

STO-1220315-T-E1

E-Band VNA Frequency Extender, Transmit (Tx/Ref) Module, 10 to 15 GHz Input

STO-1220315-T-E1 is a compact E-Band vector network analyzer (VNA) frequency extender transmit (Tx/Ref) module that extends lower frequency VNA signals to 60 to 90 GHz. It is compatible with modern vector network analyzers such as Rohde & Schwarz ZNA, Anritsu VectorStar™, Keysight PNA-X Series, and Copper Mountain CobaltFx. The VNA needs dual sources to be extended. This frequency extender, when paired with compatible receiver, can achieve a dynamic range up to 120 dB and can be used to measure one-path transmission (S21 or S12) through DUT. An AC to DC Power adapter and **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 | | 15 dBm | |
| Dynamic Range** @ 10 Hz BW | 100 dB | 120 dB | |
| Test Port Match | | 20 dB | |
| RF Source Input Frequency | 10 GHz | | 15 GHz |
| RF Source Input Power | 0 dBm | +3 dBm | +6 dBm |
| LO Source Input Frequency (RF±IF) | 10 GHz | | 15 GHz |
| LO Source Input Power | 0 dBm | +3 dBm | + 6 dBm |
| IF Frequency Range | 10 MHz | | 1000 MHz |
| Multiplication Factor | | 6 | |
| Specification Temperature | +20°C | | +30°C |
| Operating Temperature | -0°C | | +50°C |

*Measured with compatible Rx module.

ECCN

EAR99

FEATURES

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

APPLICATIONS

- VNA Frequency Extension
- OTA Measurements
- Test Lab System

RECOMMENDED PAIRINGS

- Cal Kit: [STQ-TO-12-S1-CKIT1](#)
- [Waveguide Quick Connects](#)
- Cable: [SCW-SMSM040-F1-A-PM](#)

RECOMMENDED RESOURCES

- [Contactless WG Flange & mmW-THz Test Setup](#)
- [VNA Extender Configuration Guide](#)
- [VNA Extenders & Cal Kits](#)



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Mechanical Specifications:

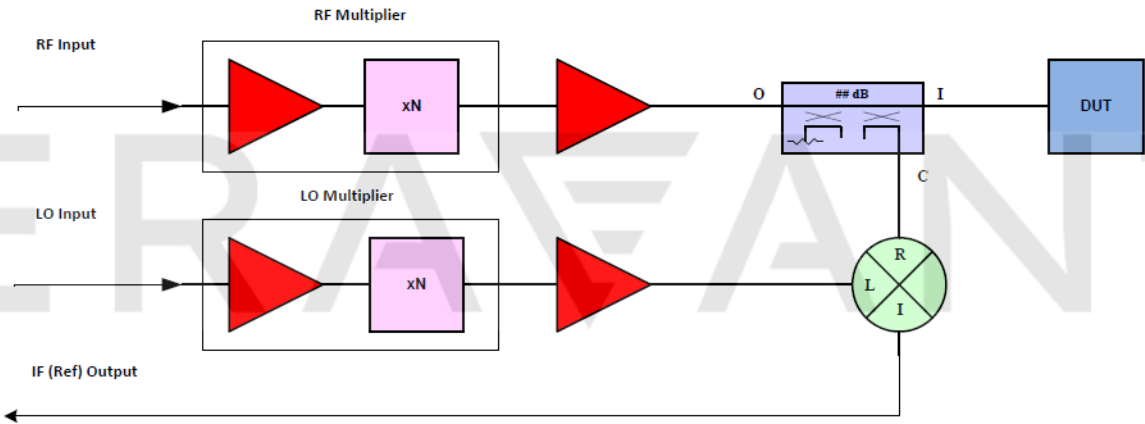
| Item | Specification |
|--------------------------------|---|
| Test Port | WR-12 Waveguide with UG-387/U Precision Anti-Cocking Flange |
| RF and LO Source Input Ports | SMA (F) |
| IF Reference Port | SMA (F) |
| DC Power Receptacle | LEMO EGG.0B.304.CLL |
| Finish | Black Anodized |
| Weight (per Module) | 2.1 lbs. |
| Size (Without Adjustable Feet) | 5.00" (L) x 3.75" (W) x 1.90" (H) |
| Outline | TO-TE-A |

Included Components:

