

## STC-20-08-S1

### F-Band Full Waveguide Band Down-Converter

**STC-20-08-S1** is an F-Band down-converter that converts millimeterwave signals from a frequency range of 90 to 140 GHz to the baseband at 10 MHz to 1.6 GHz. The down-converter requires 11.25 to 17.5 GHz at +3 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.



#### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Input Frequency	90 GHz		140 GHz
IF Output Frequency	10 MHz	1 GHz	1.6 GHz
LO Input Frequency	11.25 GHz		17.5 GHz
LO Power		+3 dBm	+20 dBm
Conversion Gain		20 dB	
Harmonic Suppression		20 dBc	
Input P1dB		-10 dBm	
RF Input Power Damage Level			+13 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 Ports	WR-08 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 Rocker Latching 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-F-A

#### ECCN

3A001.b.7.d

#### FEATURES

- Full Band Coverage

#### APPLICATIONS

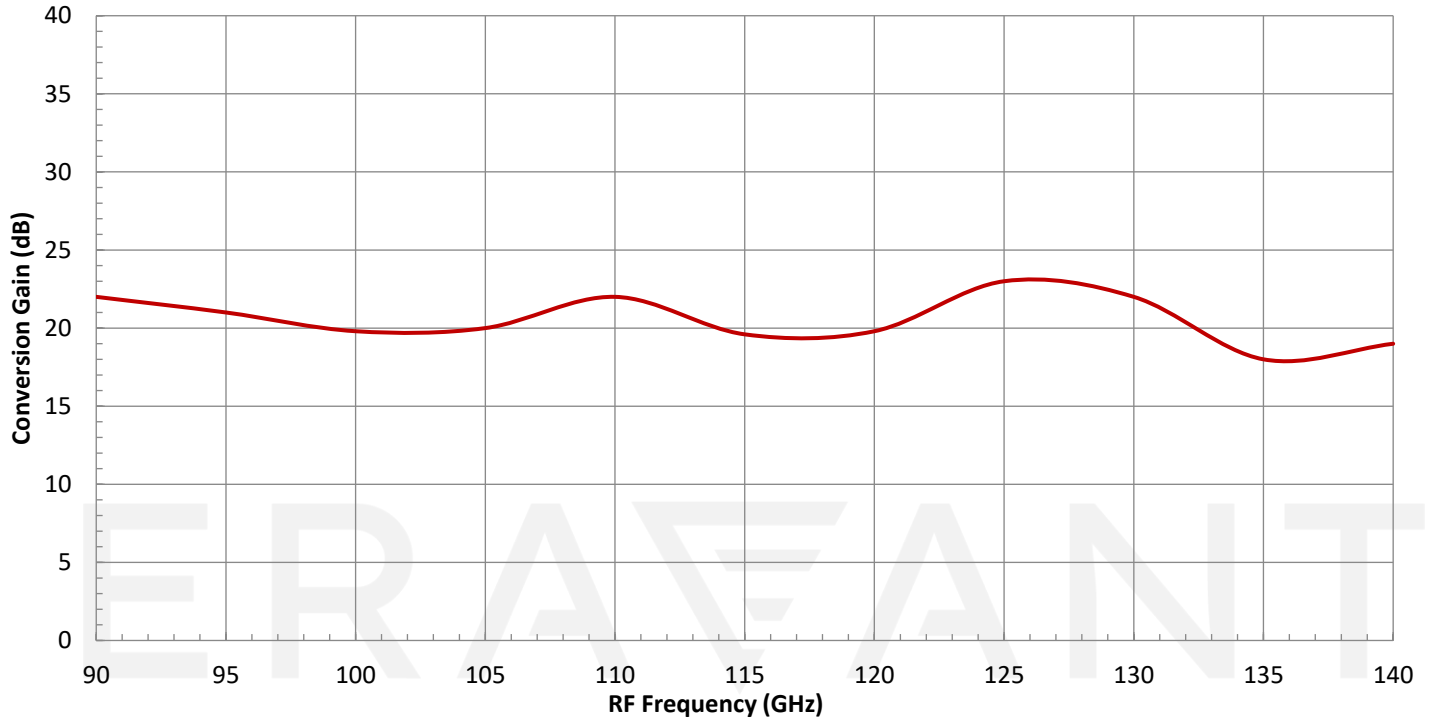
- Test Lab
- Instrumentations
- Auto Test Set

