

# ERAVANT

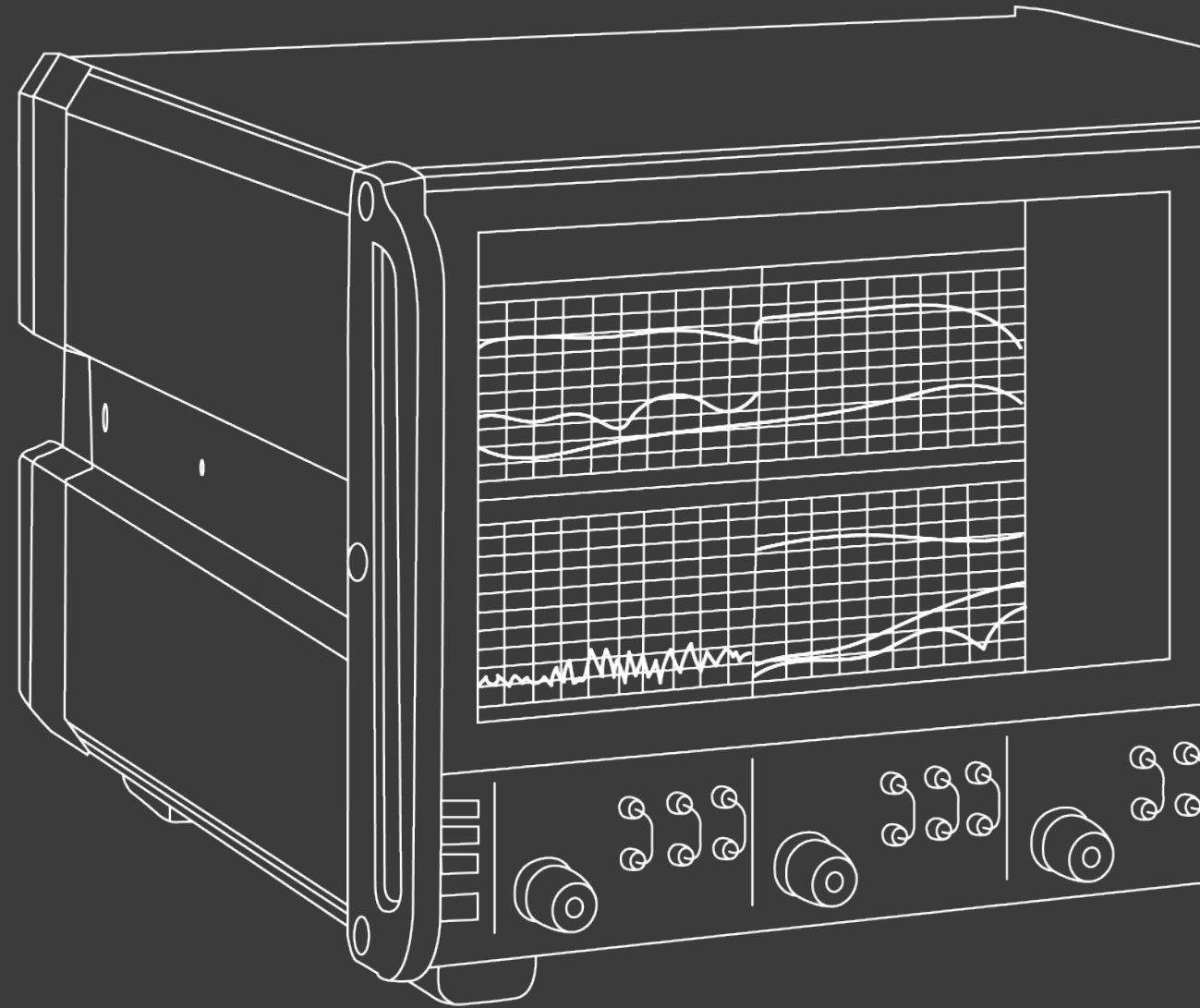
MAKING MILLIMETERWAVE ACCESSIBLE

BROAD BANDWIDTH  
COMPONENTS FOR TEST  
EQUIPMENT



**TACTRON**  
ELEKTRONIK

ERAVANT is supported by TACTRON ELEKTRONIK GmbH & Co. KG



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## **WEBSITE**

# INTRODUCTION

**Eravant** designs and manufactures total solutions for microwave and millimeterwave applications covering 10 MHz to 330 GHz.

- **This presentation introduces Eravant's broadband products suitable for test instrumentation**
- Our full product offering, including Limited Run models, are listed on our website at [www.eravant.com](http://www.eravant.com)

**Additional products and presentations are available upon customer request:**

- Custom models for components and subassemblies can be configured to customer specifications
- Presentations for specific applications such as 5G/6G, IoT, Thermal Vacuum and Space, Communications and Radar are available on-line
- Products in Ka, Q, U, V, E, W, F, D, G and J bands are also described in updated presentations

# ERAVANT PRODUCT OFFERINGS

- Although standard models are not specifically designed and manufactured for Space and Thermal Vacuum applications, many of them are suitable for these and other extreme environments. Examples include:
  - SAR, SAC, SAF, SAH, SAJ, SAP, SAT and SAZ antenna families
  - SWG, SWB, SWW, SWT, SWF, SWI, SWH, SWR, SWD, SWX, SWM and SWF waveguide components
  - SUF Uni-Guide™ Waveguide Connectors
  - Models with the “V” suffix are qualified for Thermal Vacuum applications
  - Includes antennas, isolators, attenuators, couplers, adapters and subassemblies
- Many models can be adapted for Space and TVAC applications by simply updating the manufacturing process using “no-out-gassing” materials such as adhesives, OFHC copper or stainless steel, etc.



