STC-20-28-S1

Rev 1.0

Ka-Band Full Waveguide Band Down-converter

Description:



Model STC-20-28-S1 is a Ka-Band down-converter that converts millimeterwave signals from a frequency range of 26.5 to 40 GHz to the baseband at 10 MHz to 1.6 GHz. The down-converter requires 13.25 to 20 GHz at 0 dBm input power, which can be obtained from a standard 20 GHz synthesizer. 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
- Good Gain Flatness
- -20 dBm RF Input Level

Applications:

- Test Lab
- Instrumentations
- Auto Test Set

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Input Frequency	26.5 GHz		40 GHz
IF Frequency Output	10 MHz		1.6 GHz
LO Input Frequency	13.25 GHz		20 GHz
LO Power		+0 dBm	+3 dBm
Conversion Gain		20 dB	
Harmonic Suppression		20 dB	
DC Bias		+12 V_{DC}	
DC Current		200 mA	250 mA

Mechanical Specifications:

Port	Connector
RF Port	WR-28 Waveguide with UG-599/U Compatible Flange
LO Port	SMA (F)
IF Port	SMA (F)
Bias Port	Banana Jack
Finishing	Black Anodized
Weight	3.3 lb
Size	6.15” (W) x 8.86” (L) x 3.20” to 5.82” (H)
Outline	TC-A

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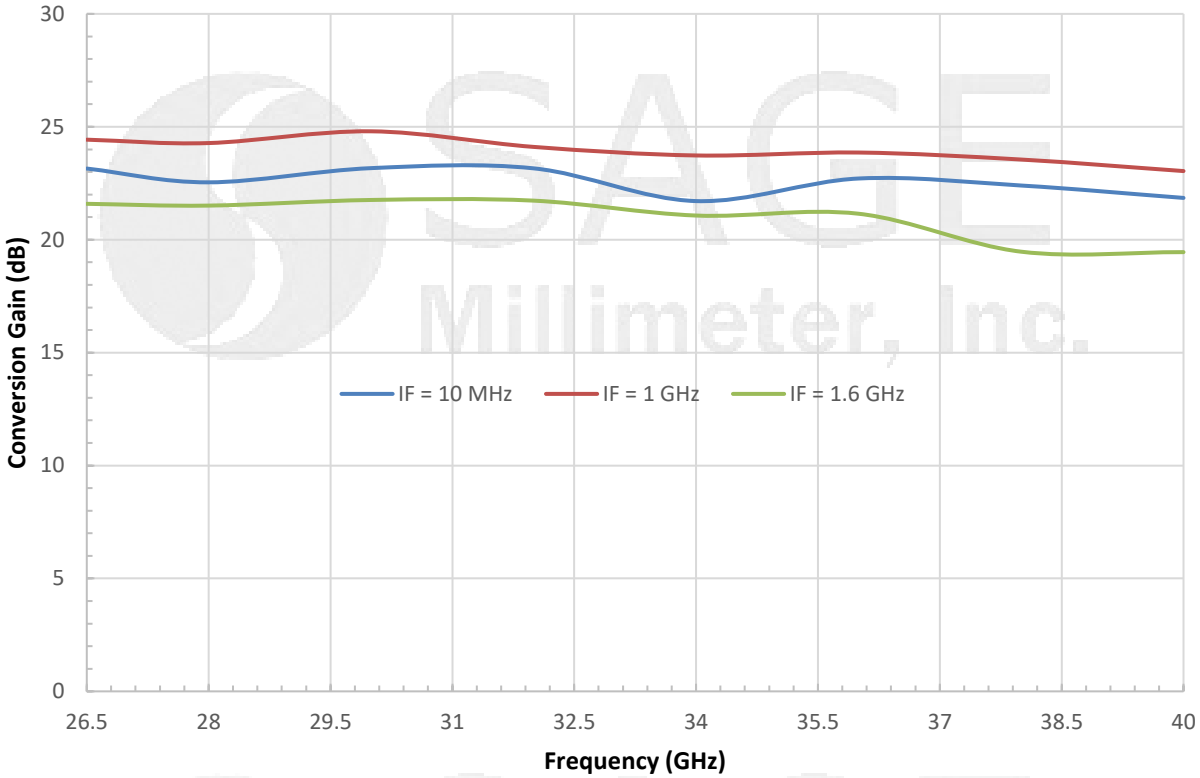
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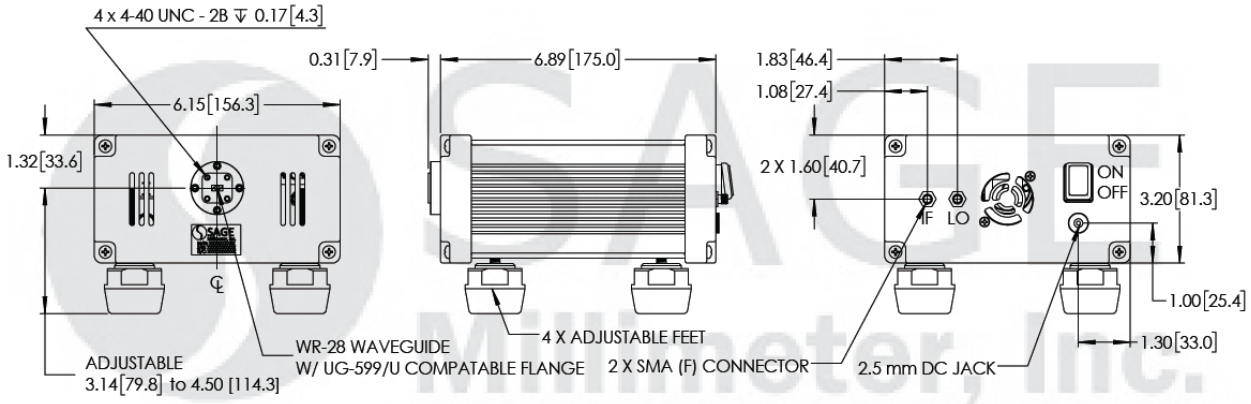
Test Data:

