



V-Band Full Waveguide Band Down-Converter

Description:

Model STC-20-15-S1 is a V-Band down-converter that converts millimeterwave signals from a frequency range of 50 to 75 GHz to the baseband at 10 MHz to 1.6 GHz. The down-converter requires 12.5 to 18.75 GHz at 0 dBm input power, which can be obtained from a standard 20 GHz synthesizer, such as Eravant model **SOT-02220313200-SF-B6**. The down-converter has low harmonic levels and excellent gain flatness, making it a good candidate to extend low frequency test equipment for millimeterwave testing purposes.



Features:

- Full Band Coverage
- +10 dBm Nominal Input P_{-1dB}
- 13 dB Typical Noise Figure

Applications:

- Test Lab
- Instrumentations
- Auto Test Set

Electrical Specifications

| Parameter | Minimum | Typical | Maximum |
|------------------------------------|---------------------|---------|---------------------|
| RF Input Frequency | 50 GHz | | 75 GHz |
| IF Frequency Output | 10.0 MHz | | 1.6 GHz |
| LO Input Frequency | 12.5 GHz | | 18.75 GHz |
| LO Power | | +0 dBm | +10 dBm |
| Conversion Gain | | 20 dB | |
| Harmonic Suppression | | 20 dB | |
| LO or RF Input Power Damage Level | | | +18 dBm |
| Power Supply (AC Adapter Provided) | 100 V _{AC} | | 240 V _{AC} |
| Specification Temperature | | +25 °C | |
| Operating Temperature | 0 °C | | +50 °C |

Mechanical Specifications:

| Port | Connector |
|--------------------|--|
| RF Port | WR-15 Waveguide with UG385/U Anti-Cocking Flange |
| LO Port | SMA (F) |
| IF Port | SMA (F) |
| DC Bias Port | 2.5 mm DC Jack (AC-to-DC power converter included) |
| DC Bias Switch | On-Off Rocker Switch with Indicator Light |
| Enclosure Material | Extruded Aluminum Finish Black Anodized |
| Weight | 3.5 lb |
| Size | 6.15" (W) x 8.86" (L) x 3.20" to 5.82" (H) |
| Outline | TC-V |



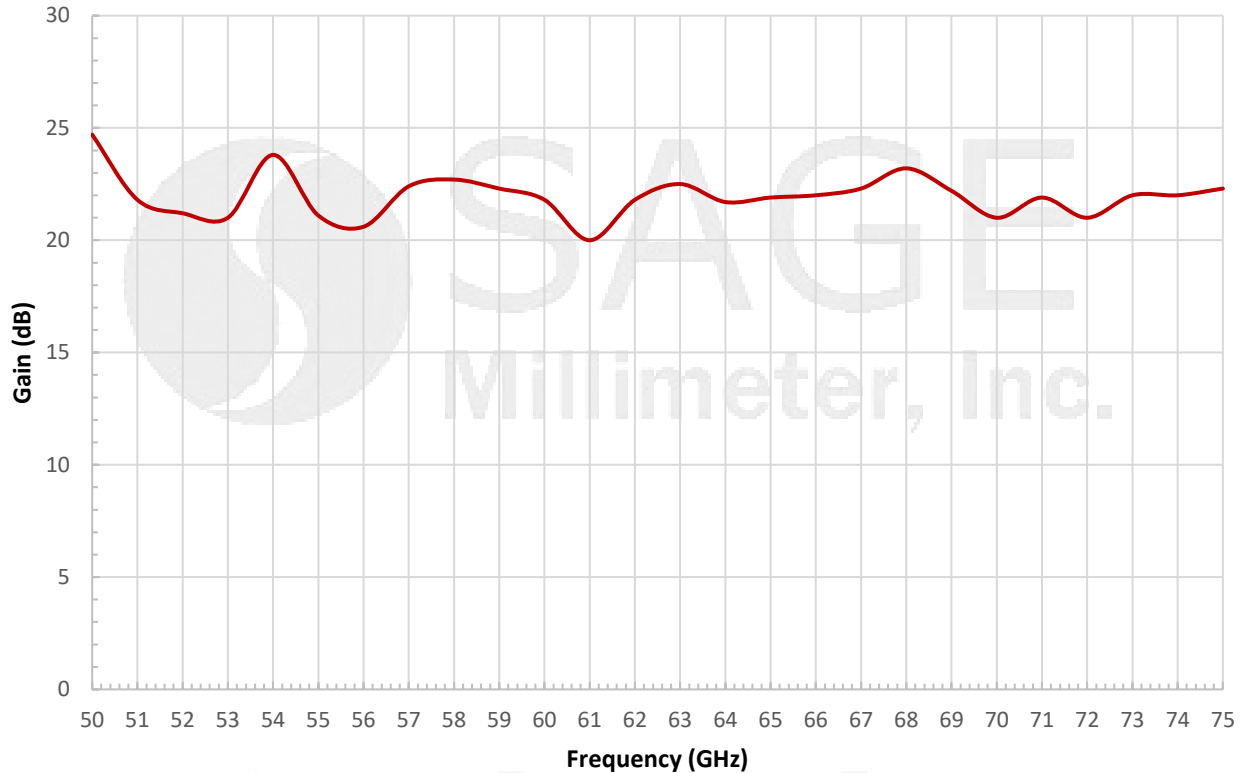
www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com