# ANTENNAS

# STANDARD GAIN HORN ANTENNA

**FAMILY: SAZ**  
18 to 330 GHz

14 Models Cover Full Waveguide Bands Up To 330 GHz



**SAZ-2410-05-S1**  
140 to 220 GHz, 24 dBi



**SAZ-2410-10-S1**  
75 to 110 GHz, 24 dBi

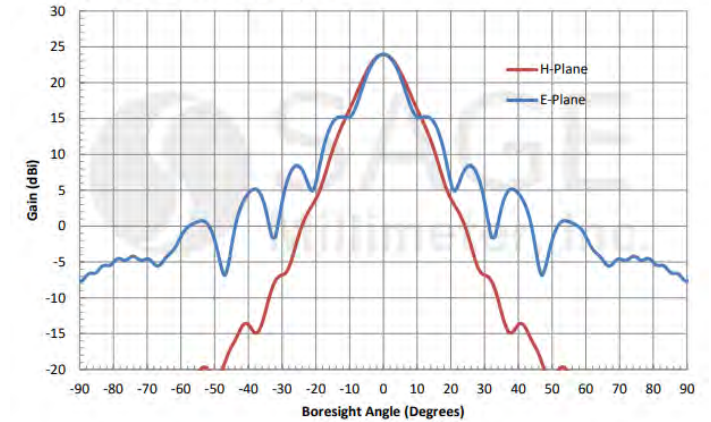


**SAZ-2410-15-S1**  
50 to 75 GHz, 24 dBi

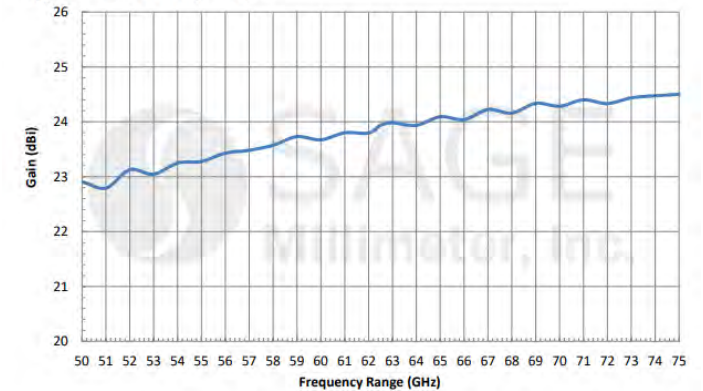


**SAZ-2410-28-S1**  
26.5 to 40 GHz, 24 dBi

Typical Antenna Patterns @ 62.5 GHz



Typical Gain vs. Frequency



# SCALAR FEED HORN ANTENNA

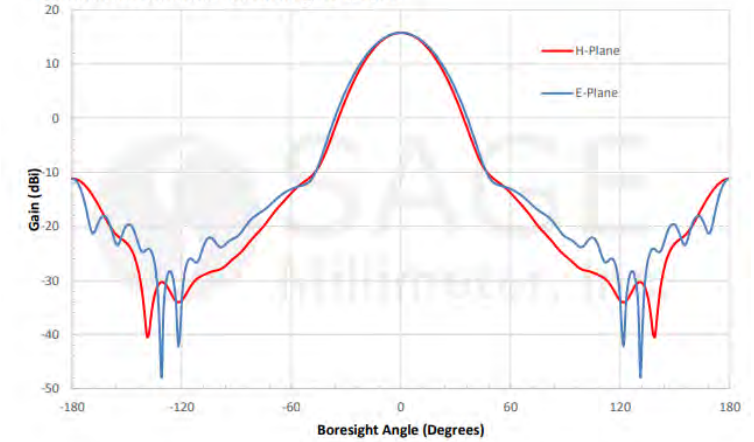
**FAMILY: SAF**  
18 to 220 GHz

More Than 60 Models – Full Waveguide Bandwidth

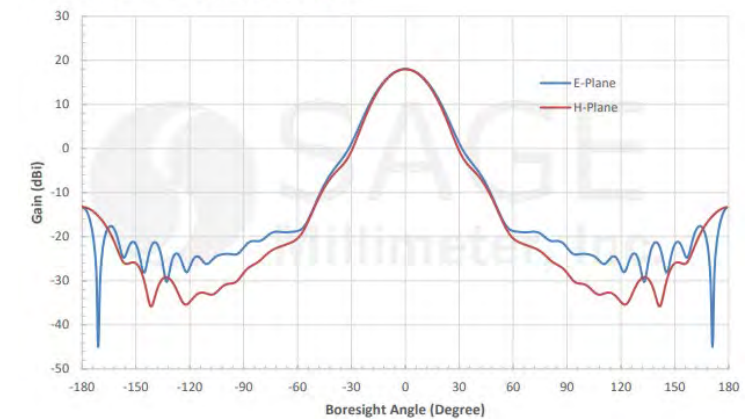


**SAF-1141741535-082-S1**  
110 to 170 GHz, 15 dB

Simulated Antenna Patterns @ 140 GHz



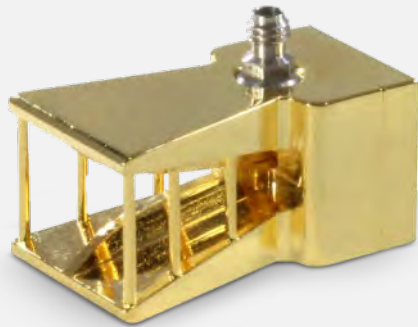
Simulated Antenna Patterns @ 33 GHz



# DUAL RIDGED HORN ANTENNA LINEARLY POLARIZED

**FAMILY: SAV**  
1 to 110 GHz

## 6 Models with Multi-Octave Bandwidth



**SAV-1431141535-1F-U5**  
14 to 110 GHz



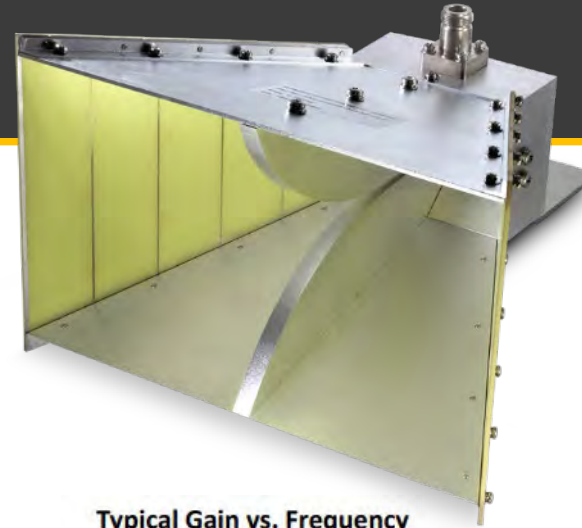
**SAV-0636731522-VF-U5**  
6 to 67 GHz



**SAV-0636731429-VF-S1**  
6 to 67 GHz

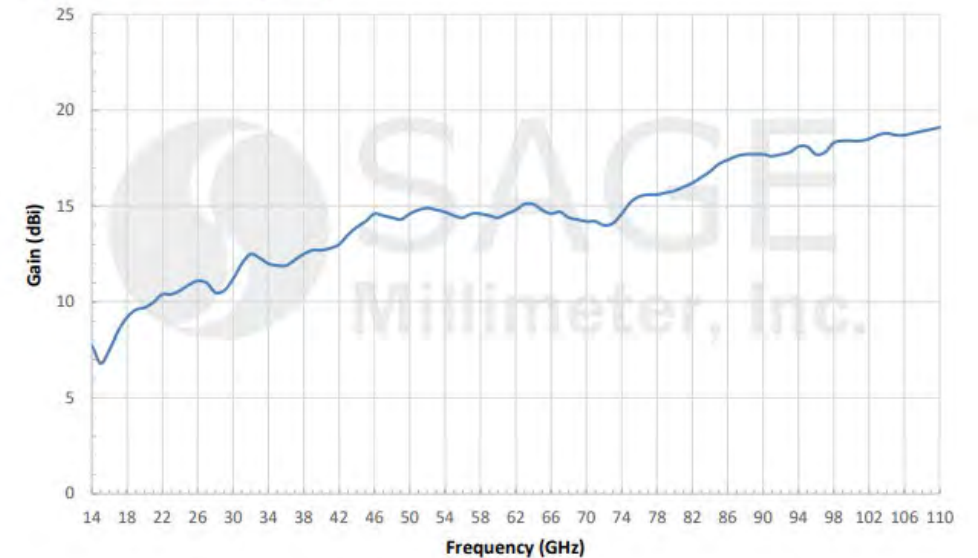


**SAV-0434031427-KF-U5**  
4 to 40 GHz



**SAV-0131831040-NF-U2**  
1 to 18 GHz

Typical Gain vs. Frequency





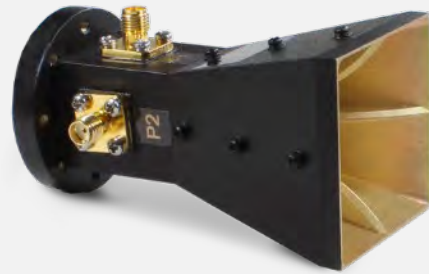
# QUAD RIDGE DUAL POLARIZED SQUARE ANTENNA

**FAMILY: SAV**  
1 to 67 GHz

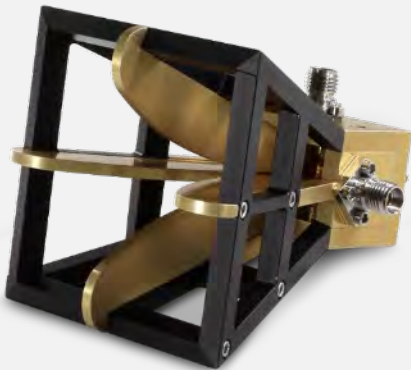
## 10 Models with Multi-Octave Bandwidth



