STO-06203N05-C-E2

D-Band ACCESS VNA Frequency Extender

Tx/Rx Module

STO-06203N05-C-E2 is a D-Band vector network analyzer (VNA) frequency extender designed for full 2-port S-parameter measurements from 110 to 170 GHz. The design leverages Eravant proprietary technology to reduce cost without compromising performance. It is compatible with modern VNA from Rohde & Schwarz, Anritsu, Keysight, and Copper Mountain that operate at 20 GHz or higher frequencies. The extended system typically achieves a dynamic range of 100 dB.

To enhance the testing experience, the extenders include 1" and 2.5" waveguide straight sections equipped with Eravant's proprietary **Proxi-Flange™ contactless flanges** (**STQ-WG-06010-FB-CF** & **STQ-WG-06025-FB-CF**). For optimal performance, Eravant recommends pairing the system with its **cal-kit** (**STQ-TO-06-S1-CKIT1**) and the **Wave-Glide™ Rail (STQ-TL-RW-S10-M1)** to complete the VNA test setup.

Each extender is packaged individually in a rugged equipment case and includes additional accessories for setup and operation.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	110 GHz		170 GHz
Test Port Output Power		-5 dBm	
Test Port Input Power (Damage)			+25 dBm
Dynamic Range (10 Hz BW)		100 dB	
Test Port Match		25 dB	
Directivity		25 dB	
RF Source Input Frequency	9.17 GHz		14.17 GHz
RF Source Input Power	-3 dBm	0 dBm	+6 dBm
LO Source Input Frequency	9.17 GHz		14.17 GHz
LO Source Input Power	-3 dBm	+3 dBm	+6 dBm
IF Frequency Range	10 MHz		1000 MHz
RF/LO Multiplication Factor		12	
Magnitude Stability (300 Hz BW)		±0.20 dB	
Phase Stability (300 Hz BW)		±4°	
Specification Temperature	+20°C		+30°C
Operating Temperature	0°C		+50°C

ECCN

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FEATURES

- 110-170 GHz Coverage
- High Dynamic Range
- Built-in Memory for Cal Data
- Input Voltage: 100 to 240 V_{AC}

APPLICATIONS

- VNA Frequency Extension
- S-Parameter Characterization

RECOMMENDED PAIRINGS

- Cal-Kit: STQ-TO-06-S1-CKIT1
- Rail System: Wave-Glide™
- Waveguide Quick Connects
- Cable: SCW-SMSM040-F1-A-PM
- Coax Adapters
- Waveguide to Coax Adapters

RECOMMENDED RESOURCES

- User Manual
- Configuration Guide
- Contactless Flange, Banded WG Setup & Applications
- Proxi-Flange: Conference Papers

Mechanical Specifications:

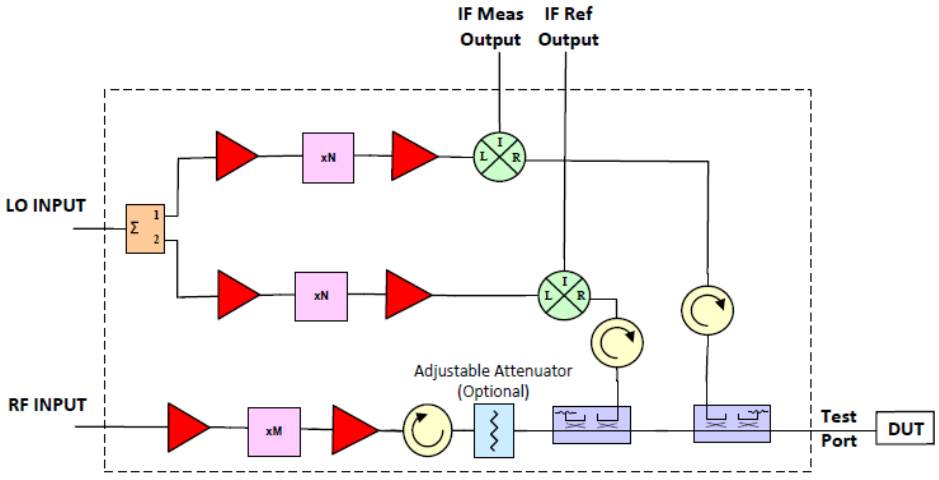
Item	Specification
Test Port	WR-06 Waveguide with UG-387/U-M Precision Anti-Cocking Flange
RF Source Input Port	SMA (F)
LO Source Input Port	SMA (F)
IF Measure Port	SMA (F)
IF Reference Port	SMA (F)
Memory Port	USB-C Socket
DC Power Receptacle	LEMO EGG.0B.304.CLL
Finish	Black Anodized
Weight (Per Module)	2.8 lbs.
Size (Without Adjustable Feet)	8.00” (L) x 3.00” (W) x 1.90” (H)
Outline	TO-SD-A-3