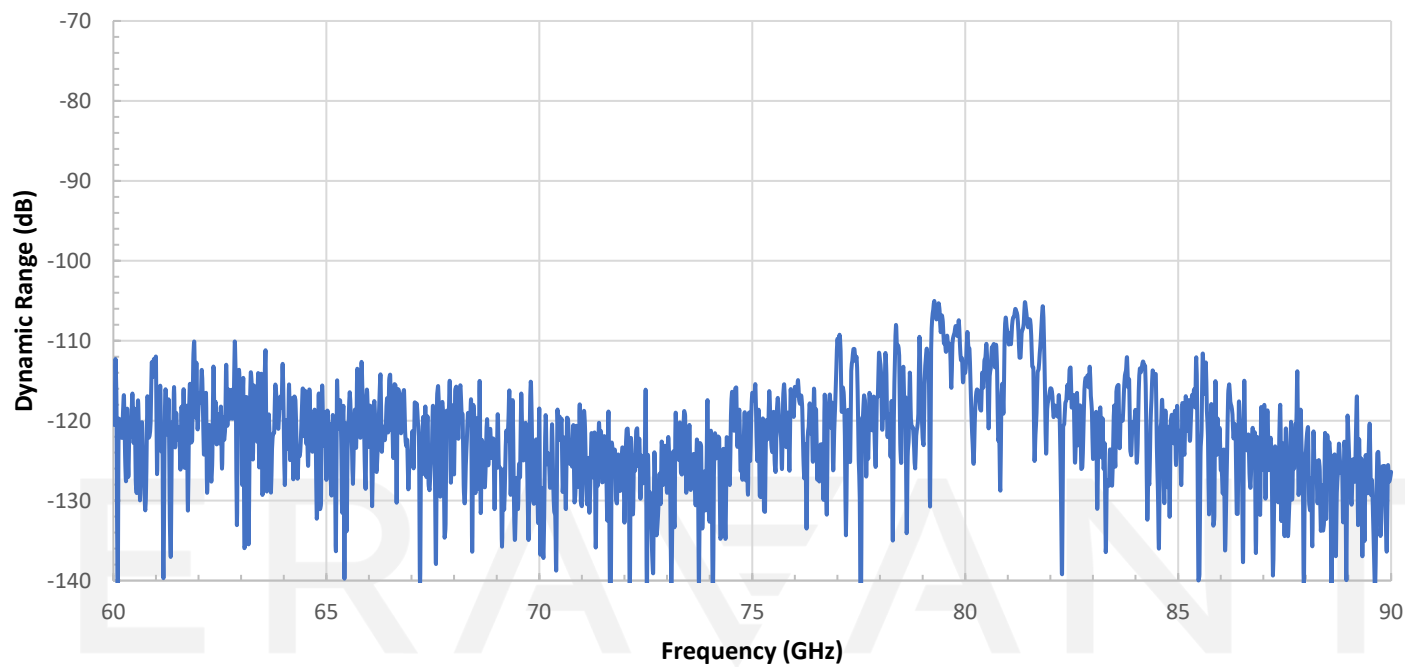
| Item | Eravant Model Number | Quantity |
|---|----------------------|---------------------|
| Proxi-Flange™ Contactless Flange, 1.0" Long | STQ-WG-12010-FB-CF | 1 |
| Proxi-Flange™ Contactless Flange, 2.5" Long | STQ-WG-12025-FB-CF | 1 |
| Waveguide Screws, 3/32 Hex Head | SWH-332-SS-10 | 1 (10 Screws 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. Three (3) cables are required to connect this module with VNA.