**SAV-0130430883-SF-U4-QR**  
1 to 4 GHz



**SAV-0632531431-SF-U3-QR**  
6 to 25 GHz

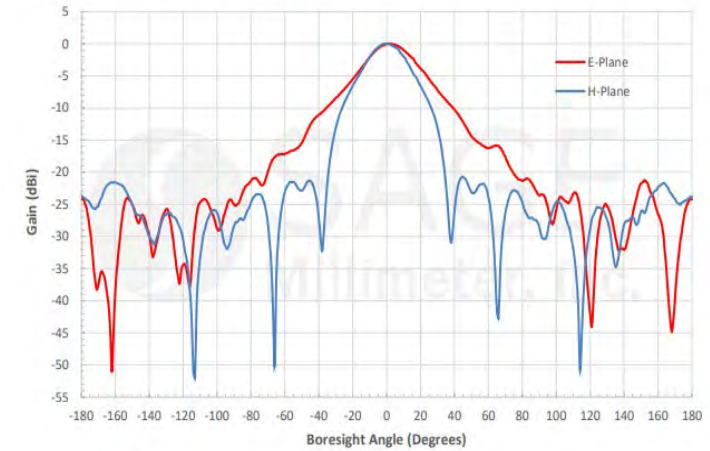


**SAV-0434031428-KF-U5-QR**  
6 to 67 GHz

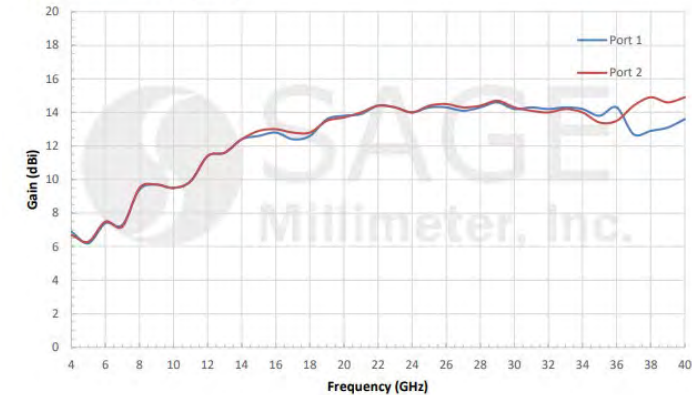


**SAV-0535031140-2F-U5-QR**  
5 to 50 GHz

Typical Antenna Pattern @ 22 GHz



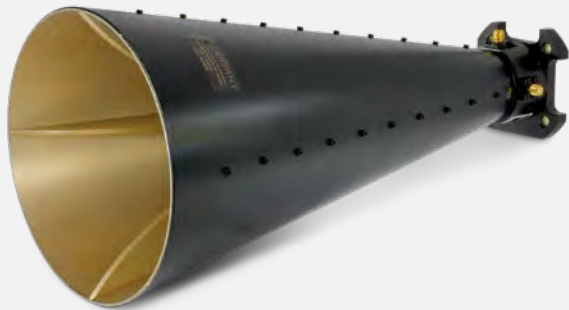
Typical Gain vs. Frequency



# QUAD RIDGED DUAL POLARIZED CIRCULAR ANTENNA

**FAMILY: SAC**  
1 to 40 GHz

6 Models: Wide Bandwidth



**SAC-0231831225-SF-S4-DP**  
2 to 18 GHz



**SAC-0432431235-SF-S4-DP-RD**  
4 to 24 GHz



**SAC-1834031621-KF-S5-DP**  
18 to 40 GHz



**SAC-2734031517-KF-S5-D**  
27 to 40 GHz

Typical Antenna Pattern @ 12 GHz



Measured Isolation vs. Frequency



# DUAL POLARIZED SCALAR HORN ANTENNA

**FAMILY: SAF**  
23 to 170 GHz

16 Models: Waveguide Bandwidth

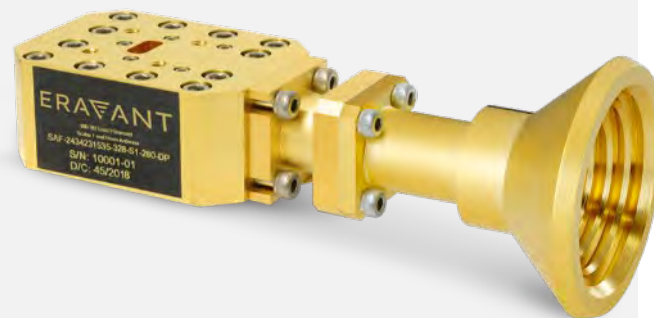


**SAF-1141741525-082-S1-065-DP**  
110 to 170 GHz

**SAF-6039031340-141-S1-122-DP**  
60 to 90 GHz

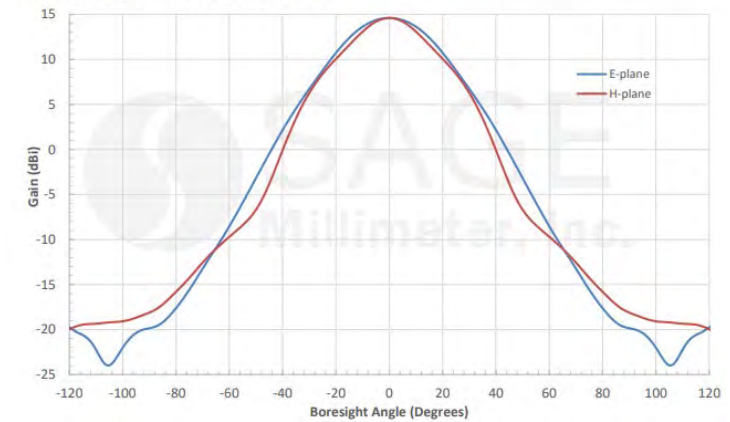


**SAF-4036031340-219-S1-188-DP**  
40 to 60 GHz

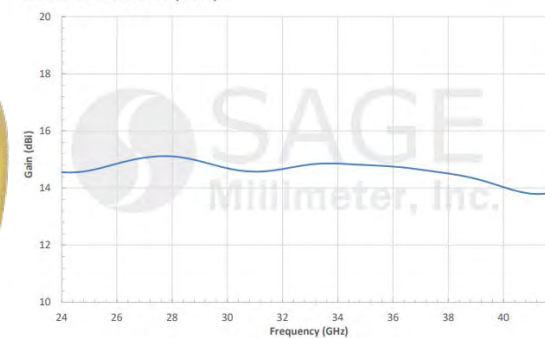


**SAF-2434231535-328-S1-280-DP**  
24 to 42 GHz

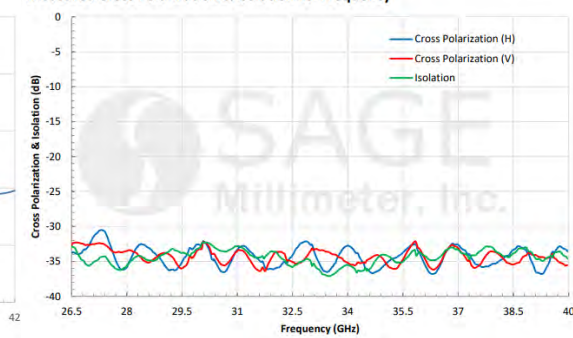
Simulated Antenna Patterns @ 30 GHz



Simulated Gain vs. Frequency



Measured Cross Polarization & Isolation vs. Frequency



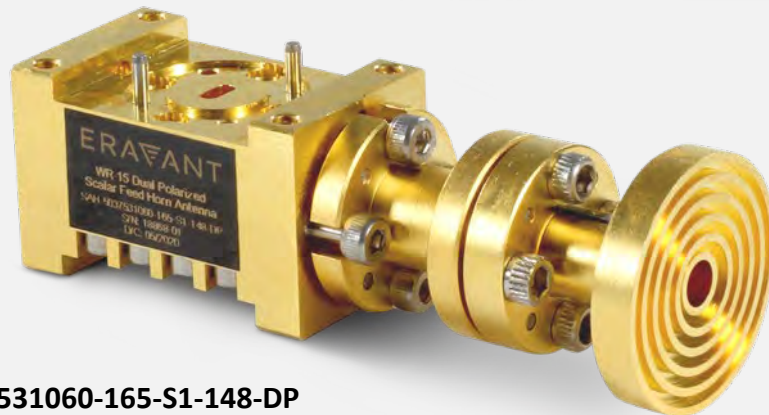
# DUAL POLARIZED CHOKE HORN ANTENNA

**FAMILY: SAH**  
24 to 110 GHz

## 4 Models: Full Waveguide Bandwidth

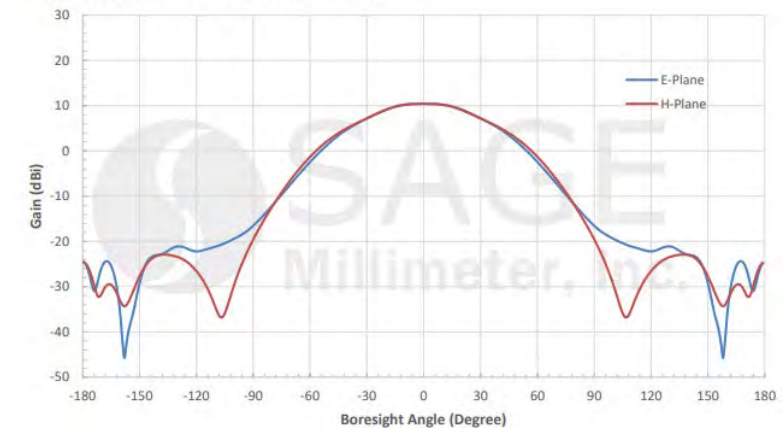


**SAH-7531141060-110-S1-100-DP**  
75 to 110 GHz

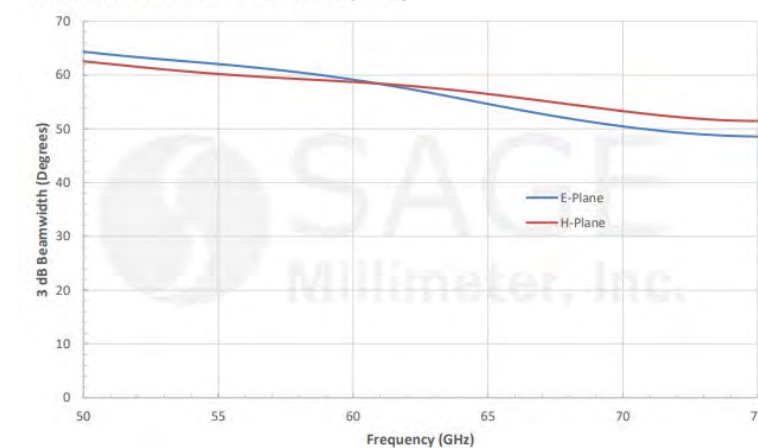


**SAH-5037531060-165-S1-148-DP**  
50 to 75 GHz

Simulated Antenna Patterns @ 62 GHz



Simulated 3 dB Beamwidth vs. Frequency



# OMNIDIRECTIONAL ANTENNA

**FAMILY: SAO**  
26.5 to 140 GHz

More Than 20 Models: Full Waveguide Bandwidth



SAO-9031440345-08-S1  
90 to 140 GHz



SAO-6039030230-12-S1  
60 to 90 GHz

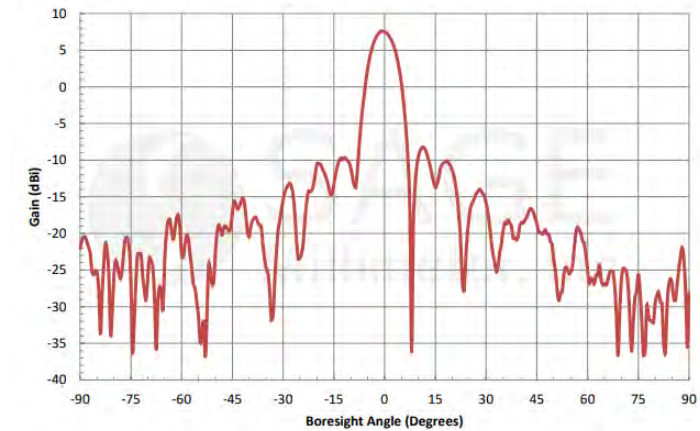


SAO-2734030345-28-S1  
26.5 to 40 GHz

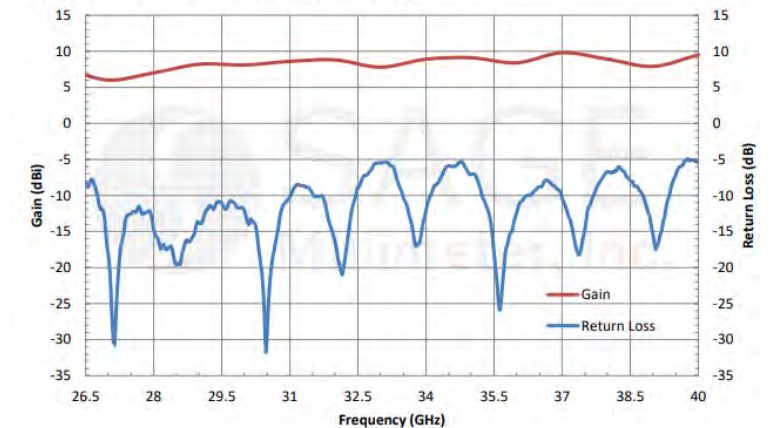


SAO-2734030810-28-S1  
26.5 to 40 GHz