Accessories Included:

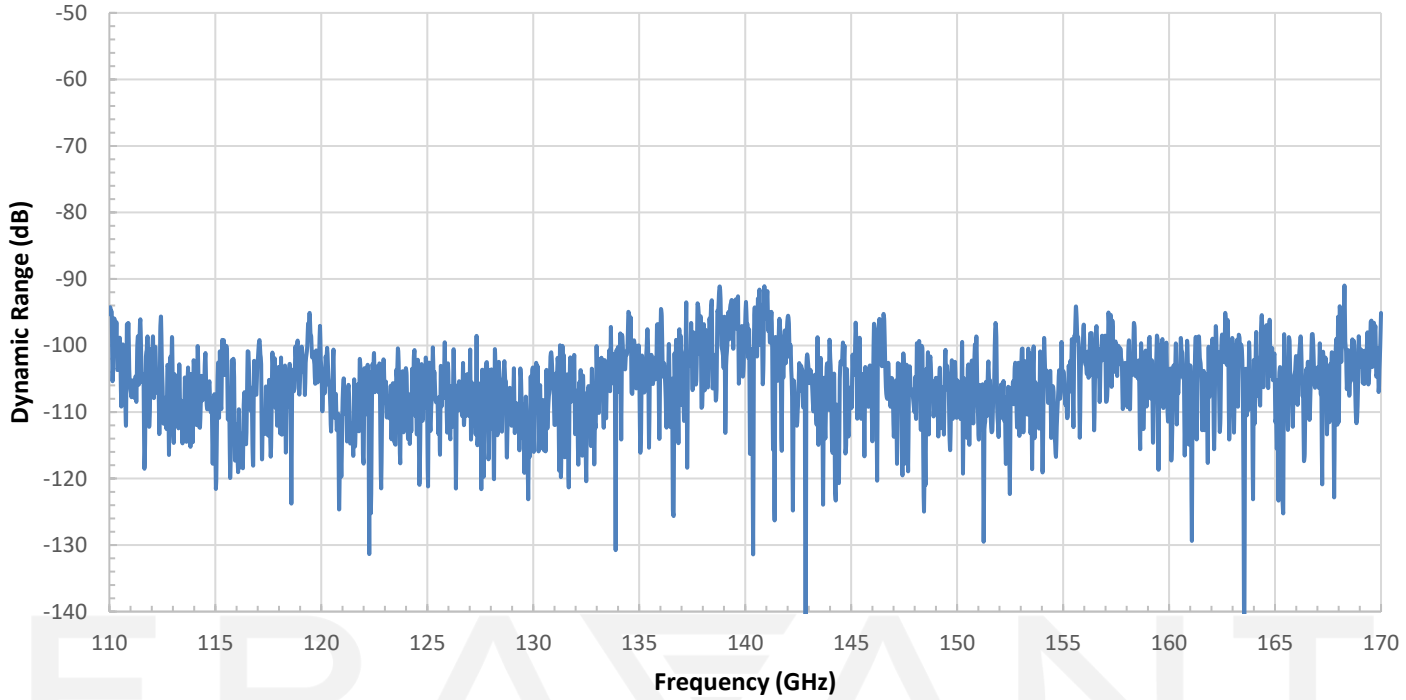
Item	Eravant Model Number	Quantity
Proxi-Flange™ Contactless Flange, 1.0” Long	STQ-WG-06010-FB-CF	1
Proxi-Flange™ Contactless Flange, 2.5” Long	STQ-WG-06025-FB-CF	1
Waveguide Screws, 3/32 Hex Head	SWH-332-SS-10	1 (10 Screws Total)
Waveguide Screwdriver, 3/32 Hex Head	SWH-332-DS	1
Waveguide Screws, 5/64 Hex Head	SWH-564-SS-10	1 (10 Screws Total)
Waveguide Screwdriver, 5/64 Hex Head	SWH-564-DS	1
SMA Connector Torque Wrench	SCH-08008-S1	1
AC-to-DC Power Adapter	STU-110006005-HF	1