#### SUPPLEMENTAL DETAILS



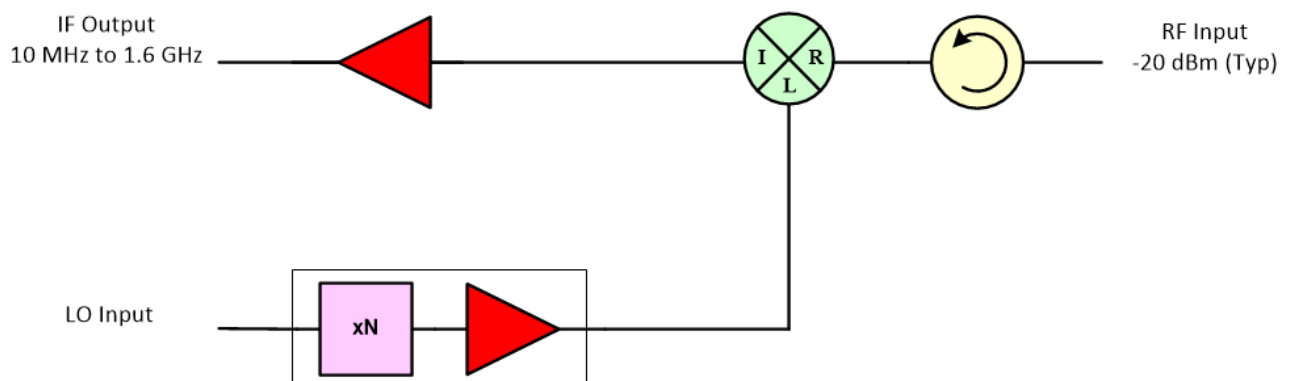
### Typical Conversion Gain vs. RF Frequency

IF: 1 GHz, RF: -20 dBm



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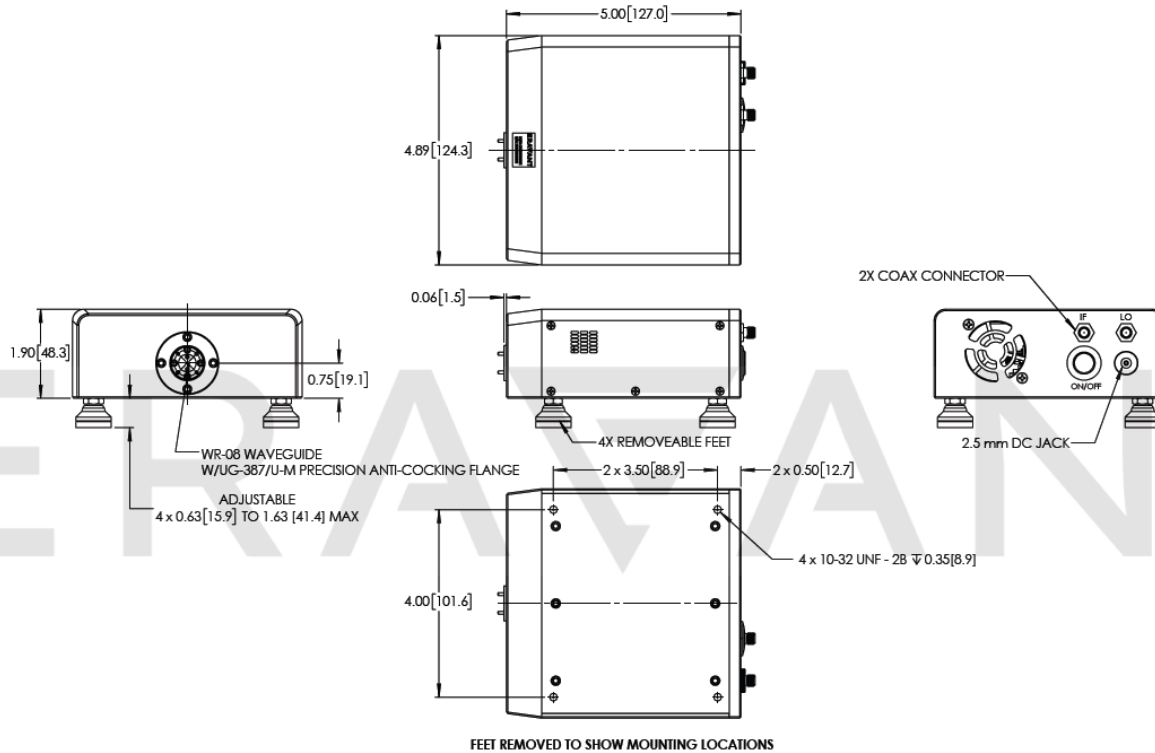
### Block Diagram:



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



### 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.
- On condition that simulated test data is provided, actual measured data may slightly vary.
- 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 mm connectors proper torque should be applied:  $4.0 \pm 0.15$  inch-pounds ( $0.45 \pm 0.02$  Nm). Torque wrench model [SCH-06004-S1](#) is highly recommended.
- 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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