

35 GHz Doppler Sensor Head, Dual Channel, Medium Range

Description:

Model SSS-35307-23IC-D1 is a Ka Band, waveguide slotted array antenna-based Doppler sensor head that is designed and manufactured for **medium range** measurements of a moving target's speed and direction. The sensor head has a center frequency of 35 GHz and takes a nominal bias of +5.0 VDC/250 mA. The sensor heads are configured with a circular polarized, integrated waveguide slotted array antenna, a T/R diplexer, a dual channel (I/Q) receiver and a transmitter/receiver oscillator in an integrated housing. Sensor head with a single receiver is offered under model number **SSS-35307-23IC-S1** and can only detect the speed of a moving target.



Features:

- 35 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
Antenna 3 dB Beamwidth		4° (H) x 10° (V)	
Antenna Side Lobes		-15 dBc	
Antenna Gain		23 dBi	
Antenna Polarization	Right Hand Circular		
RF Frequency Range*	34.00 GHz	35.00 GHz	36.00 GHz
Transmitting Power		+7 dBm	
Receiver I/Q Phase Δ	80°		100°
Receiver I/Q Amplitude Δ		0 dB	2 dB
IF Frequency Range	DC		100 MHz
IF Offset Voltage		$\pm 0.1 V_{DC}$	
Frequency Stability		-0.8 MHz/°C	
Power Stability		-0.03 dB/°C	
DC Supply Voltage		+5 V _{DC} /250 mA	+5.5 V _{DC}
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

*The operation frequency of the standard model is factory set at 35 GHz. However, the customer may specify the exact frequency in the range of 34 to 36 GHz when placing the order.



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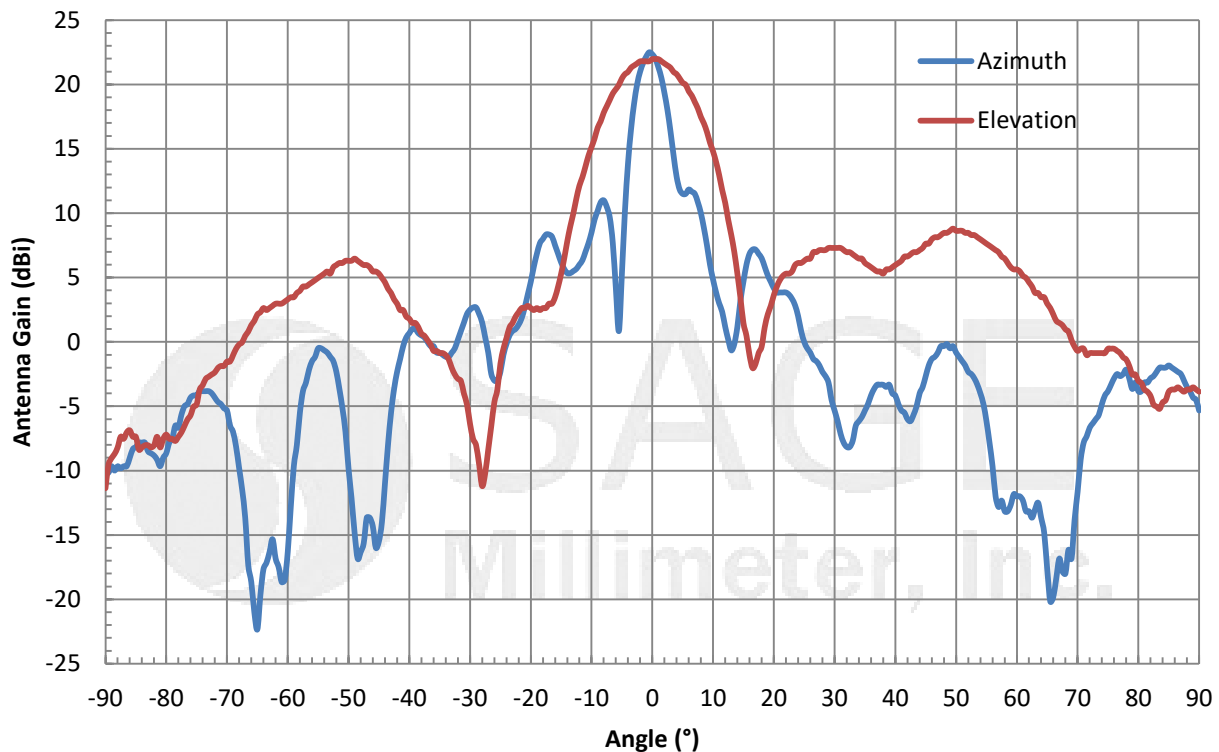


