STO-0520300-CM-E1

G-Band VNA Frequency Extender

Tx/Rx Module with Attenuator, 11.67 to 18.33 GHz Input

STO-0520300-CM-E1 is a G-Band vector network analyzer (VNA) frequency extender Tx/Rx designed to achieve full 1-port, S-parameter testing at 140 to 220 GHz. The Tx/Rx module includes a precision micrometer adjustable attenuator with 30 dB tuning range. It is compatible with modern vector network analyzers such as the Rohde & Schwarz ZNA, Anritsu VectorStar™, Keysight PNA-X Series, and Copper Mountain CobaltFx. The VNA needs dual sources to be extended. The frequency extender can achieve a dynamic range up to 90 dB for certain passive products that require high rejection, isolation, and return loss testing such as directional couplers, orthomode transducers, and filters. An AC to DC Power adapter and two **Proxi-Flange™ Contactless Flanges (STQ-WG-05010-FB-CF and STQ-WG-05025-FB-CF)**, are included. The Eravant calibration kit (**STQ-TO-05-S1-CKIT1**) and **Wave-Glide™ Rail System (STQ-TL-RW-S10-M1)** are highly recommended to complete the G-Band VNA test. VNA extender is packaged individually in a rugged equipment box with additional hardware

Electrical Specifications

Parameter	Minimum	Typical	Maximum
Frequency Range	140 GHz		220 GHz
Test Port Output Power (No Attenuation)		-5 dBm	
Test Port Input Power (Damage)			+25 dBm
Output Power Control Range		30 dB	
Dynamic Range @ 10 Hz BW		90 dB	
Test Port Match		20 dB	
Directivity		25 dB	
RF Source Input Frequency	11.67 GHz		18.33 GHz
RF Source Input Power	-3 dBm	0 dBm	+3 dBm
LO Source Input Frequency (RF±IF)	11.67 GHz		18.33 GHz
LO Source Input Power	0 dBm	+3 dBm	+6 dBm
IF Frequency Range	10 MHz		1000 MHz
Multiplication Factor		12	
Magnitude Stability @ 300 Hz BW		±0.25 dB	
Phase Stability @ 300 Hz BW		±5°	
Specification Temperature	+20 ˚C		+30 ˚C
Operating Temperature	0 ˚C		+50 ˚C

ECCN

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FEATURES

- Full Band Coverage
- Dynamic Range of 90 dB
- AC Power Input: 100 to 240 VAC

APPLICATIONS

- VNA Frequency Extension
- S-Parameter Characterization
- Test Lab Instrumentation

RECOMMENDED PAIRINGS

- Cal Kit: STQ-TO-05-S1-CKIT1
- Wave-Glide™ Rail System
- Waveguide Quick Connects
- Cable: SCW-SMSM040-F1-A-PM

RECOMMENDED RESOURCES

- Contactless WG Flange & mmW-THz Test Setup Applications
- VNA Extender Configuration Guide
- VNA Extenders & Cal Kits

