STO-1209305-C-E1

E-Band VNA Frequency Extender

Tx/Rx Module, 5.00 to 7.50 GHz Input

STO-1209305-C-E1 is an E-Band vector network analyzer (VNA) frequency extender Tx/Rx designed to achieve full 1-port, S-parameter testing at 60 to 90 GHz. It is compatible with modern vector network analyzers such as the Copper Mountain CobaltFx. The VNA needs dual sources to be extended. The frequency extender can achieve a dynamic range up to 120 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-12010-FB-CF and STQ-WG-12025-FB-CF)**, are included. The Eravant calibration kit (**STQ-TO-12-S1-CKIT1**) and **Wave-Glide™ Rail System (STQ-TL-RW-S10-M1)** are highly recommended to complete the E-Band VNA test set. VNA extender is packaged individually in a rugged equipment box with additional hardware and tools.

Electrical Specifications

Parameter	Minimum	Typical	Maximum
Frequency Range	60 GHz		90 GHz
Test Port Output Power (No Attenuation)		+5 dBm	
Test Port Input Power (Damage)			+15 dBm
Dynamic Range @ 10 Hz BW	100 dB	120 dB	
Test Port Match		25 dB	
Directivity		35 dB	
RF Source Input Frequency	5.00 GHz		7.50 GHz
RF Source Input Power	-6 dBm	-3 dBm	0 dBm
LO Source Input Frequency (RF±IF)	5.00 GHz		7.50 GHz
LO Source Input Power	-3 dBm	0 dBm	+3 dBm
IF Frequency Range	10 MHz		1000 MHz
Multiplication Factor		12	
Magnitude Stability @ 300 Hz BW		±0.1 dB	
Phase Stability @ 300 Hz BW		±2.5°	
Specification Temperature	+20 ˚C		+30 ˚C
Operating Temperature	0 ˚C		+50 ˚C

ECCN

- EAR99

FEATURES

- Full Band Coverage
- Dynamic Range of 120 dB
- AC Power Input: 100 to 240 VAC

APPLICATIONS

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

RECOMMENDED PAIRINGS

- Cal Kit: STQ-TO-12-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

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Mechanical Specifications

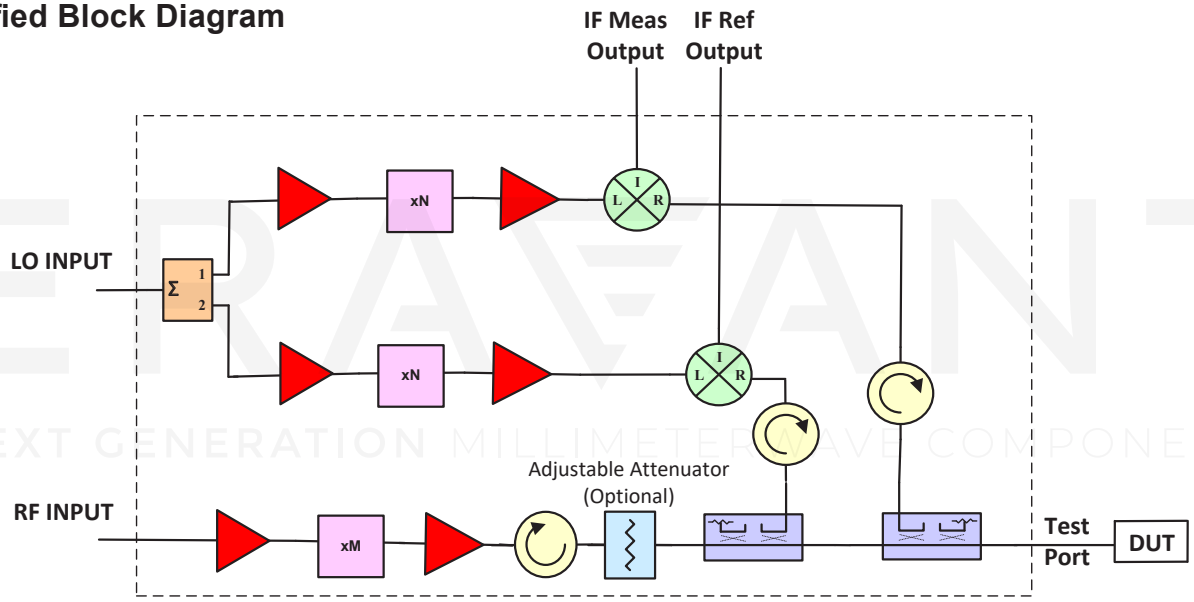
Item	Specification
Test Port	WR-12 Waveguide with UG-387/U Precision Anti-Cocking Flange
RF and LO Source Input Ports	SMA (F), SMA (F)
IF Output Port	SMA (F)
IF Reference Port	SMA (F)
DC Power Receptacle	LEMO EGG.0B.304.CLL
Finish	Blue Anodized
Weight (per Module)	4.4 lb
Size (Without Adjustable Feet)	11.50” (L) x 3.00” (W) x 1.90” (H)
Outline	TO-SE-A

