item	Specification
Gunn Oscillator Bias Port	Solder Pad
Varactor Tuning Port	Solder Pad
Mixer IF <sub>I</sub> Port	Solder Pad
Mixer IF <sub>Q</sub> Port	Solder Pad
Size	1.00" (W) X 0.81" (H) X 0.81" (L)
Case Material	Die Casted Zinc
Finish	Chem Film
Weight	0.8 Oz
Outline	SM-DK-D1-M

**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches [mm])



**Note:**

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

**Caution:**

- The device is static sensitive. Always follow ESD rules when working with the device.
- Wrong bias or reverse bias on the sensor will damage the device.
- Exceeding absolute maximum ratings shown will damage the device.
- Use an additional heatsink or fan if necessary.



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