

## STC-20-12-S1

### E-Band Full Waveguide Band Down-Converter

**STC-20-12-S1** is a E-Band down-converter that converts millimeterwave signals from a frequency range of 60 to 90 GHz to the baseband at 10 MHz to 1.6 GHz. The down-converter requires a +3 dBm input power at 10 to 15 GHz, which can be obtained from a standard 20 GHz synthesizer, such as **Eravant models [STL-SG-022203-S1](#) or [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.



#### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Input Frequency	60 GHz		90 GHz
IF Output Frequency	10 MHz	1 GHz	1.6 GHz
LO Input Frequency	10 GHz		15 GHz
LO Power		+3 dBm	+20 dBm
Conversion Gain		20 dB	
Harmonic Suppression		20 dBc	
Input P1dB		-5 dBm	
RF Input Power Damage Level			+18 dBm
Power Supply (AC Adapter Provided)	100 V <sub>AC</sub>		240 V <sub>AC</sub>
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

#### Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U-M Precision 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 Latching Switch with Indicator Light
Enclosure Material	Black Anodized Aluminum
Weight	2.3 lbs
Size	4.89" (W) x 5.00" (L) x 1.90" (H)
Outline	TC-E-A

#### ECCN

EAR99

#### FEATURES

- Full Band Coverage

#### APPLICATIONS

- Test Lab
- Instrumentations
- Auto Test Set

#### RECOMMENDED PAIRINGS

- [STL-SG-022203-S1](#)
- [SOT-02220313200-SF-B6](#)

#### SUPPLEMENTAL DETAILS

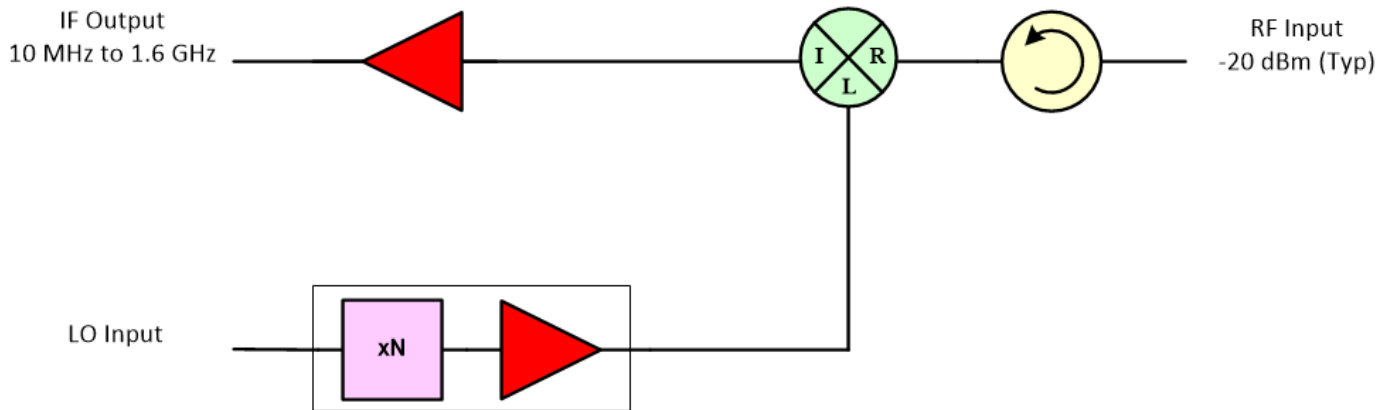


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### Accessories Included:

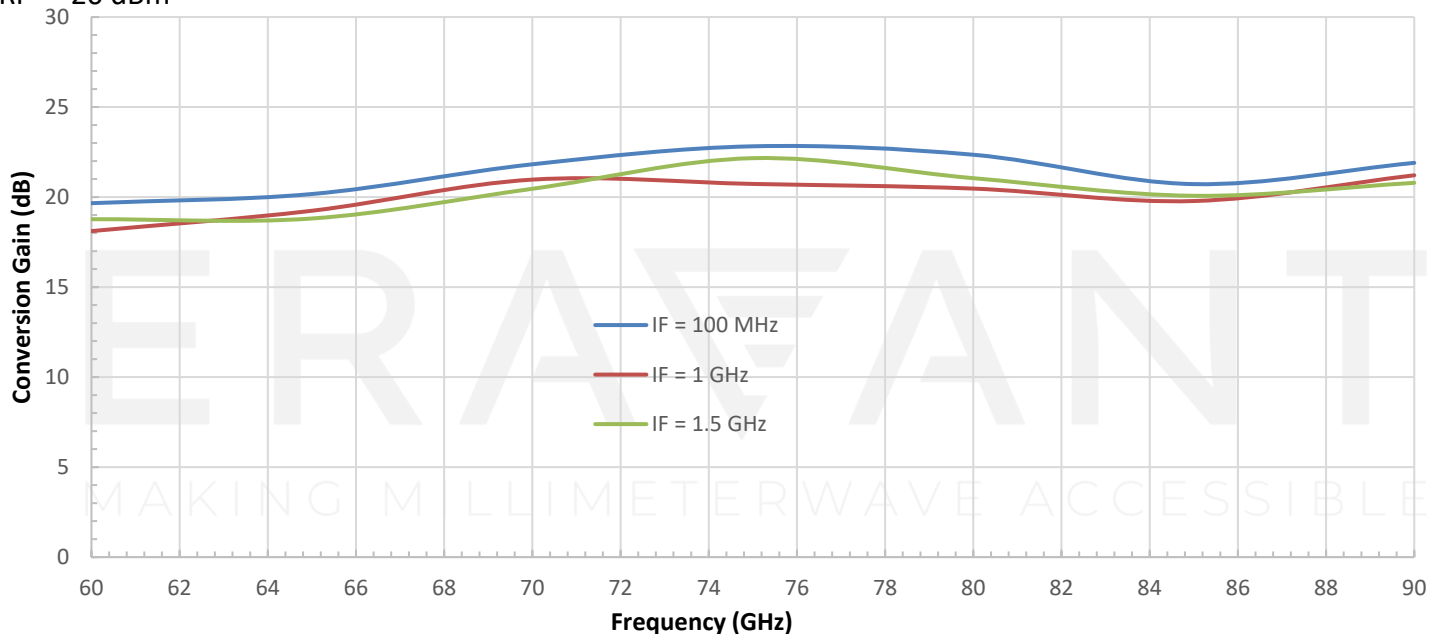
Item	Specification	Quantity
Proxi-Flange™ Contactless Flange, 1.0" Long	<a href="#">STQ-WG-12010-FB-CF</a>	1
Proxi-Flange™ Contactless Flange, 2.5" Long	<a href="#">STQ-WG-12025-FB-CF</a>	1
Waveguide Screwdriver, 3/32 Hex Head	SWH-332-DS	1
SMA Connector Torque Wrench	<a href="#">SCH-08008-S1</a>	1

### Block Diagram:



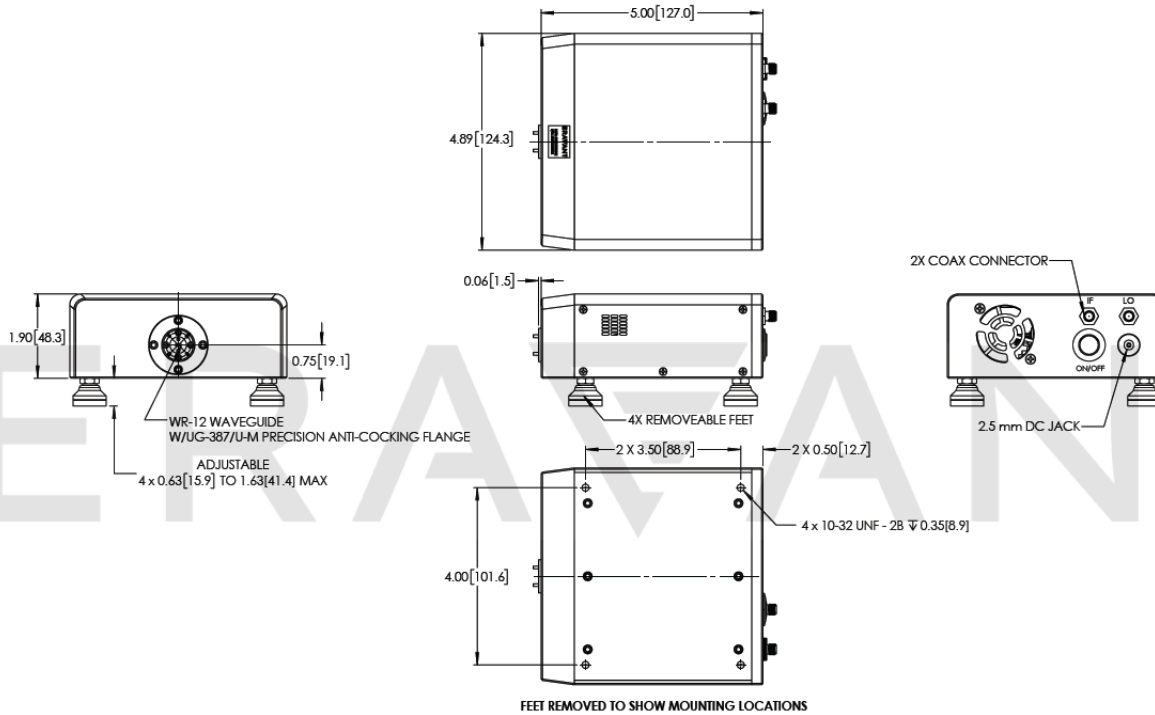
### Typical Conversion Gain vs. RF Frequency

RF = -20 dBm



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



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### NOTE:

- On condition that test data is provided it is collected from a sample lot. Actual data may vary slightly from unit to unit.
- All testing is performed under +25 °C room temperature.
- Eravant reserves the right to change the information presented without notice.

### CAUTION:

- Exceeding absolute maximum ratings of the device will damage the device.
- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- For 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm, and SMA connectors proper torque should be applied:  $8.0 \pm 0.15$  inch-pounds ( $0.90 \pm 0.02$  Nm). Torque wrench model **SCH-08008-S1** is highly recommended

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