Typical E-Plane Antenna Pattern @ 33 GHz



Typical Gain and Return Loss vs. Frequency



# AMPLIFIERS

# ULTRA BROADBAND AMPLIFIER

**FAMILY: SBB**  
10 MHz to 95 GHz

More Than 30 Models: Up to 95 GHz



**SBB-5039532510-1F1F-S1**  
50 to 95 GHz



**SBB-0115033218-2F2F-E3**  
10 MHz to 50 GHz



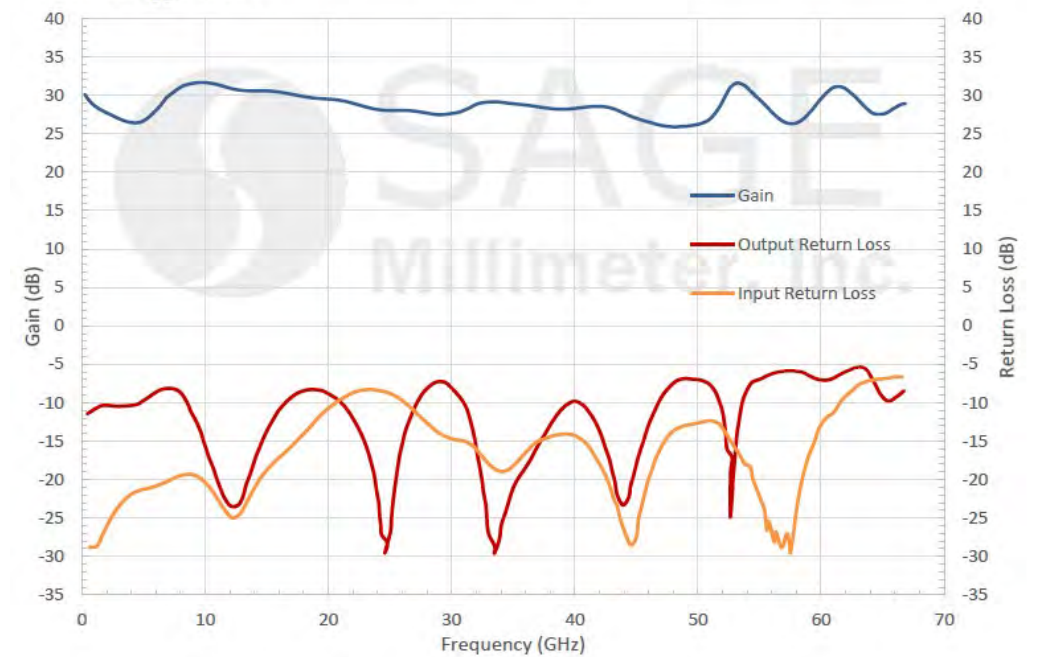
**SBB-1834232815-KFKF-E3**  
18 to 42 GHz



**SBB-1834034018-KFKF-E3**  
18 to 40 GHz

## Typical Gain and Return Loss vs. Frequency

Bias: +12 V<sub>DC</sub>/600 mA



# BROADBAND LOW NOISE AMPLIFIER

**FAMILY: SBL**  
0.3 to 270 GHz

More Than 100 Models: Up To Full Waveguide Bandwidth



**SBL-2242741585-0303-E1**  
220 to 270 GHz



**SBL-7531143550-1010-E1**  
75 to 110 GHz



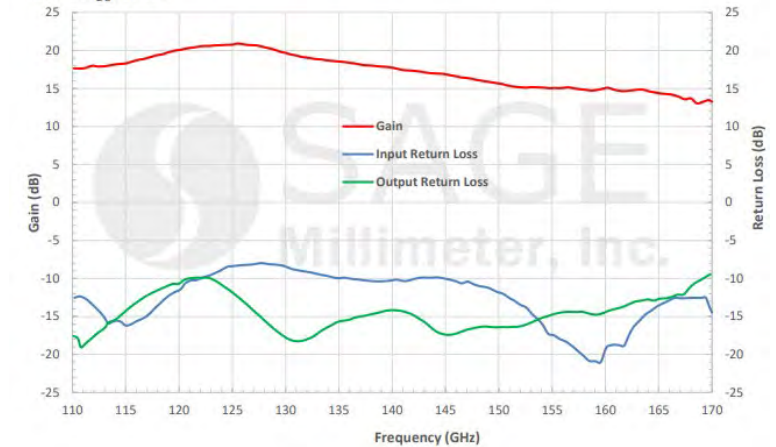
**SBL-5539532560-1212-E1**  
55 to 95 GHz



**SBL-3335033040-2222-E1**  
33 to 50 GHz

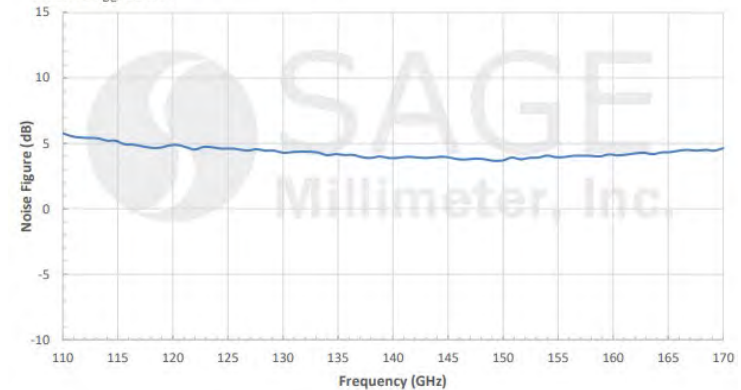
Typical Performance vs. Frequency

Bias: +3V<sub>DC</sub>/60 mA



Typical Noise Figure vs Frequency

Bias: +3V<sub>DC</sub>/60 mA





# BROADBAND POWER AMPLIFIER

**FAMILY: SBP**  
18 to 230 GHz

More Than 200 Models: Up To Full Waveguide Bandwidth



**SBP-2142341507-0404-E1**  
210 to 230 GHz



**SBP-6039032516-1212-S1**  
60 to 90 GHz



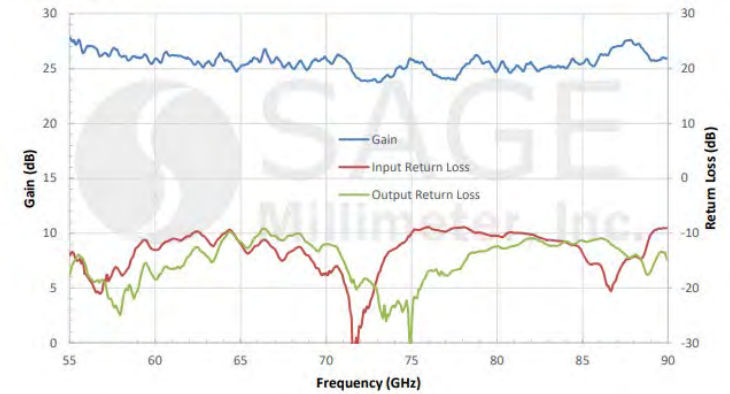
**SBP-3335034520-2222-E1**  
33 to 50 GHz



**SBP-2734034526-2828-E1**  
26.5 to 40 GHz

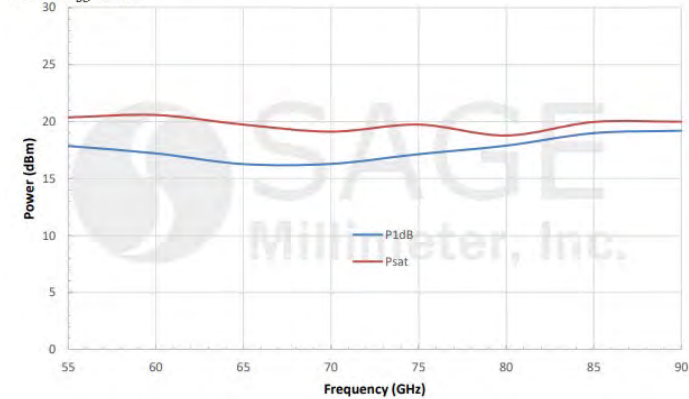
Typical Gain and Return Loss vs. Frequency

Bias: +8 V<sub>DC</sub>/603 mA



Typical Power vs. Frequency

Bias: +8 V<sub>DC</sub>/750 mA

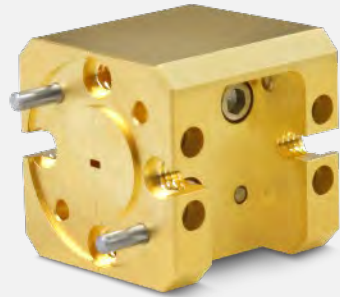


# MULTIPLIERS

# BROADBAND PASSIVE MULTIPLIER

**FAMILY: SFA**  
22 to 330 GHz

More Than 40 Models: Up To Full Waveguide Bandwidth



**SFP-03310-UEB**  
220 to 330 GHz



**SFP-05210-S2**  
140 to 220 GHz



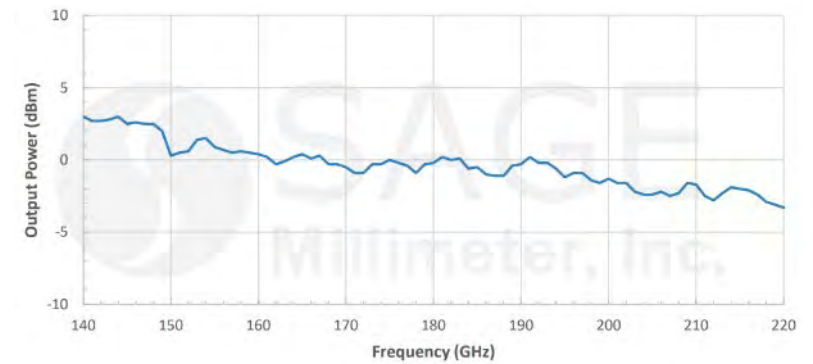
**SFP-104KF-S2**  
75 to 110 GHz



**SFP-243423303-28SF-S1**  
24 to 42 GHz

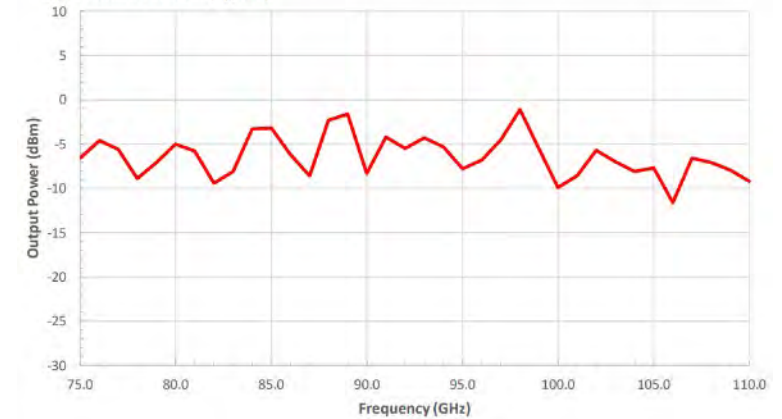
Typical Output Power vs. Frequency

$P_{in} = +16$  dBm



Typical Output Power vs Frequency

Input Power: +17 dBm (Typical)