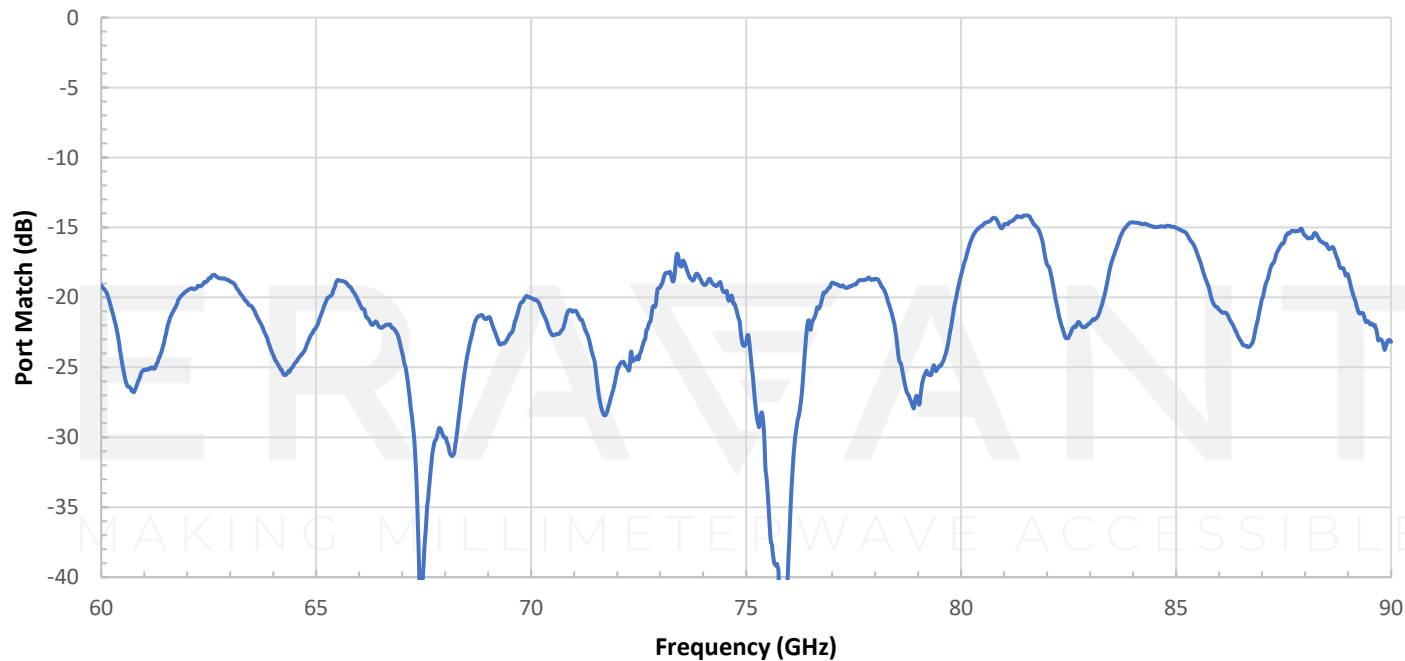
Simplified Block Diagram



Dynamic Range vs. Frequency

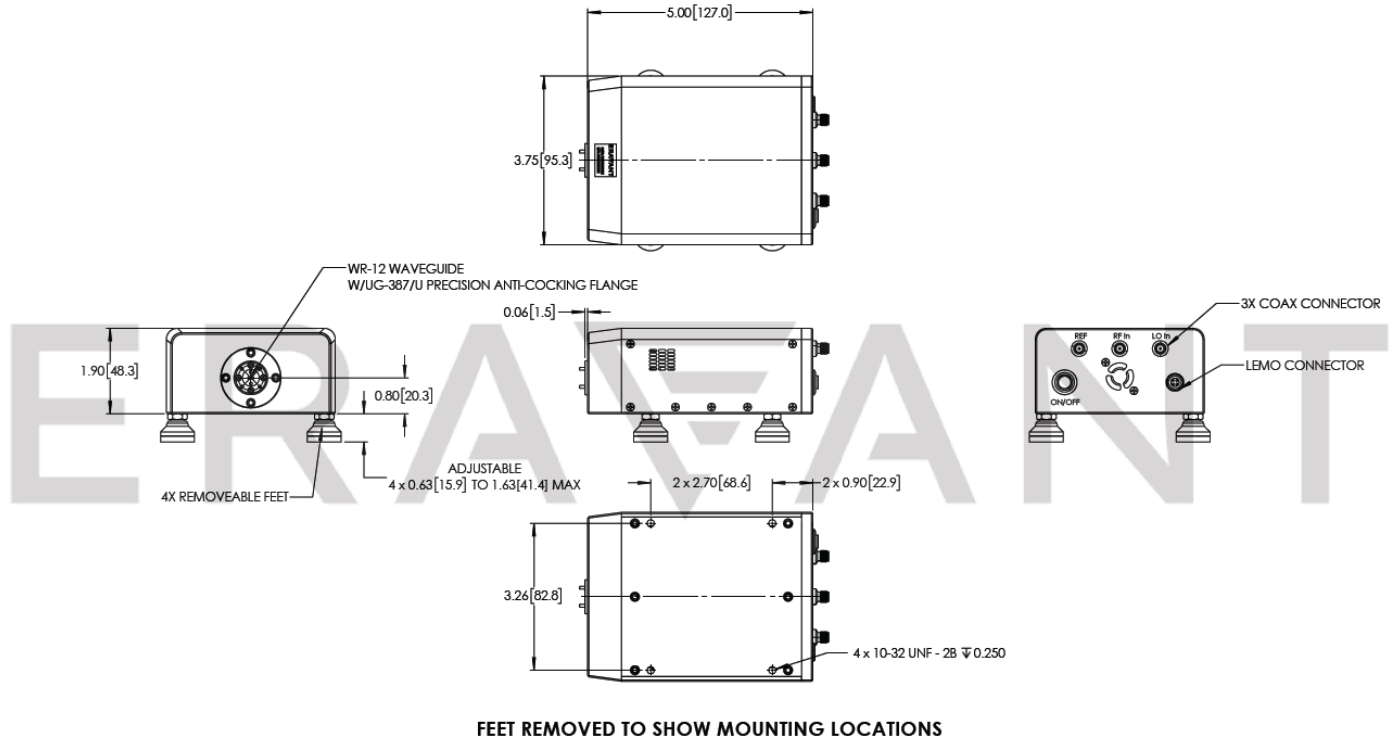


Test Port Match vs. Frequency



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



NOTE:

- To complete a frequency extension set, pair this Rx module with a compatible Tx/Ref or Tx/ Rx module listed in [VNA Frequency Extenders](#) page.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Exceeding absolute maximum ratings will damage the device.
- 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 and may damage the device.