Components Included:

Item	Eravant Model Number	Quantity
Proxi-Flange™ Contactless Flange, 1.0” Long	STQ-WG-12010-FB-CF	1
Proxi-Flange™ Contactless Flange, 2.5” Long	STQ-WG-12025-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) for are required for full operation.

Simplified Block Diagram



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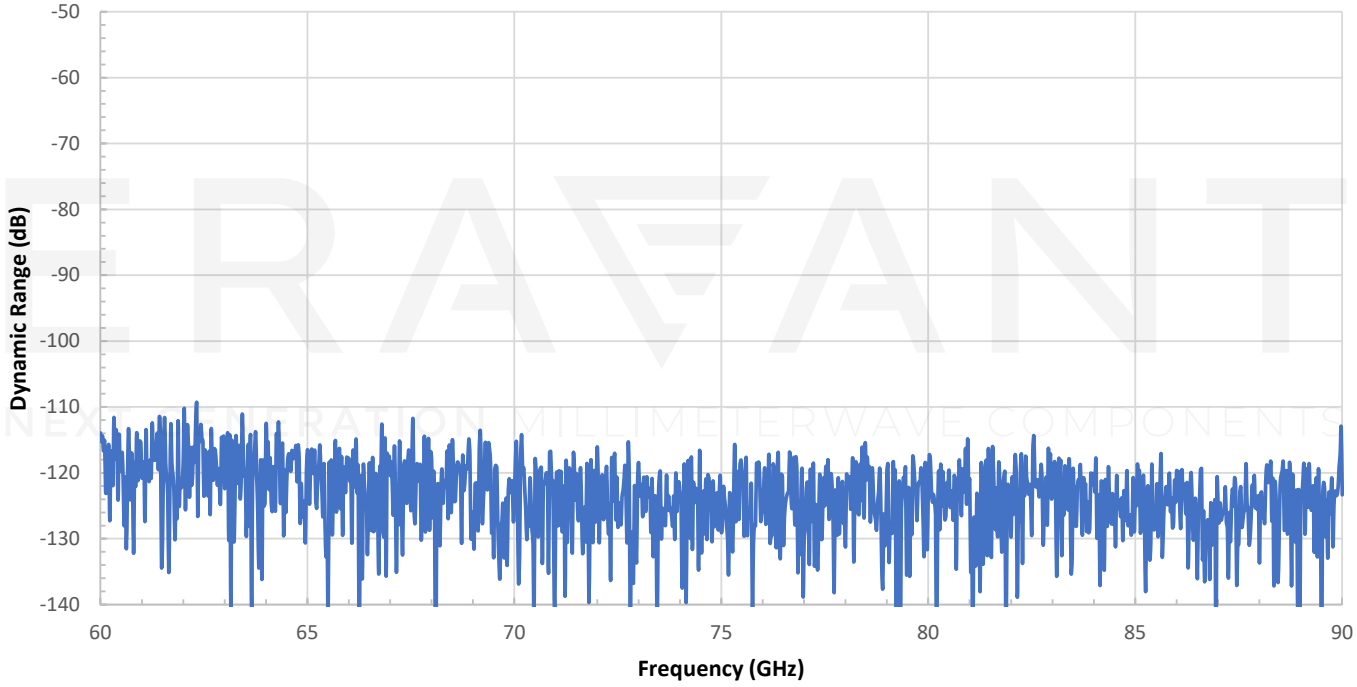
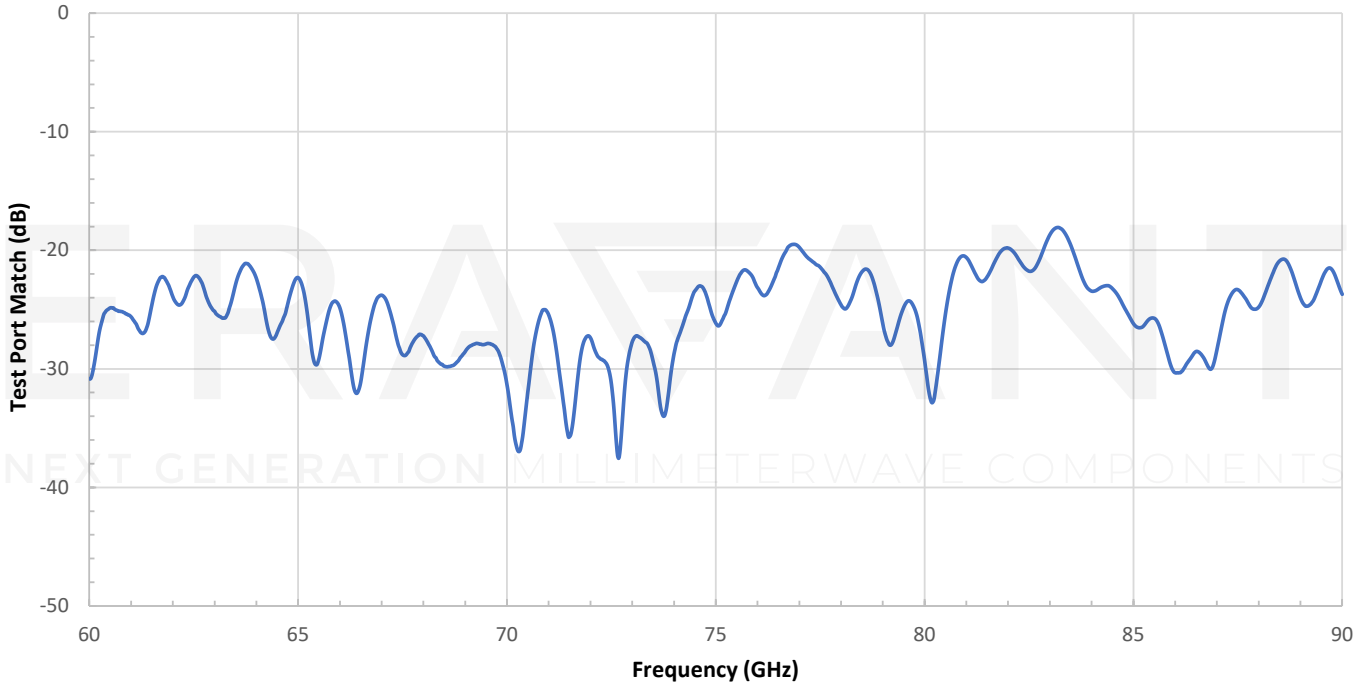
Dynamic Range vs. Frequency



