

STC-20-22-S1

Q-Band Full Waveguide Band Down-Converter

STC-20-22-S1 is a Q-Band down-converter that converts millimeterwave signals from a frequency range of 33 to 50 GHz to the baseband at 10 MHz to 1.6 GHz. The down-converter requires 8.25 to 12.5 GHz at +5 dBm input power as its LO, 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	33 GHz		50 GHz
IF Output Frequency	10 MHz	1 GHz	1.6 GHz
LO Input Frequency	8.25 GHz		12.5 GHz
LO Power		+5 dBm	+10 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 _{AC}		240 V _{AC}
Specification Temperature		+25°C	
Operating Temperature	0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Port	WR-22 Waveguide with UG-383/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-Q-A

ECCN

EAR99

FEATURES

- Full Band Coverage

APPLICATIONS

- Test Lab
- Instrumentations
- Auto Test Set

RECOMMENDED PAIRINGS

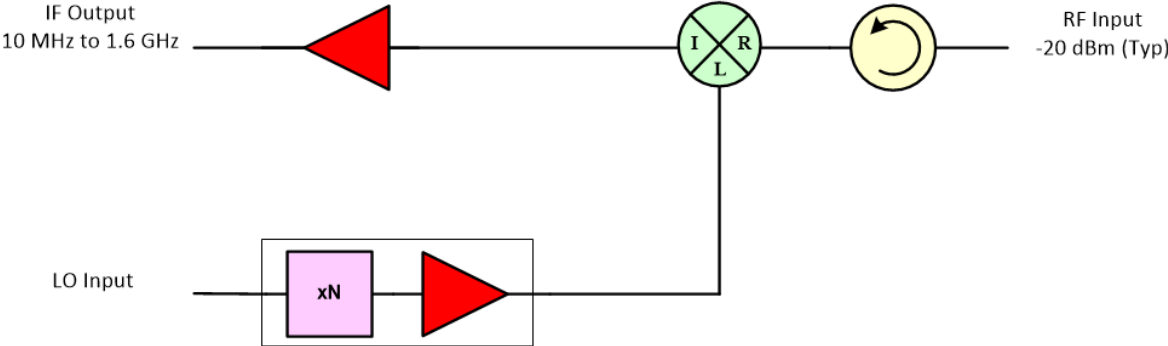
- [STL-SG-022203-S1](#)
- [SOT-02220313200-SF-B6](#)

SUPPLEMENTAL DETAILS



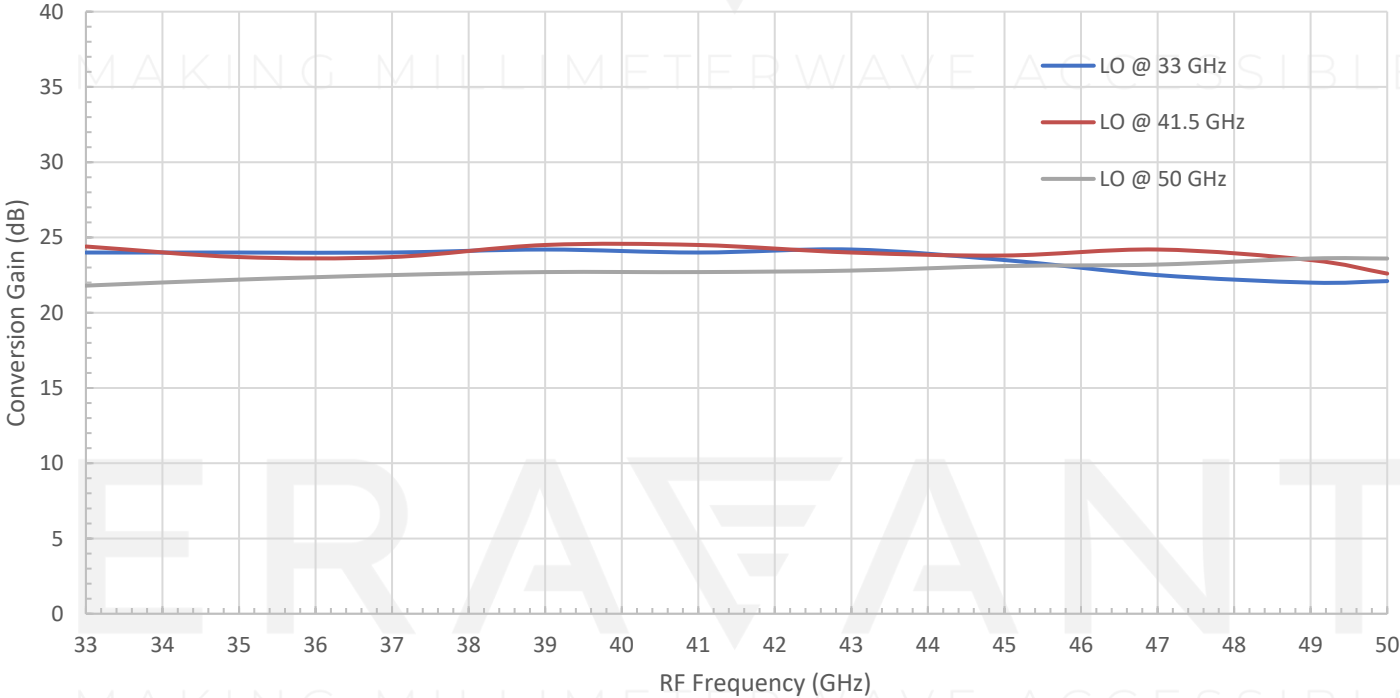
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Block Diagram:



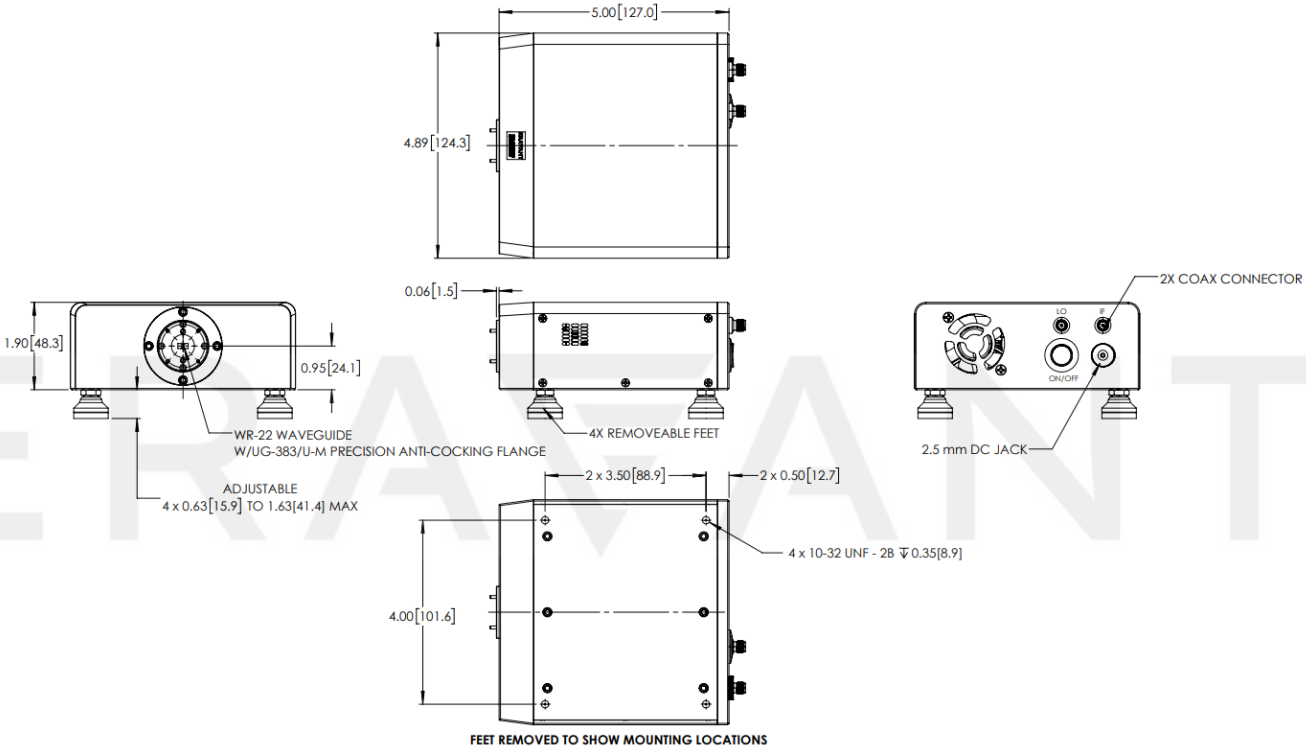
Typical Conversion Gain vs. RF Frequency

RF: -20 dBm



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



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 ± 0.15 inch-pounds (0.90 ± 0.02 Nm). Torque wrench model **SCH-08008-S1** is highly recommended.