Mechanical Specifications

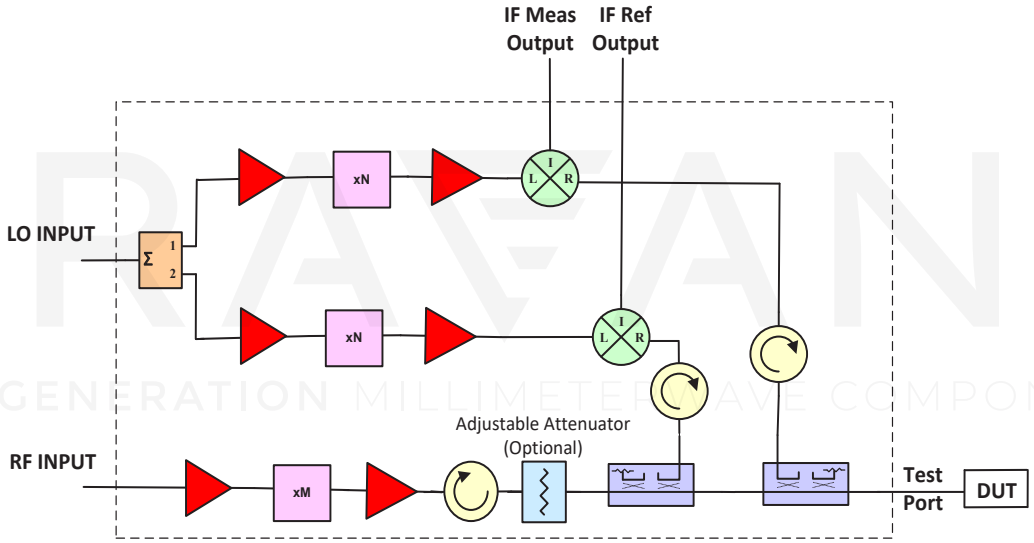
Item	Specification
Test Port	WR-05 Waveguide with UG-387/U-M Precision Anti-Cocking Flange
RF and LO Source Input Ports	SMA (F), SMA (F)
IF Output Port	SMA (F)
IF Reference Port	SMA (F)
DC Power Receptacle	LEMO EGG.0B.304.CLL
Finish	Black Anodized
Weight	4.4 lb
Size (Without Adjustable Feet)	11.50” (L) x 3.00” (W) x 1.90” (H)
Outline	TO-SG-A-M (with Attenuator)

Components Included:

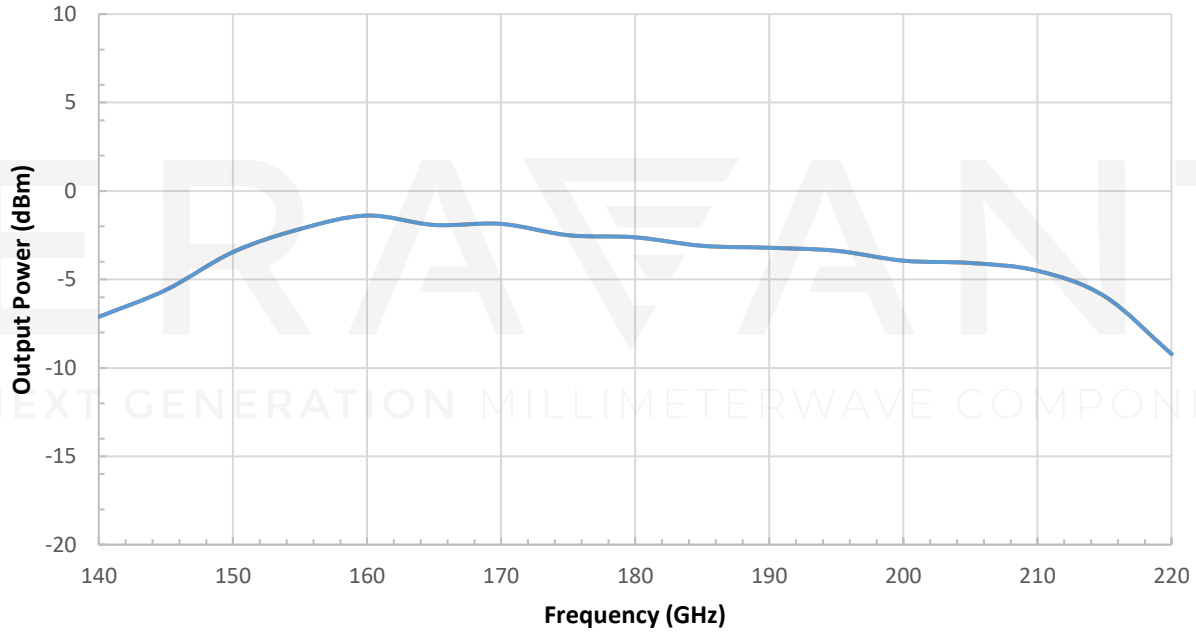
Item	Eravant Model Number	Quantity
Proxi-Flange™ Contactless Flange, 1.0” Long	STQ-WG-05010-FB-CF	1
Proxi-Flange™ Contactless Flange, 2.5” Long	STQ-WG-05025-FB-CF	1
Waveguide Screws, 3/32 Hex Head	SWH-332-SS-10	1 (10 Screws Total)
Waveguide Screwdriver, 3/32 Hex Head	SWH-332-DS	1
SMA Connector Torque Wrench	SCH-08008-S1	1
AC-to-DC Power Adapter	STU-110006005-HF	1

