



## W-Band Receiver, 75 to 110 GHz, 14 dB NF, 30 dB Gain

### Description:

**Model SSR-9333531430-10-B1** is a W-Band 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 75 to 110 GHz and a IF output frequency range of 10 MHz to 3 GHz. The required LO power and frequency range are +2 dBm and 12.5 to 18.33 GHz, respectively. 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:

- Low Noise Figure
- Fully Integrated Module

### Applications:

- Radar Systems
- Communication Systems
- Passive Camera Systems

### Electrical Specifications:

| Parameter                 | Minimum             | Typical             | Maximum             |
|---------------------------|---------------------|---------------------|---------------------|
| RF Input Frequency        | 75 GHz              |                     | 110 GHz             |
| RF Input Power            |                     | -60 dBm             | -10 dBm             |
| Damage RF Power           |                     |                     | -10 dBm             |
| Noise Figure              |                     | 14 dB               | 19 dB               |
| IF Output Frequency       | 10 MHz              |                     | 3 GHz               |
| RF to IF Conversion Gain  |                     | 30 dB               |                     |
| LO Frequency              | 12.5 GHz            |                     | 18.33 GHz           |
| LO Input Power            | +1 dBm              | +2 dBm              | +5 dBm              |
| LO DC Bias Voltage        | +10 V <sub>DC</sub> | +12 V <sub>DC</sub> | +14 V <sub>DC</sub> |
| LO DC Bias Current        |                     | 760 mA              |                     |
| Specification Temperature |                     | + 25 °C             |                     |
| Operating Temperature     | 0 °C                |                     | + 50 °C             |

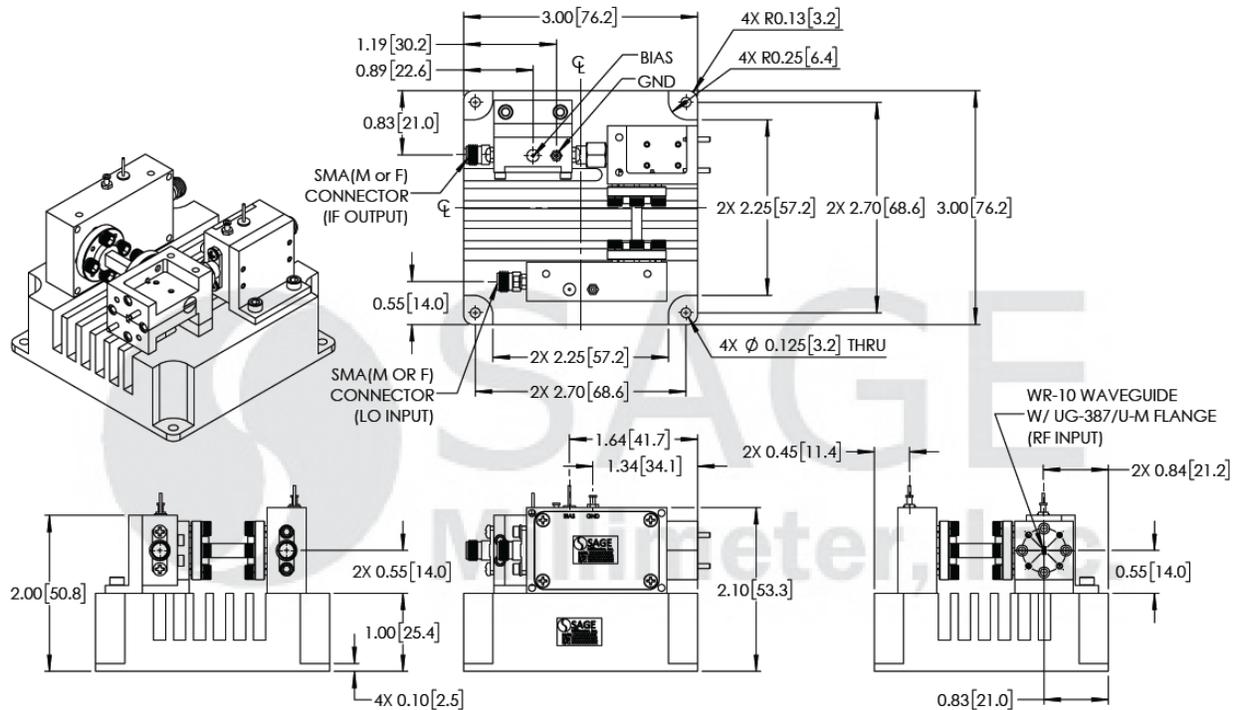
### Mechanical Specifications:

| Item          | Specification                          |
|---------------|--|
| RF Port       | WR-10 Waveguide with UG-387/U-M Flange |
| RX IF Port    | SMA(F)                                 |
| LO Port       | SMA(F)                                 |
| Bias          | Solder Pin                             |
| Base Material | Aluminum                               |
| Finishing     | Gold Plated                            |
| Weight        | 13.3 Oz                                |
| Size          | 3.0" (W) X 3.0" (L) X 2.1" (H)         |
| Outline       | SR-SW-VTC1                             |



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**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.
- 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.
- Any foreign objects into the waveguide will cause performance degradation and possible device damage.
- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**
- The case temperature of the device shall never exceed  $+50$  °C. Use proper Heatsink or fan if necessary.