



## 34.3 GHz Doppler Sensor Module, Dual Channel, Low TX Power

### Description:

**Model SSM-34300-NAC-D1** is a Ka Band, Doppler sensor module that is designed and manufactured for measurements of a moving target's speed and direction. The sensor module has a center frequency of 34.3 GHz and takes a nominal bias of +5.0 V<sub>DC</sub>/350 mA. The sensor module is configured with a T/R diplexer, a dual channel (I/Q) receiver and a TX/RX oscillator in an integrated die-cast housing. The sensor module is configured for a circular waveguide with 0.250" diameter interface for SAGE Millimeters' custom designed horn antennas or lens corrected antennas with 9/16-24 thread mechanical configurations. The sensor supports a circular polarized waveform. Sensor modules with a single receiver are offered under model number SSM-34300-NAC-S1 and can be used for detecting the speed of a moving target.



### Features:

- 34.3 GHz Operation
- Low Flicker Noise and High Sensitivity
- Low Harmonic Emission

### Applications:

- Traffic Management Systems
- Law Enforcement
- Military Surveillance Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Polarization	Right-Handed Circular		
Receiver Conversion Loss		10 dB	
RF Frequency		34.3 GHz	
Transmitting Power		-3 dBm	
Receiver I/Q Amplitude $\Delta$		$\pm 1.5$ dB	
Receiver I/Q Phase $\Delta$	80°		100°
IF Frequency Range	DC		100 MHz
IF Offset Voltage		$\pm 0.1$ V <sub>DC</sub>	
Frequency Stability		-0.8 MHz/°C	
Power Stability		-0.03 dB/°C	
DC Supply Voltage		+5 V <sub>DC</sub> /350 mA	+5.5 VDC
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C



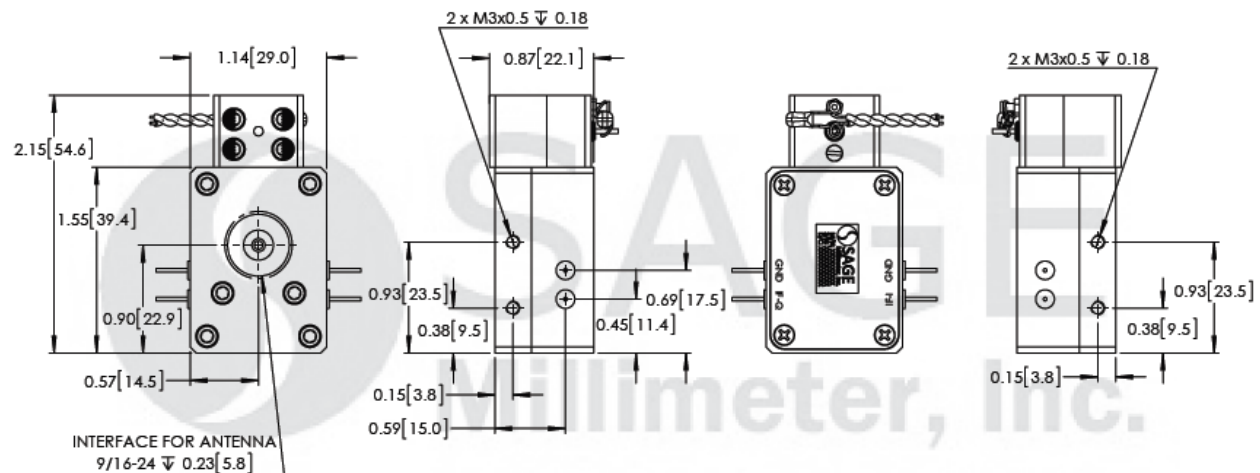


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### Mechanical Specifications:

Item	Specification
Antenna Interface	0.250" Diameter Circular Waveguide with 9/16-24 thread
Gunn Oscillator Bias Port	Red Wire
Mixer IF Port, I Channel	Solder Pin
Mixer IF Port, Q Channel	Solder Pin
IF Ground	Solder Pin
Common Ground	Black Wire
Size	1.14" (W) X 0.87" (L) X 2.15" (H)
Material	Aluminum
Finish	Chem Film
Weight	2.1 Oz
Outline	SM-NAC-D-G

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



### 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 additional heatsink or fan if necessary.