# BROADBAND ACTIVE MULTIPLIER

**FAMILY: SFA**  
20 to 220 GHz

More Than 150 Models: Up To Full Waveguide Bandwidth



**SFA-753114616-10SF-E1**  
75 to 110 GHz



**SFA-194224208-0510-E1**  
190 to 220 GHz



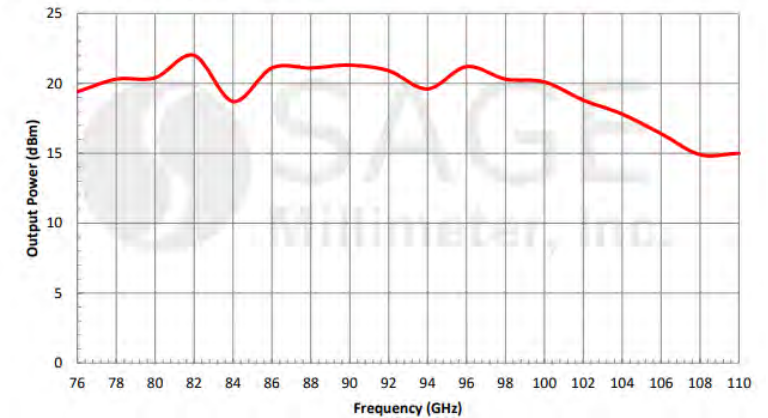
**SFA-194SF-E1**  
40 to 60 GHz



**SFA-282SF-E1**  
26.5 to 40 GHz

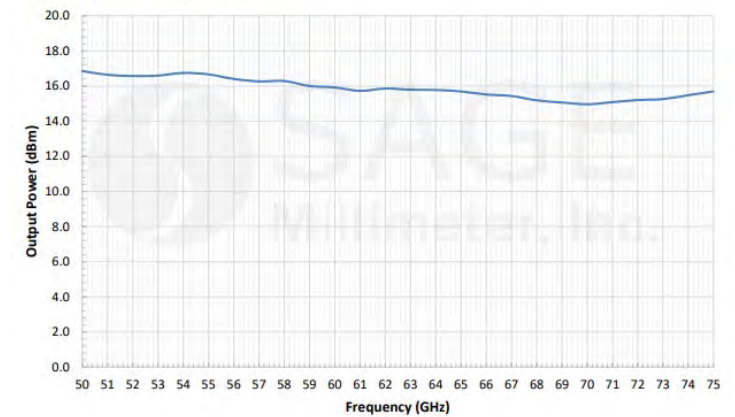
**Typical Output Power vs. Frequency**

Bias: +13 V<sub>DC</sub>/550 mA, Input Power: +3 dBm



**Typical Output Power vs. Frequency**

Bias: +8 V<sub>DC</sub>/550 mA; Input Power: +3 dBm



# CONVERTERS

# BROADBAND BALANCED MIXER

**FAMILY: SFB**  
11 to 220 GHz

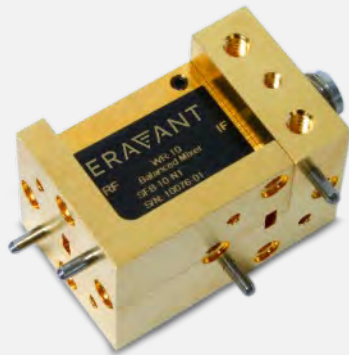
More Than 30 Models: Full Waveguide Bandwidth



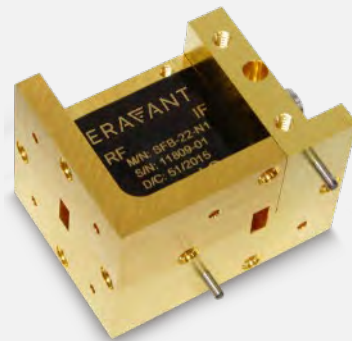
**SFB-05-E2**  
140 to 220 GHz



**SFB-06-E2**  
110 to 170 GHz



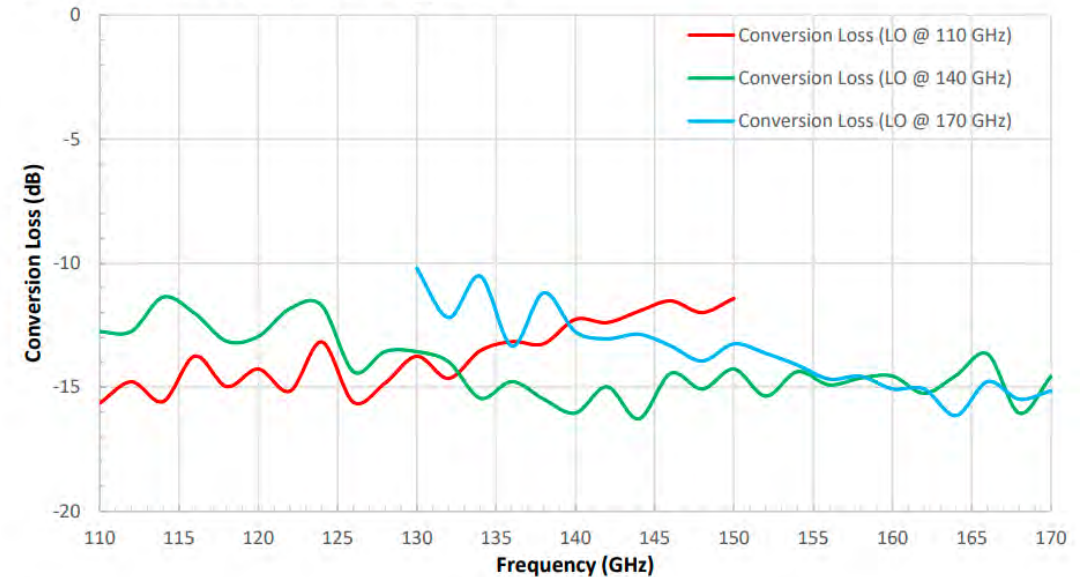
**SFB-10-N1**  
75 to 110 GHz



**SFB-22-N1**  
33 to 50 GHz

## Typical Conversion Loss vs. Frequency

RF: -20 dBm; LO: +3 dBm, Bias: +5 V<sub>DC</sub>/1 mA



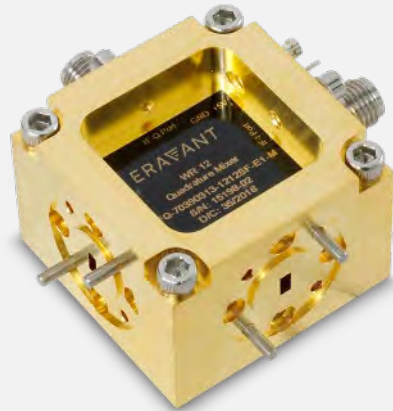
# QUADRATURE MIXER

**FAMILY: SFS**  
20 to 112 GHz

More Than 25 Models



**SFQ-11411415-0808SF-N1**  
110 to 112 GHz



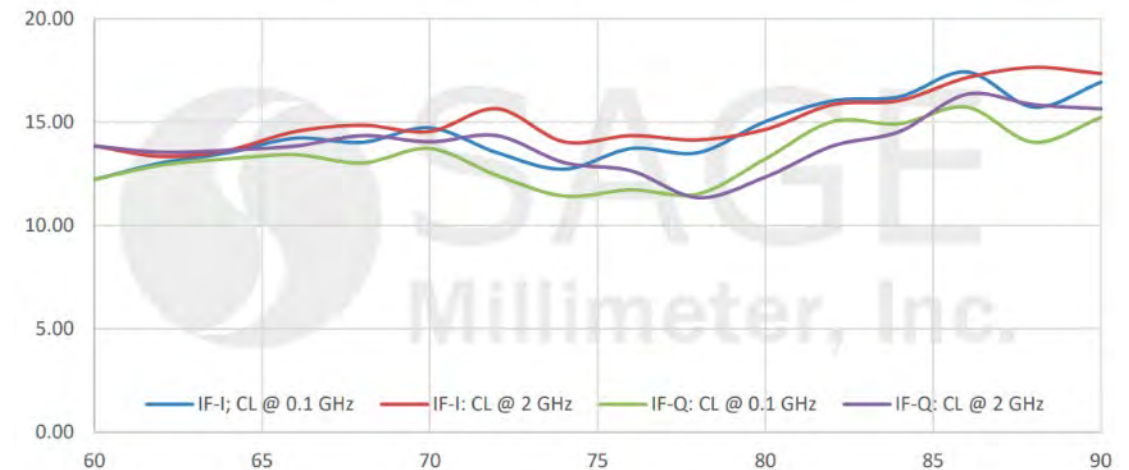
**SFQ-60390315-1212SF-E1-M**  
60 to 90 GHz



**SFQ-40360312-1919SF-N1-M**  
40 to 60 GHz

## Typical Conversion Loss vs. LO Frequency

Bias: +5Vdc/1mA, RF= -20 dBm, LO= +10 dBm



# DETECTORS



# BROADBAND AMPLITUDE DETECTOR

**FAMILY: SFD**  
18 to 220 GHz

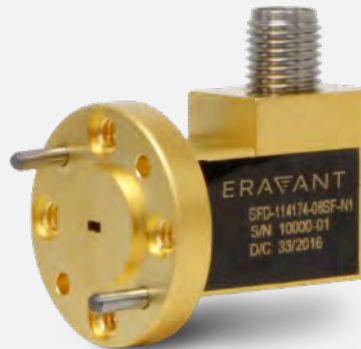
More Than 20 Models: Full Waveguide Bandwidth