Test Port Match vs. Frequency



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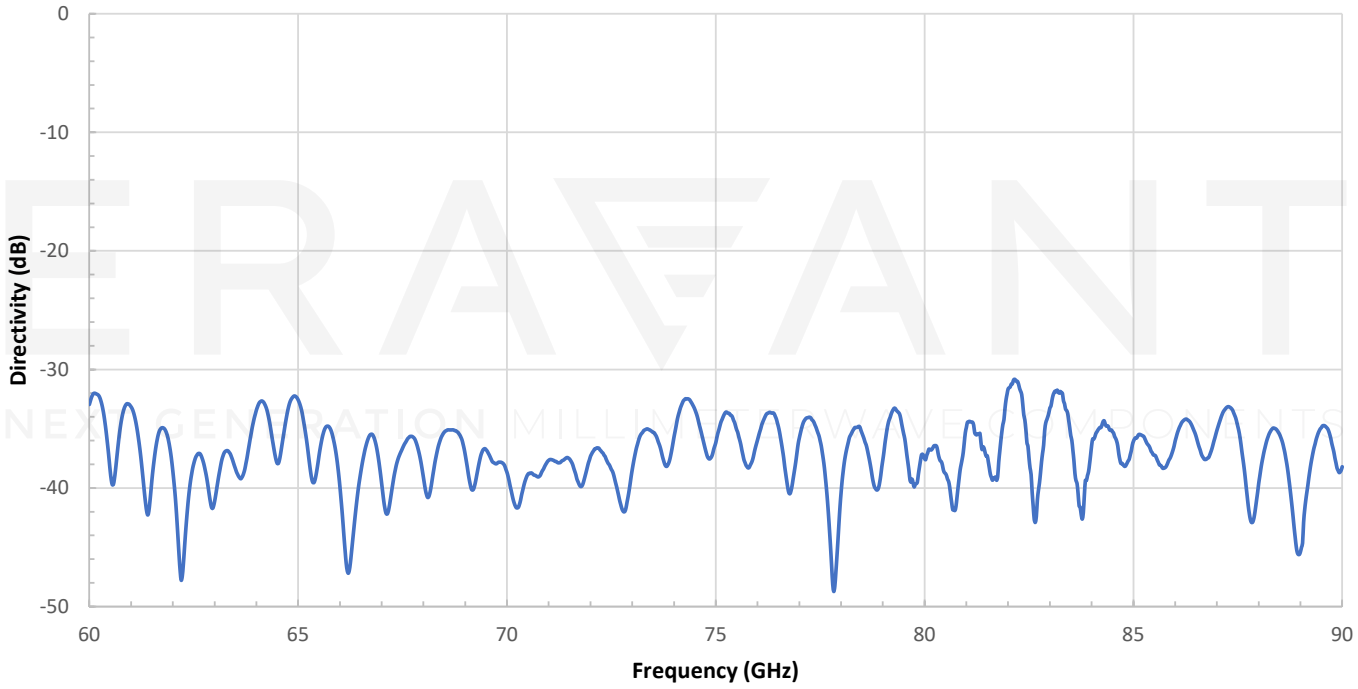
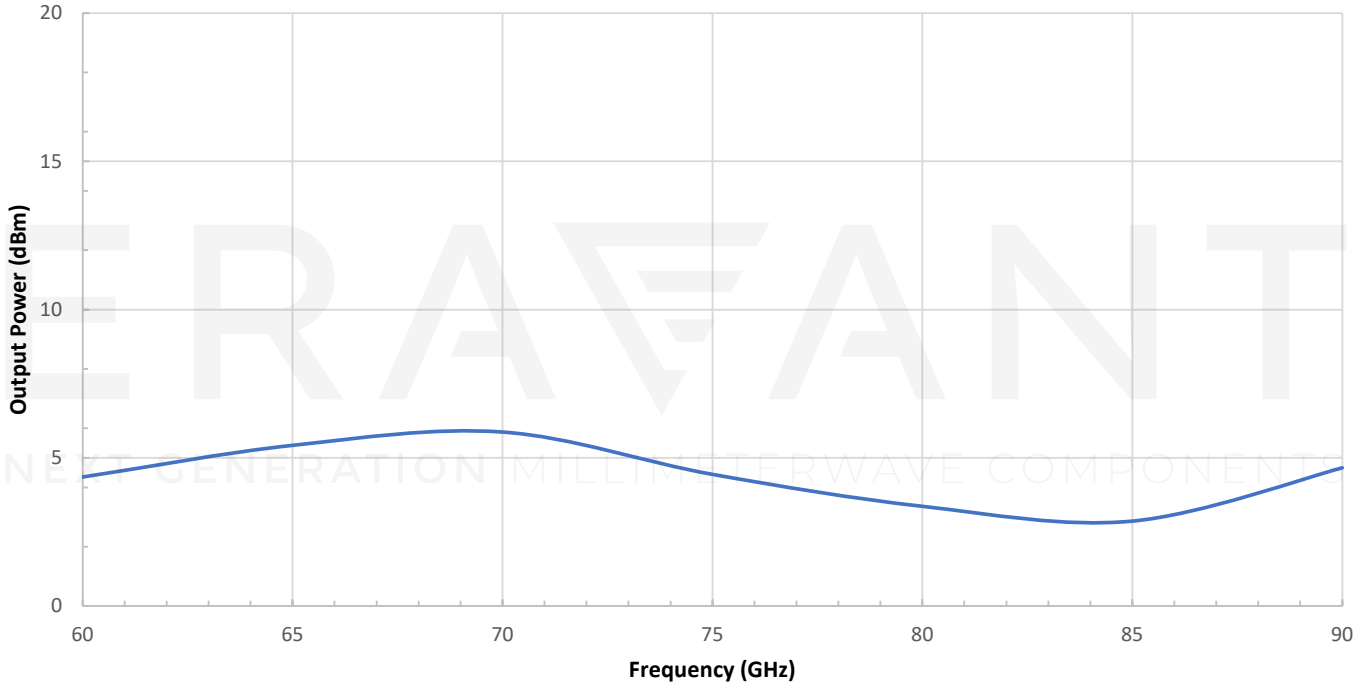
Directivity vs. Frequency