Typical Conversion Gain vs. Frequency

Bias: +12V_{DC}, LO = 0 dBm, RF = -20 dBm



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



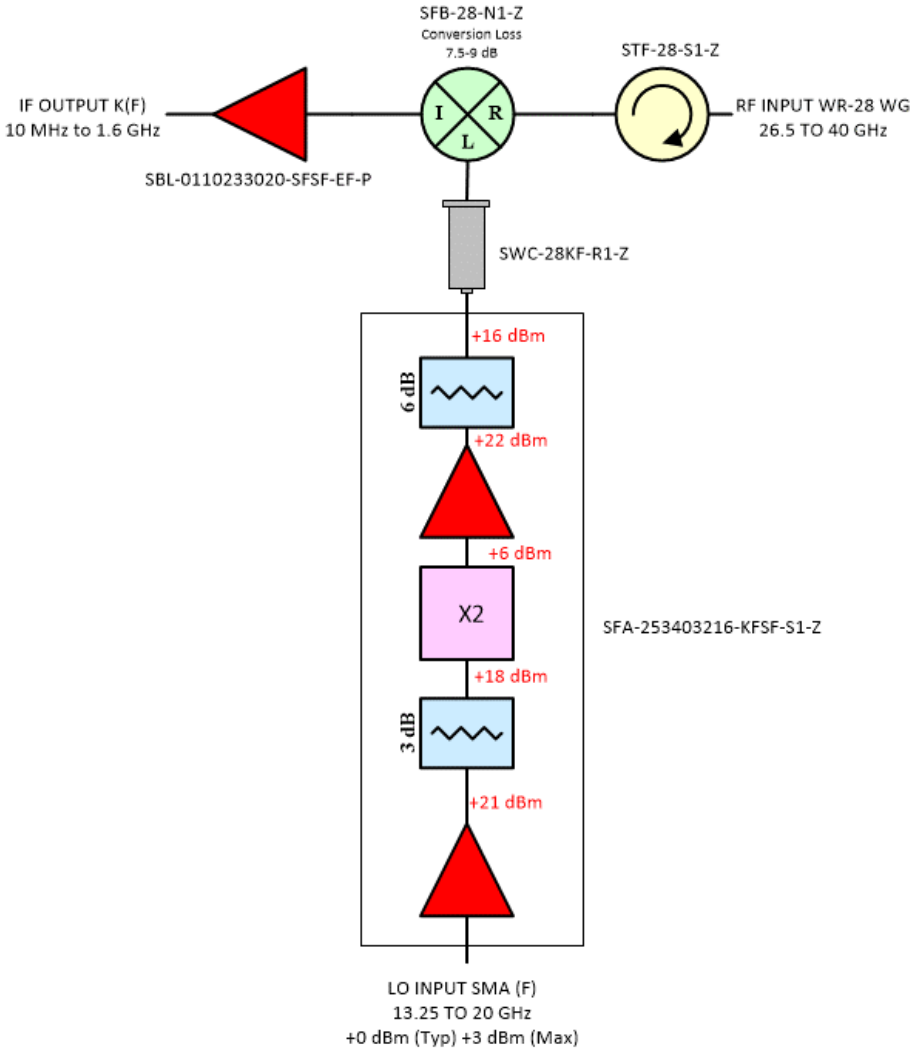
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Block Diagram:



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.

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