**SFD-144224-05SF-N1**  
140 to 220 GHz

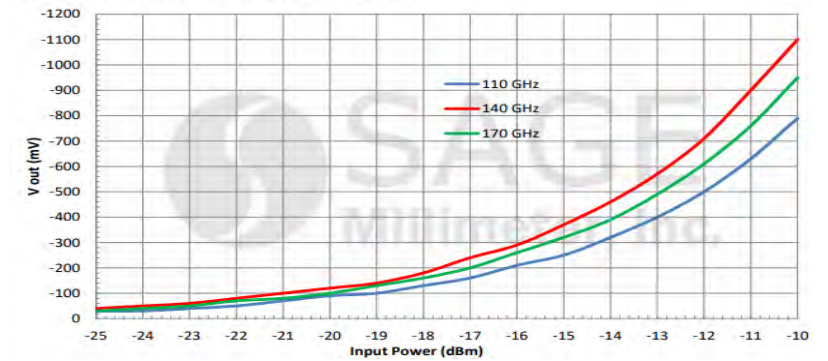


**SFD-753114-10SF-N1**  
75 to 110 GHz

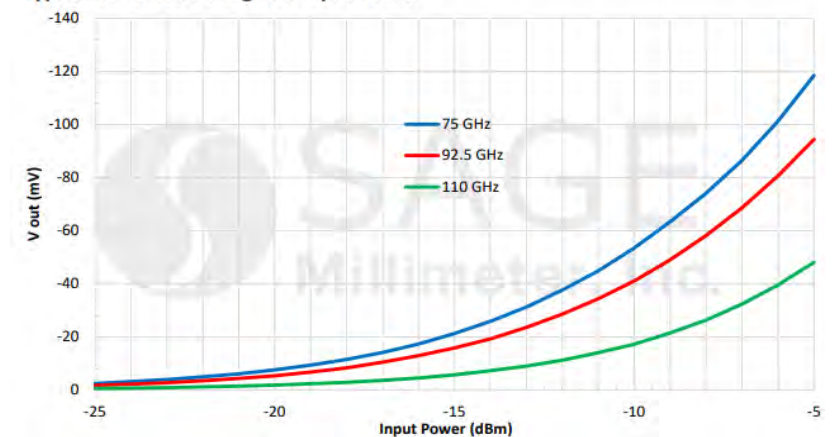


**SFD-114174-06SF-N1**  
110 to 170 GHz

Typical Detected Voltage vs. Input Power



Typical Detected Voltage vs. Input Power

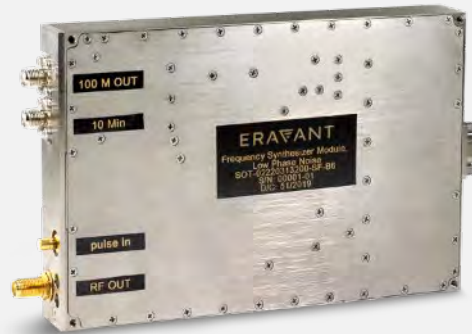


# SYNTHESIZERS

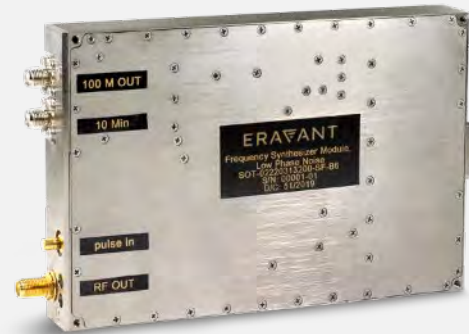
# FREQUENCY SYNTHESIZER

**FAMILY: SOT**  
100 MHz to 20 GHz

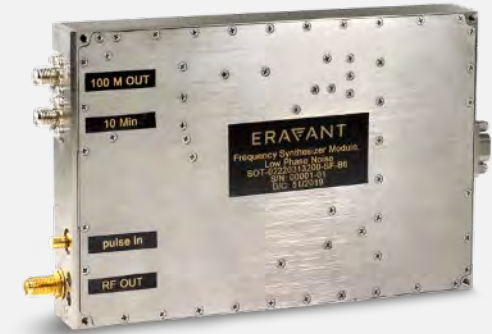
## 3 Models: Two-Decade Bandwidth



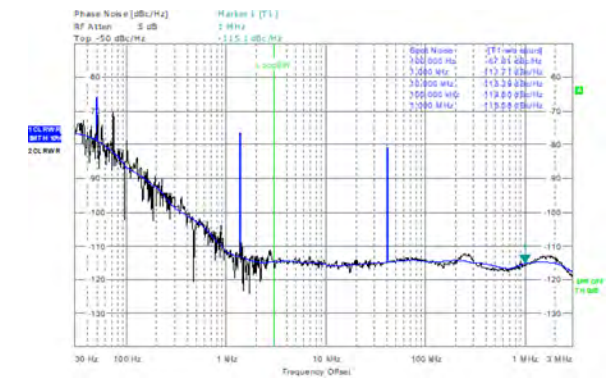
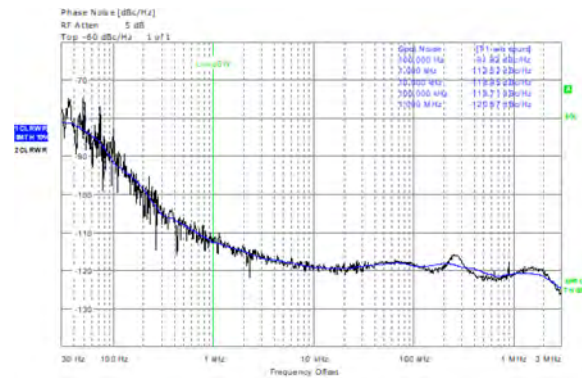
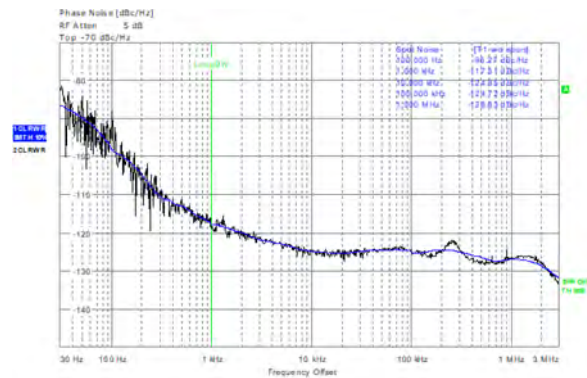
**SOT-01210313200-SF-B6**  
100 MHz to 10 GHz  
Low Phase Noise



**SOT-02215300200-SF-E6**  
200 MHz to 20 GHz  
High Speed



**SOT-02220313200-SF-B6**  
200 MHz to 20 GHz  
Low Phase Noise



# CONTROL DEVICES

# PIN DIODE ATTENUATOR

**FAMILY: SKA**  
18 to 110 GHz

More Than 20 Models: Full Waveguide Bandwidth



**SKA-7531142520-1010-A1**  
75 to 110 GHz

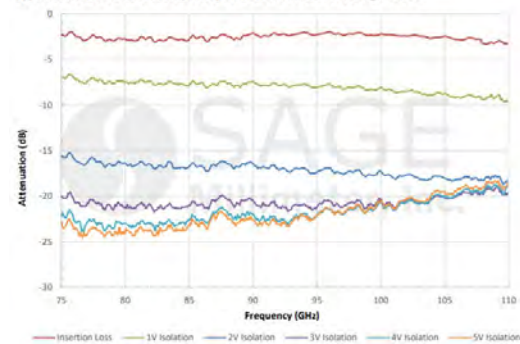


**SKA-6039033030-1212-A1**  
60 to 90 GHz

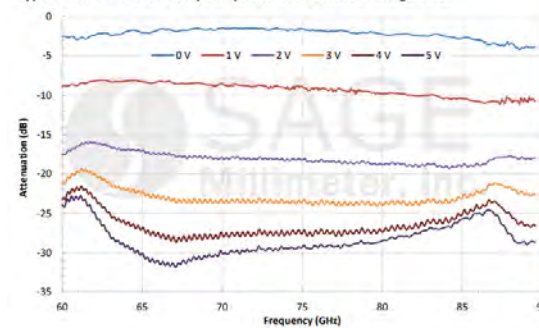


**SKA-5037533030-1515-A1**  
50 to 75 GHz

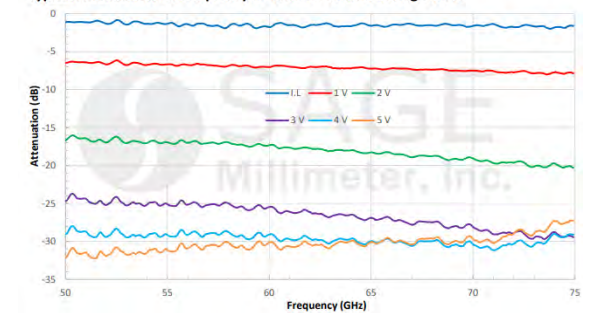
Typical Attenuation vs. Frequency at Various Control Voltage Value



Typical Attenuation vs. Frequency at Various Control Voltage Value



Typical Attenuation vs. Frequency at Various Control Voltage Value



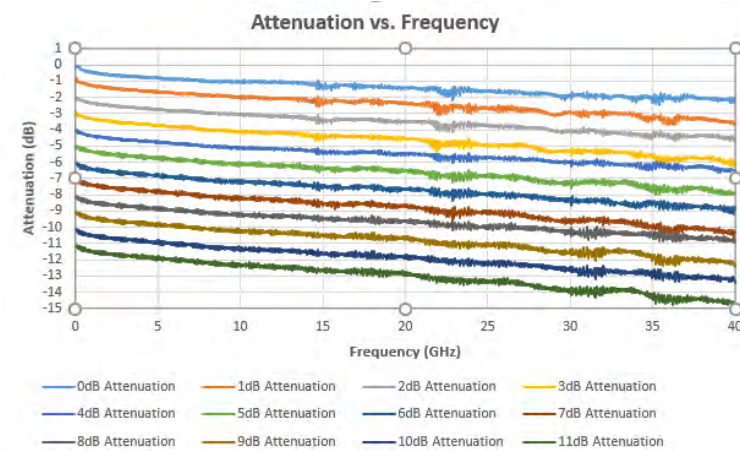
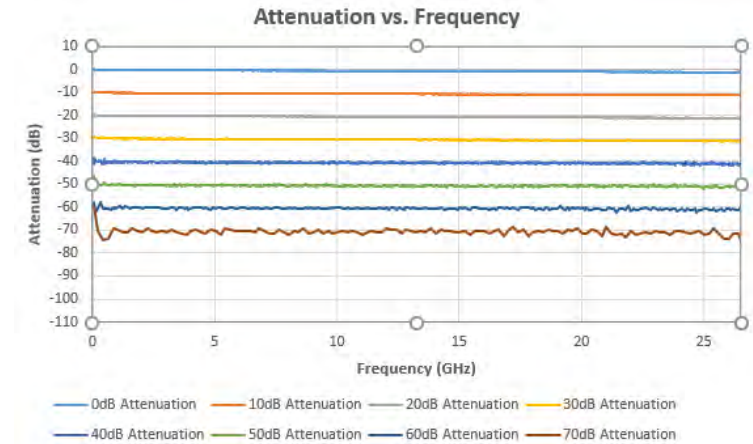
# COAXIAL PROGRAMMABLE ATTENUATOR

