



## W-Band Receiver, 90 to 96 GHz, 4 dB NF, 30 dB Gain, Image Rejection

### Description:

**Model SSR-9330634030-10-M1-I** is a W-Band image rejected receiver. The receiver has a typical conversion gain of 30 dB with a typical RF input power of -60 dBm in the frequency range of 90 to 96 GHz and an IF output frequency range of 5 to 11 GHz. The receiver has a built-in x8 multiplier which requires a typical input LO power and frequency of +5 dBm and 10.625 GHz, respectively. With the built-in IF hybrid, the receiver typically offers a 20 dB image rejection level. The LO and IF port are both equipped with female SMA connectors and the RF port is a WR-10 waveguide with a UG-387/U-M flange.



### Features:

- Compact Size
- Low Noise Figure
- Fully Integrated Module

### Applications:

- Radar Systems
- Communication Systems
- Passive Camera Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Input Frequency	90 GHz		96 GHz
RF Input Power		-60 dBm	-24 dBm
Noise Figure		4 dB	
IF Output Frequency	5 GHz		11 GHz
Image Rejection		20 dB	
RF to IF Conversion Gain		30 dB	
LO Frequency		10.625 GHz	
LO Input Power	0 dBm	+5 dBm	+10 dBm
DC Voltage Supply	+6 V <sub>DC</sub>	+8 V <sub>DC</sub>	+12 V <sub>DC</sub>
Current Supply		400 mA	
Specification Temperature		+ 25 °C	
Operating Temperature	0 °C		+ 50 °C

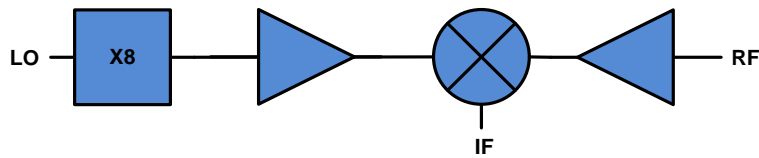
### Mechanical Specifications:

Item	Specification
RF Port	WR-10 Waveguide with UG-387/U-M Flange
RX IF Port and LO Port	SMA (F) and SMA (F)
Bias	SMA (F)
Housing/Finishing	Aluminum/Gold Plated
Weight	2 Oz
Size	1.1" (W) X 1.8" (L) X 0.5" (H)
Outline	ST-SW



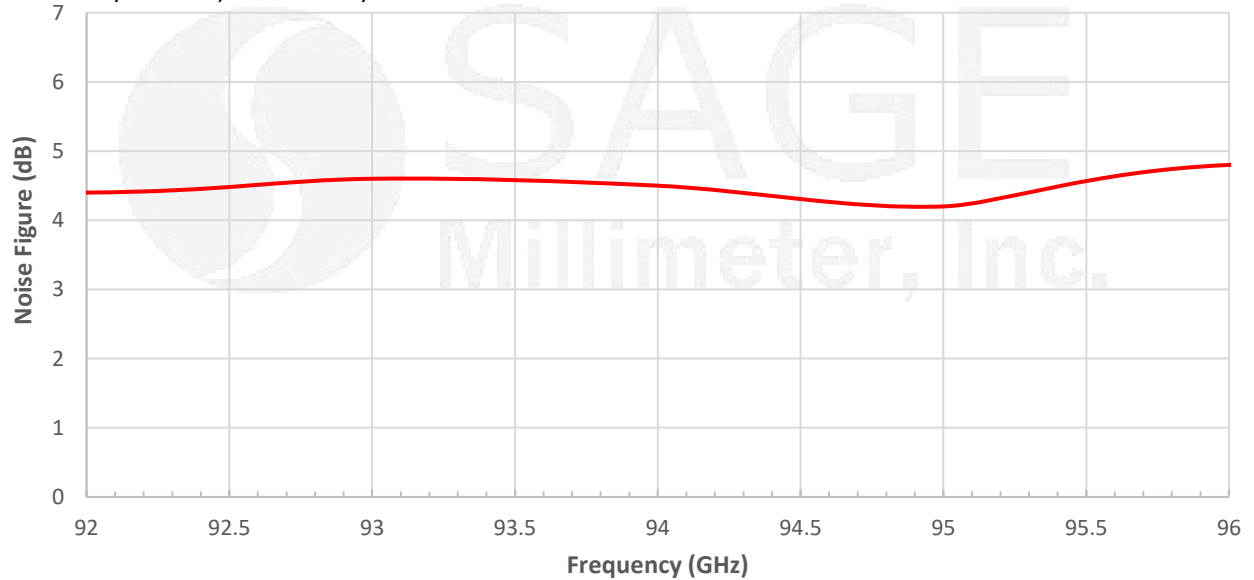
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Block Diagram:



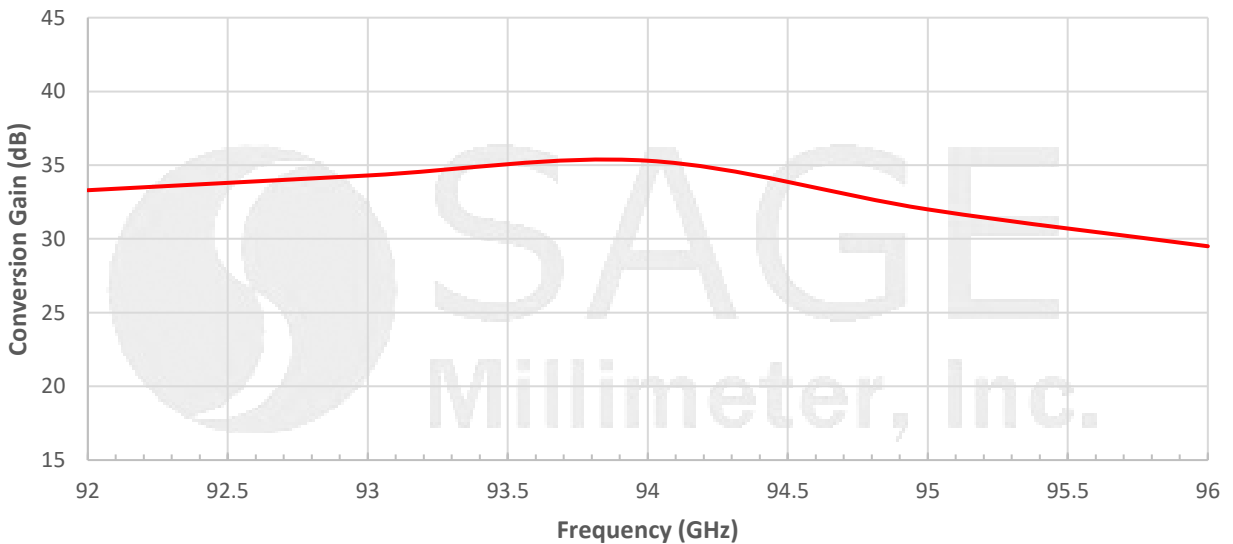
### Typical Noise Figure vs. Frequency

Bias: +8V/400 mA, LO: 11 GHz/+5 dBm



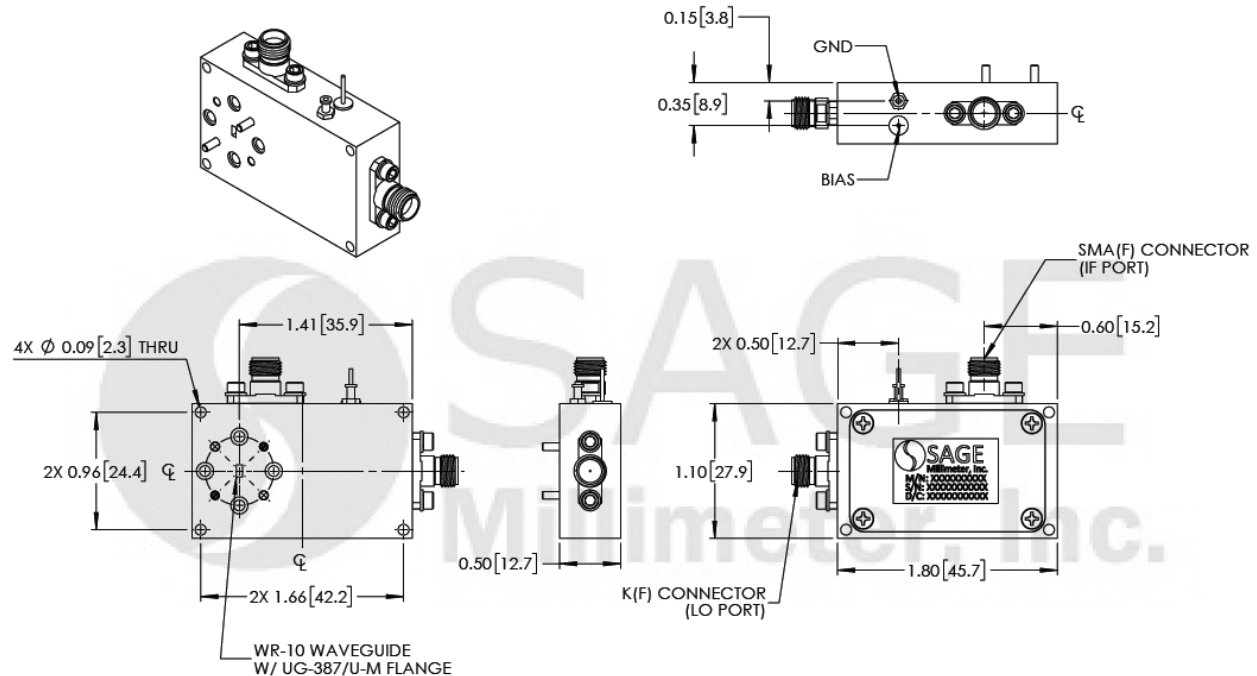
### Typical Conversion Gain vs. Frequency

Bias: +8V/400 mA, LO: 11 GHz/+5 dBm



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

**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.
- Other mechanical configurations are available under different model numbers.

**Caution:**

- Exceeding absolute maximum ratings shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- The case temperature of the device shall never exceed +50 °C. Use proper heatsink or fan if necessary.