Output Power vs. Frequency



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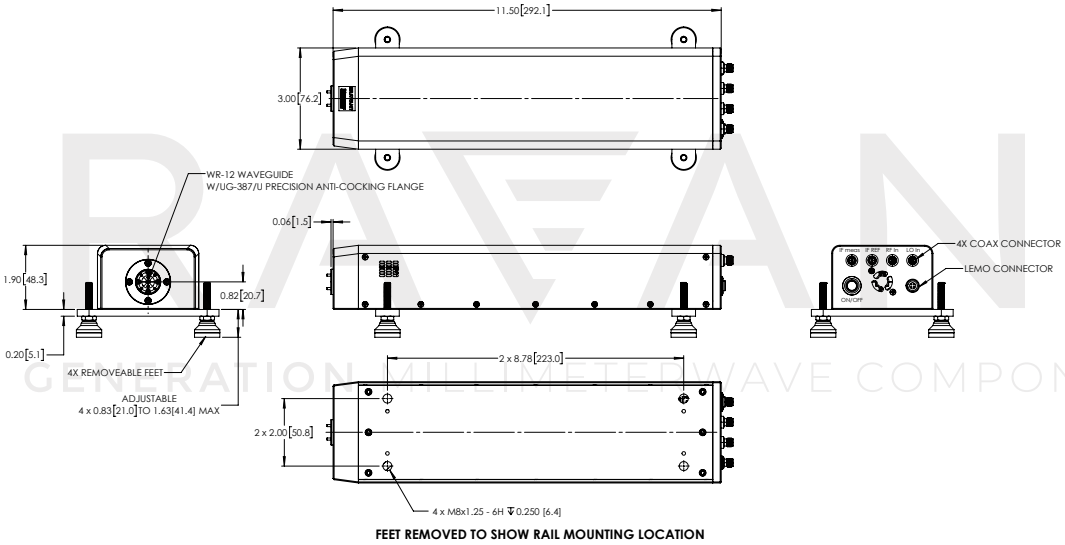
Mechanical Outline

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

TO-SE-A



NOTE

- **Only one extender module is included in STO-1209305-C-E1: Tx/Rx module. 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.

ERAVANT NEXT GENERATION MILLIMETERWAVE COMPONENTS

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Appendix: Case View with Included Components

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