**FAMILY: STA**  
DC to 50 GHz, Up to 110 dB

More Than 15 Models: 1 dB, 5 dB, 10 dB Step Size

## Features:

- DC to 50 GHz Coverage
- High Attenuation Value up to 110 dB
- Step Size, 1 dB, 5 dB and 10 dB Available
- TTL Control via Logic Table
- Low DC Power Once Latching



# WAVEGUIDE DIRECT READING AND PROGRAMMABLE ATTENUATOR

**FAMILY: STA**  
50 to 330 GHz

More Than 10 Models: Full Waveguide Bandwidth



**STA-40-03-S1**  
220 to 330 GHz

Parameter	Minimum	Typical	Maximum
Frequency Range	220 GHz		330 GHz
Insertion Loss		4.5 dB	
Attenuation Range	0 dB		40 dB
Attenuation Accuracy	0.25 dB or 4.5% of reading, whichever is larger, up to 40 dB		
Attenuation Resolution	0.1 dB from 0 to 10 dB, 0.2 dB from 10 to 30 dB, 0.5 dB from 30 to 40 dB		
Return Loss		15 dB	
Operating Voltage	+24 V <sub>DC</sub> (100 to 240 V <sub>AC</sub> Adapter is Supplied)		
Power Handling			10 mW (CW)
Specification Temperature		+25 °C	
Operating Temperature	+5 °C		+35 °C

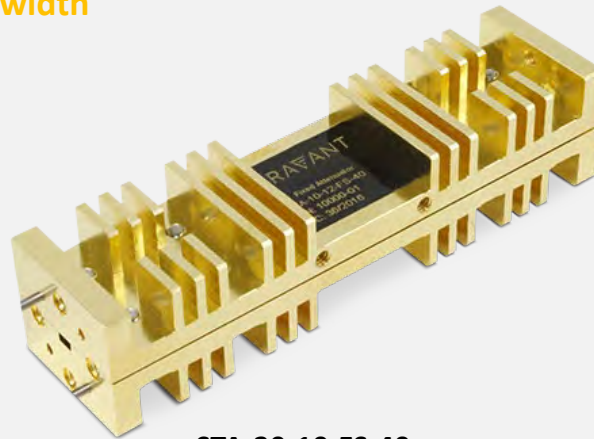
# WAVEGUIDE FIXED ATTENUATOR

**FAMILY: STA**  
18 to 330 GHz

More Than 140 Models: Full Waveguide Bandwidth



**STA-30-03-F1**  
220 to 330 GHz, 30 dB

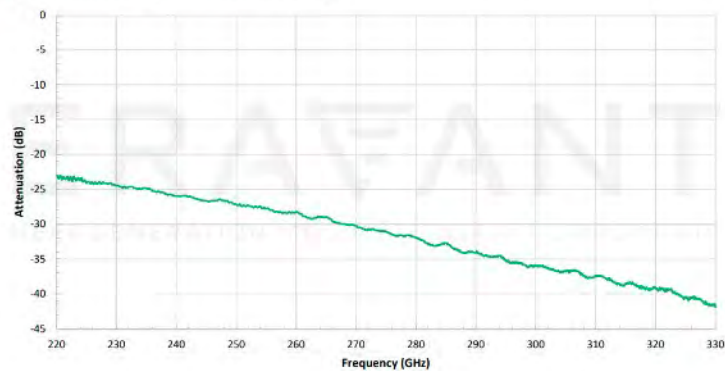


**STA-30-10-FS-40**  
75 to 110 GHz, 10 Watts



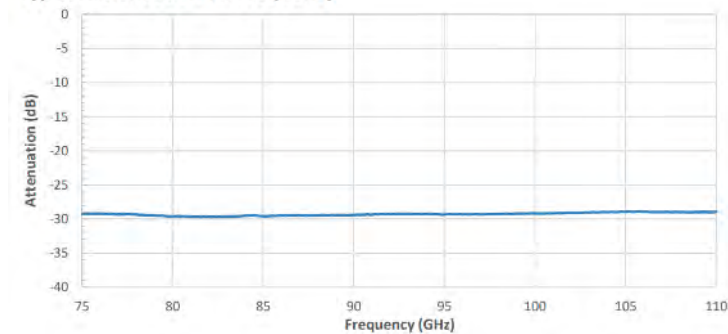
**STA-30-28-F2**  
26.5 to 40 GHz, 30 dB

Typical Measured Attenuation vs Frequency



W-Band Fixed Attenuator, 30 dB, 10 Watts

Typical Attenuation vs. Frequency





# PIN DIODE SPST SWITCH

**FAMILY: SKS**  
0.5 to 290 GHz

More Than 10 Models: Full Waveguide Bandwidth



**SKS-2242946035-0303-R1-M**  
220 to 290 GHz



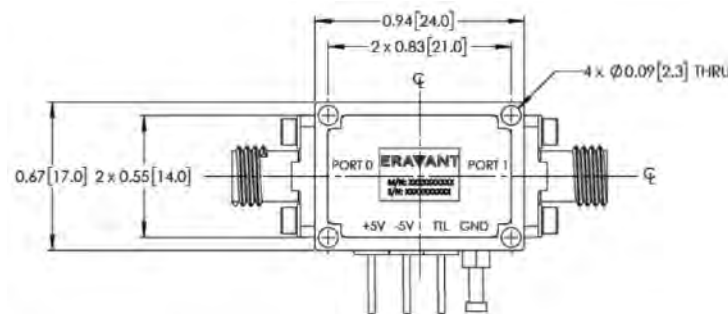
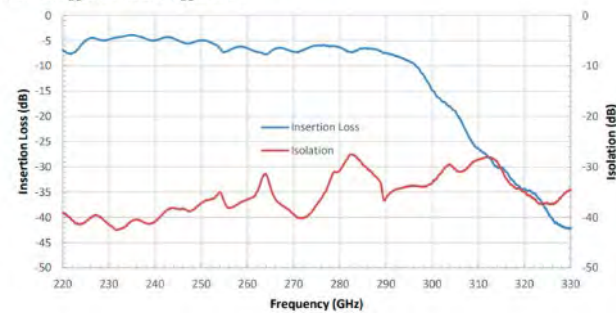
**SKS-0525035050-2F2F-A3**  
0.5 to 50 GHz



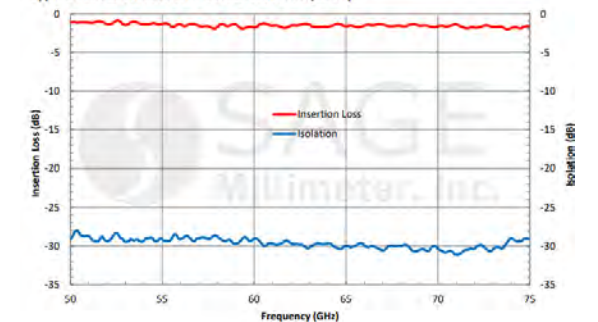
**SKS-5037533030-1515-R1**  
50 to 75 GHz

Insertion Loss and Isolation vs. Frequency

Bias: +1 V<sub>DC</sub>/3 mA and -2 V<sub>DC</sub>/ $<0$  mA



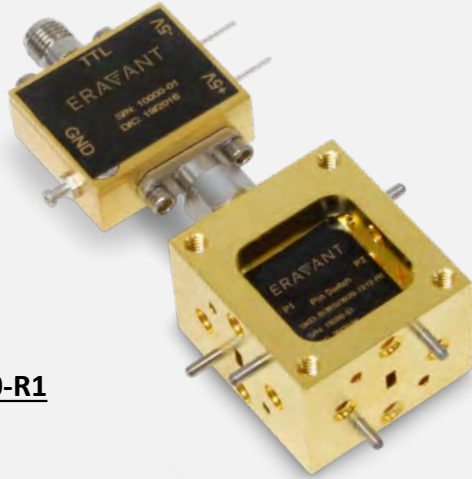
Typical Insertion Loss and Isolation vs. Frequency