Connecting cables are not included. Eravant coaxial cable, model **SCW-SMSM040-F1-A-PM**, is highly recommended. A total of four (4) are required for full operation.

Simplified Block Diagram



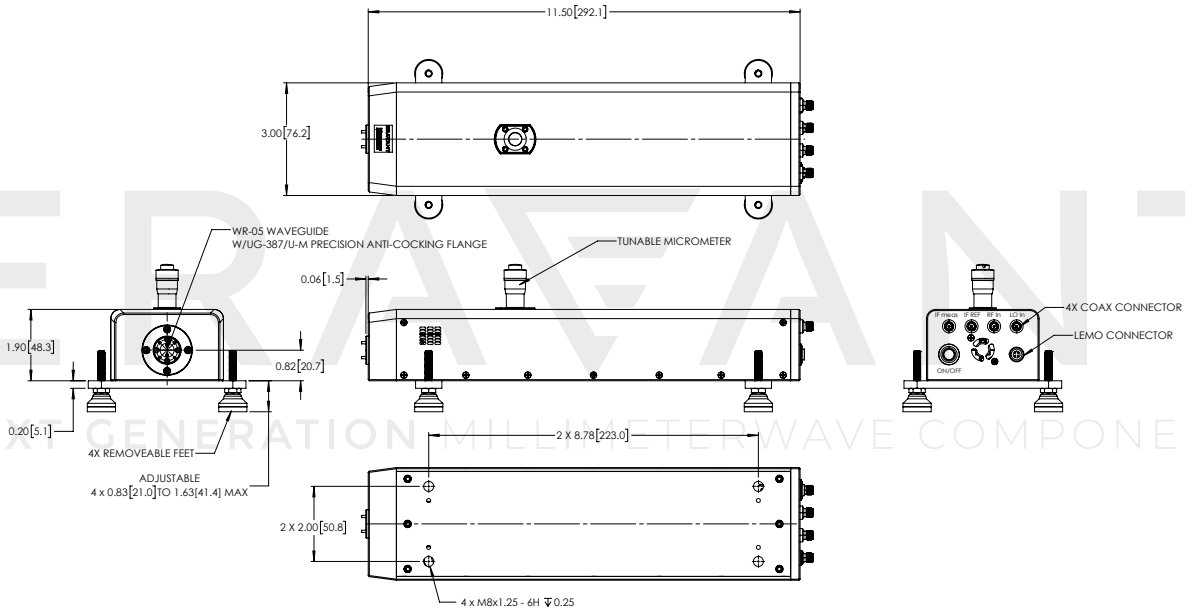
Output Power vs. Frequency



Mechanical Outline

Unless otherwise specified, all dimensions are in inches [millimeters]

TO-SG-A-M (With Attenuator)



FEET REMOVED TO SHOW RAIL MOUNTING LOCATION

NOTE

- **Only one extender module is included in STO-0520300-CM-E1: Tx/Rx module with Attenuator. A pair of extenders is offered under a different model number and can be found on our VNA Frequency Extenders page.**
- Eravant reserves the right to change the information presented without notice.

CAUTION

- Exceeding absolute maximum ratings of the device will damage the extenders.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm), should be applied. **Eravant torque wrench, model SCH-08008-S1, is highly recommended.**
- Any foreign objects in the waveguide will cause performance degradation or damage the device.

Appendix: Case View with Included Components