Note: Connecting cables are not included. Eravant coaxial cable, model **SCW-SMSM040-F1-A-PM**, is highly recommended. A total of four (4) cables per extender module are required.

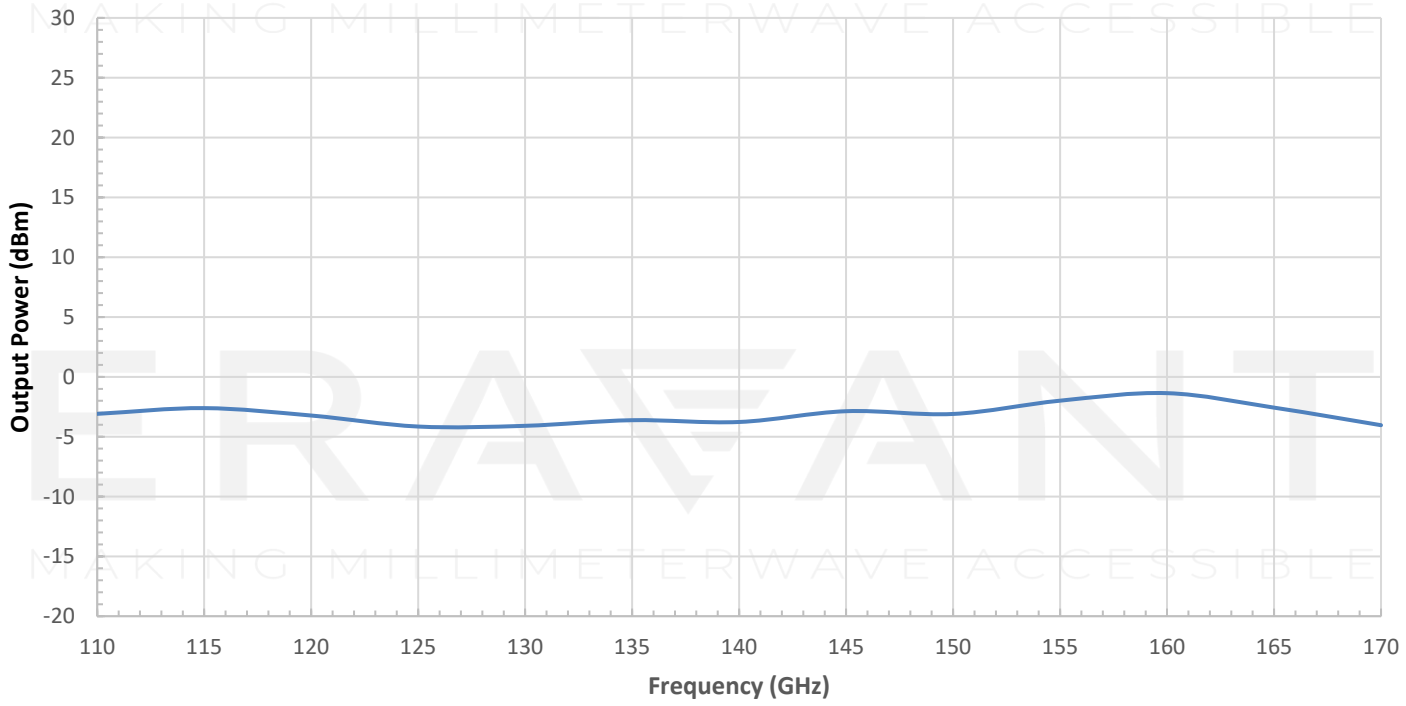
Simplified Block Diagram:



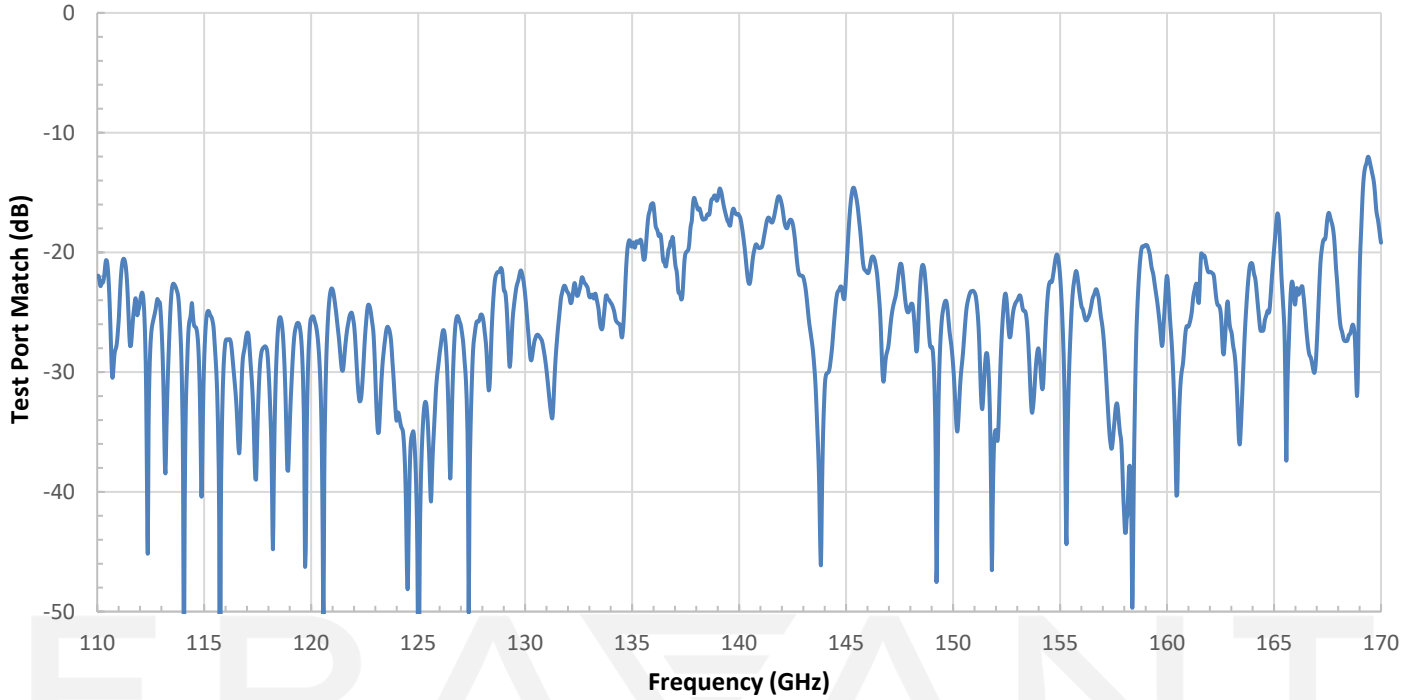
Dynamic Range vs. Frequency



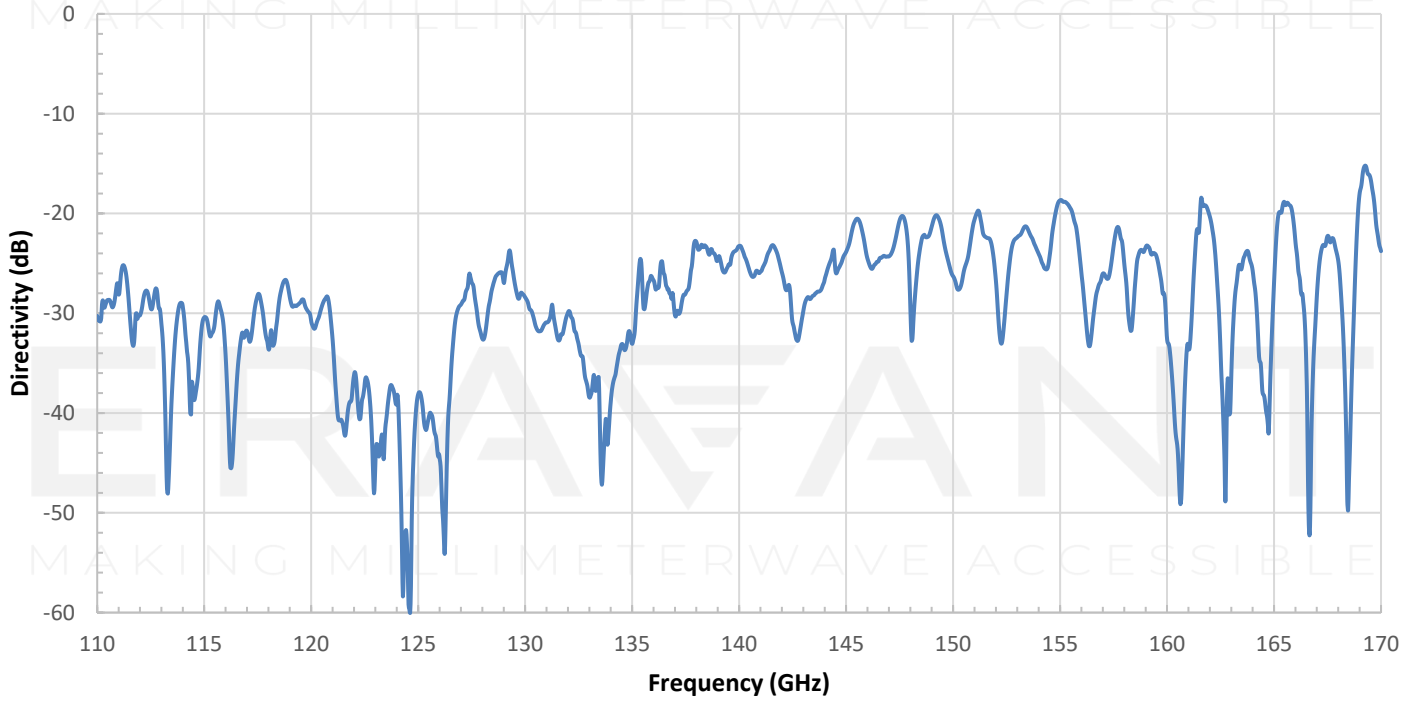
Output Power vs. Frequency



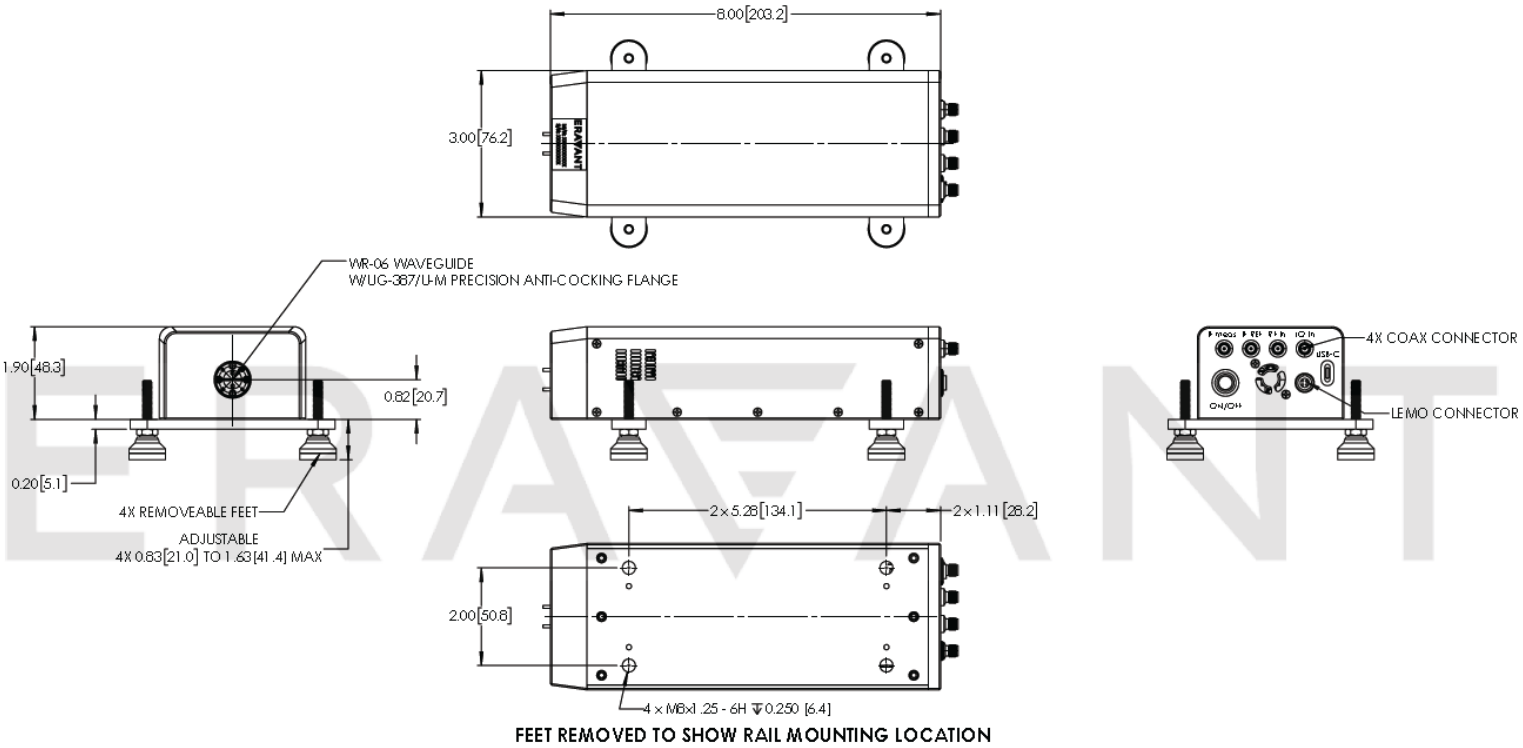
Test Port Match vs. Frequency



Directivity vs. Frequency



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



NOTE:

- Performance plots shown above represent a sample lot performance. Actual data may show some unit-to-unit variation.
- The **STO-06203N05-C-E2** includes only one Tx/Rx extender module. For a version with a micrometer-adjustable attenuator, refer to model **STO-06203N05-CM-E2**.
- Eravant offers calibration services. It is recommended that calibration be performed every 12 months to ensure equipment compliance.
- Connecting cables are not included. The use of Eravant coaxial cables (model **SCW-SMSM040-F1-A-PM**) is highly recommended. A total of four (4) cables per extender head are required.
- Coaxial adapters may be necessary, depending on the connector types on the VNA front panel. Appropriate Eravant adapters are recommended.
- To test a DUT with a coaxial interface, use suitable Eravant waveguide-to-coaxial adapters.
- Operation outside the specified frequency range may result in degraded performance.
- Eravant reserves the right to modify product information without prior notice.

CAUTION:

- Exceeding absolute maximum ratings of the device will damage the extenders.
- 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.