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Mechanical Specifications:

Item	Specification
Gunn Oscillator Bias Port	Red Wire
Mixer IF _I Port	Solder Pin
Mixer IF _Q Port	Solder Pin
IF Ground	Solder Pin
Common Ground	Solder Pad
Size	5.00" (W) X 1.70" (L) X 1.22" (H)
Material	Aluminum
Finish	Chem Film
Weight	4.5 Oz
Outline	SS-WCA-23D

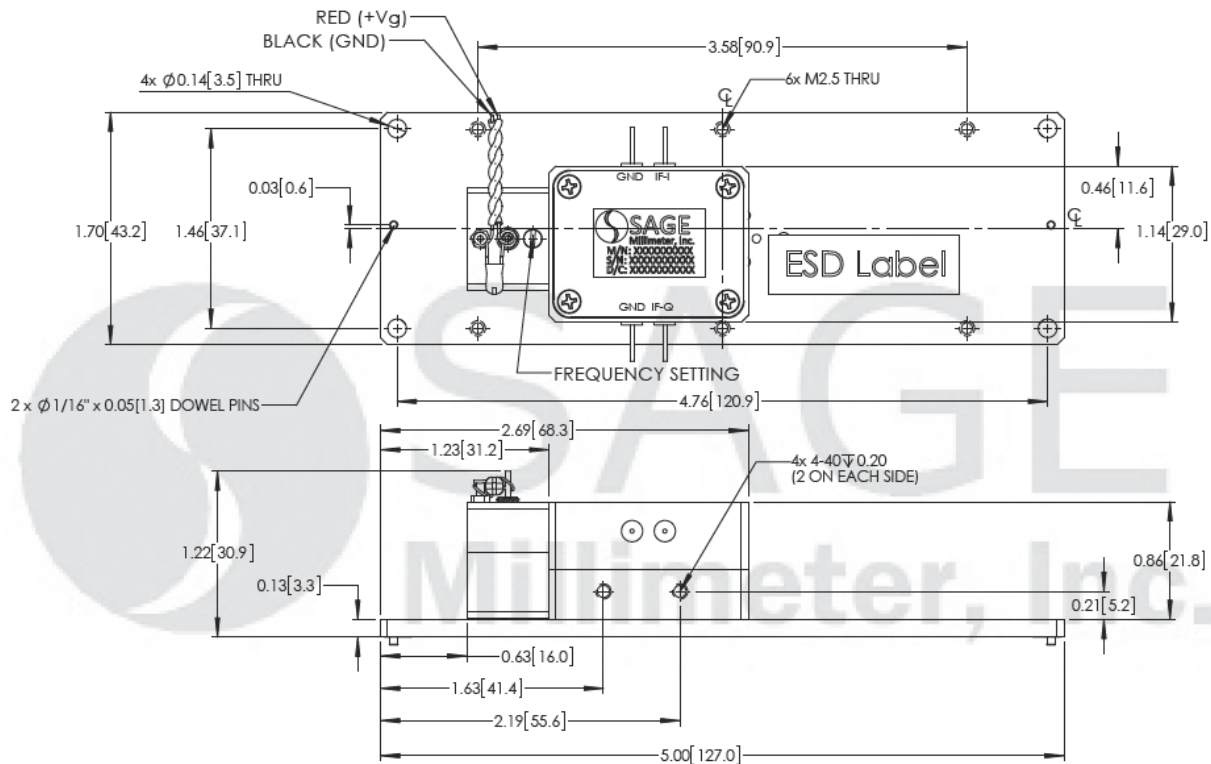
Typical Radiation Pattern @ 35 GHz





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Mechanical Outline: (Unless otherwise specified, all dimensions are in inches)



Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25°C case temperature.
- 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.