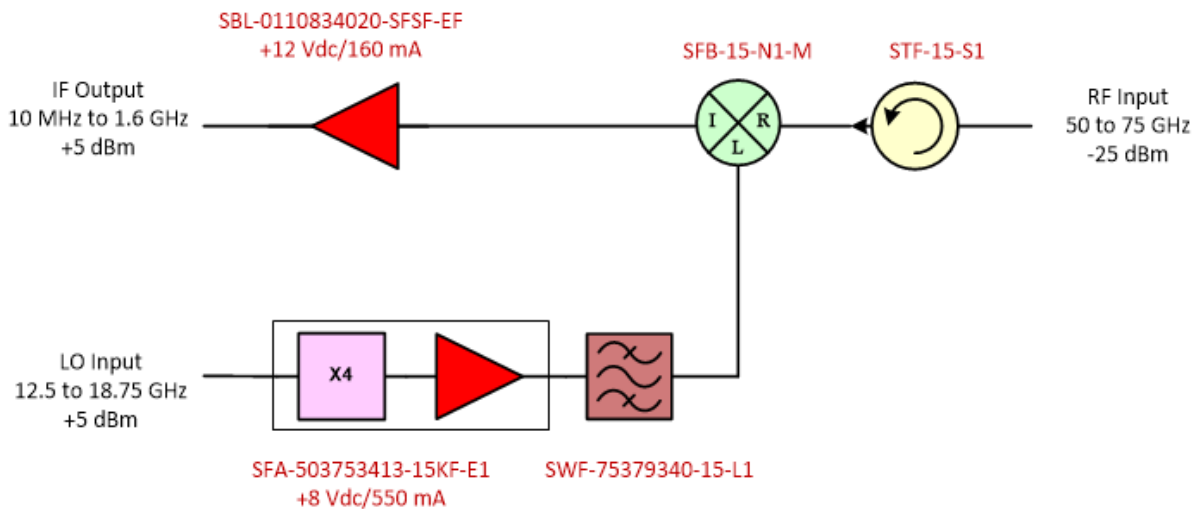
V-Band Full Waveguide Band Down-Converter

Typical Gain vs. RF Frequency

IF: 1 GHz, LO: +0 dBm, RF: -50 dBm



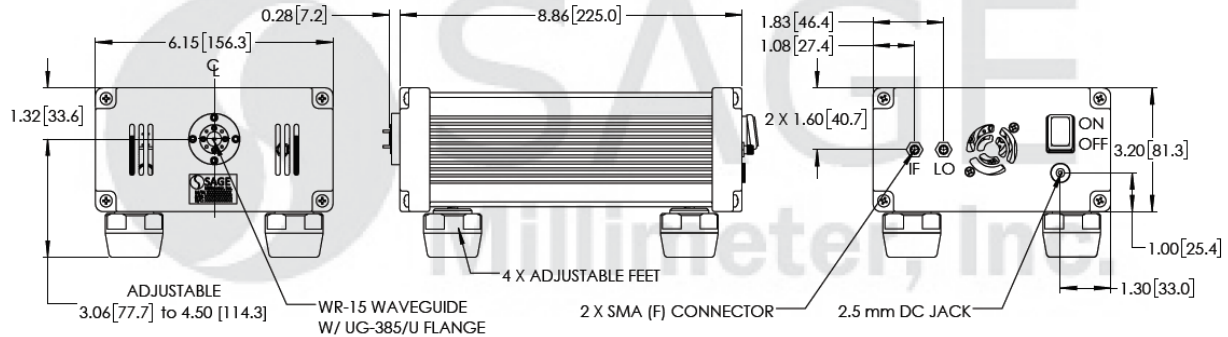
Block Diagram:





V-Band Full Waveguide Band Down-Converter

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.

Caution:

- Exceeding absolute maximum ratings of the device will damage the device.
- Proper torque, 8.0 ± 0.4 inch-pounds (0.90 ± 0.02 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**
- Any foreign objects in the waveguide will cause performance degradation or damage the device.