# PIN DIODE SPDT SWITCH

**FAMILY: SKD**  
0.5 to 110 GHz

More Than 15 Models: Full Waveguide Bandwidth

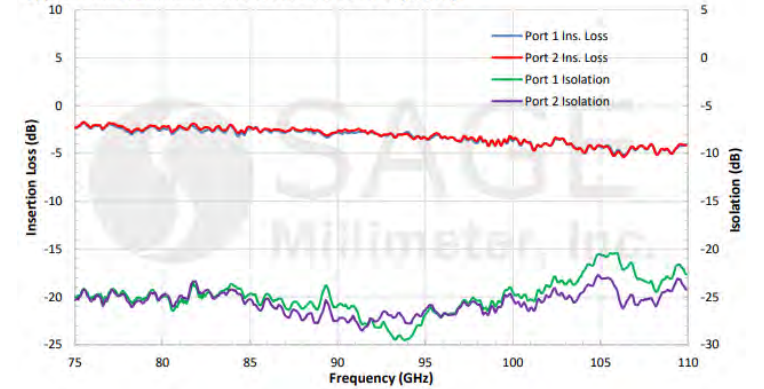


**SKD-7531144020-1010-R1**  
75 to 110 GHz

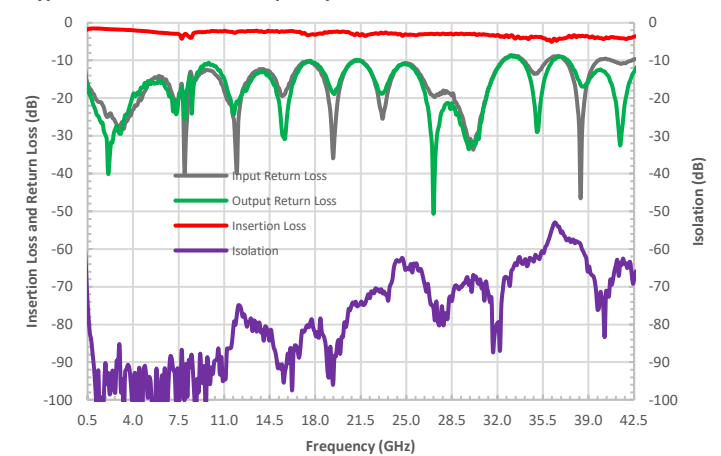


**SKD-0524334560-KFKF-A3**  
0.5 GHz to 43 GHz

Typical Insertion Loss and Isolation vs. Frequency



Typical Performance vs. Frequency



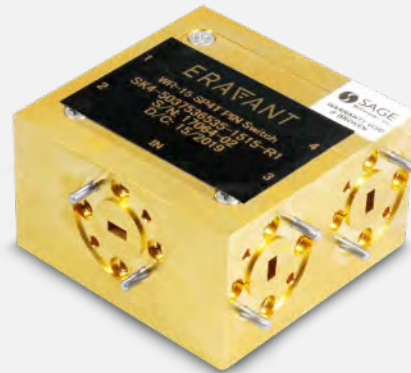
# PIN DIODE SP4T SWITCH

**FAMILY: SK4**  
0.5 to 90 GHz

More Than 10 Models: Full Waveguide Bandwidth



**SK4-6039038030-1212-R1-M**  
60 to 90 GHz

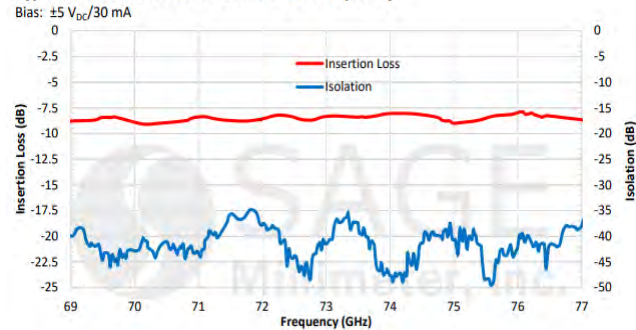


**SK4-5037536535-1515-R1-M**  
50 to 75 GHz

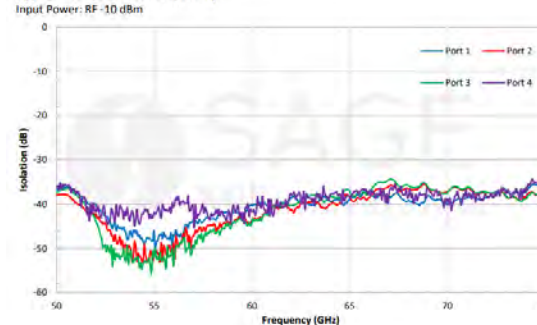


**SK4-0524335060-KFKF-A3**  
0.5 GHz to 43 GHz

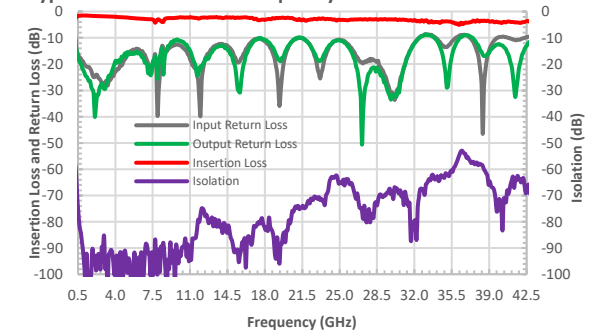
Typical Insertion Loss and Isolation vs. Frequency



Typical Isolation vs. Frequency



Typical Performance vs. Frequency



# PIN DIODE SP8T SWITCH

**FAMILY: SK8**  
0.5 to 40 GHz

2 Models: 0.5 to 40 GHz Bandwidth

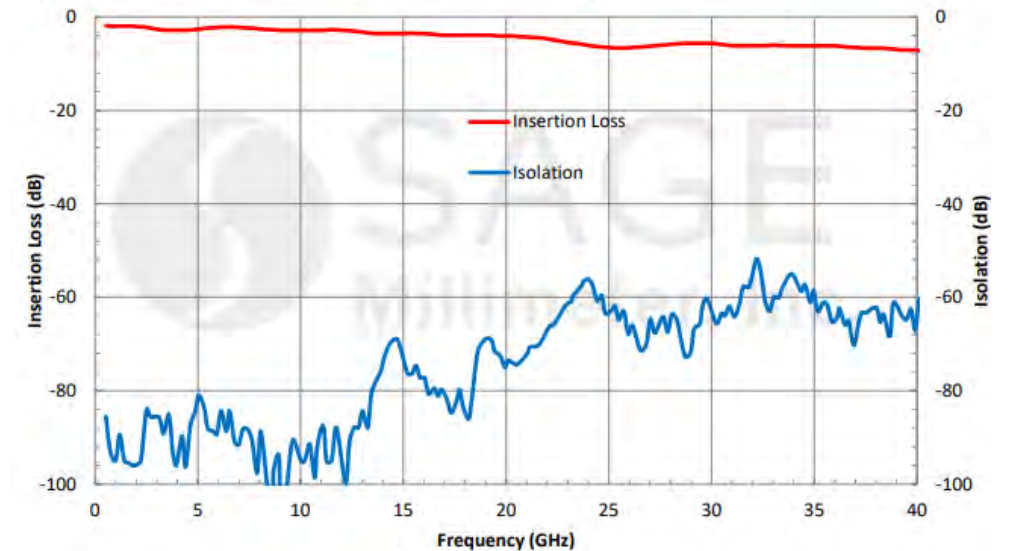
## Features:

- Low Insertion Loss
- High Isolation
- Absorptive
- TTL Controlled



**SK4-6039038030-1212-R1-M**  
0.5 to 40 GHz

Typical Insertion Loss and Isolation vs. Frequency



# WAVEGUIDE MOTORIZED SWITCH

**FAMILY: SWJ**  
18 to 220 GHz

## 11 Models: Full Waveguide Bandwidth



**SWJ-05-T1**  
140 to 220 GHz

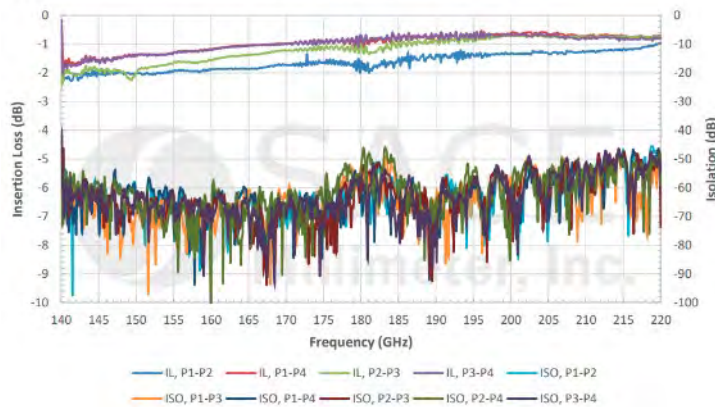


**SWJ-15-T1**  
50 to 75 GHz

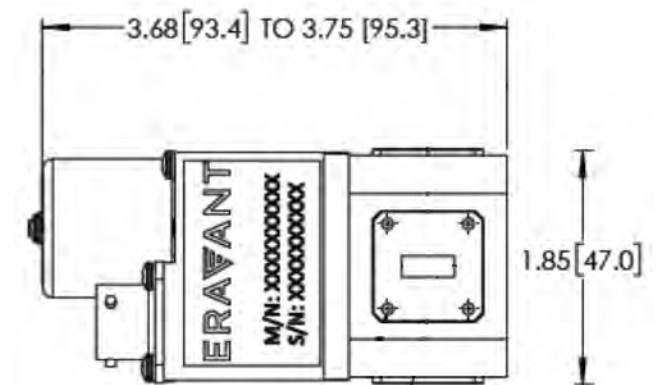
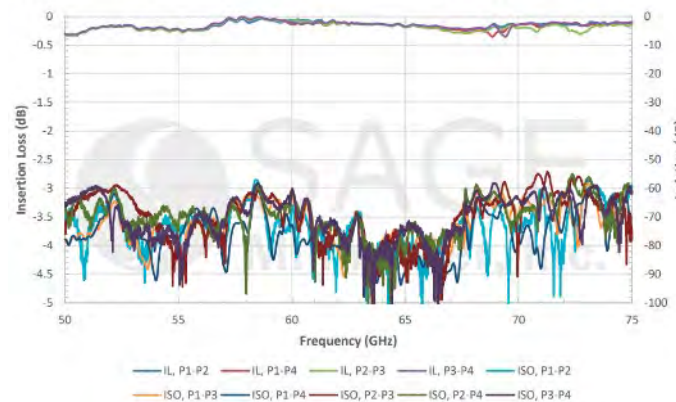


**SWJ-42-T1**  
18 to 26.5 GHz

Typical Measured Insertion Loss and Isolation vs Frequency



Typical Measured Insertion Loss and Isolation vs Frequency



# FERRITE DEVICES

# FARADAY ISOLATOR

**FAMILY: STF**  
18 to 260 GHz

More Than 20 Models: Full Waveguide Bandwidth



**STF-04-S1**  
170 to 260 GHz

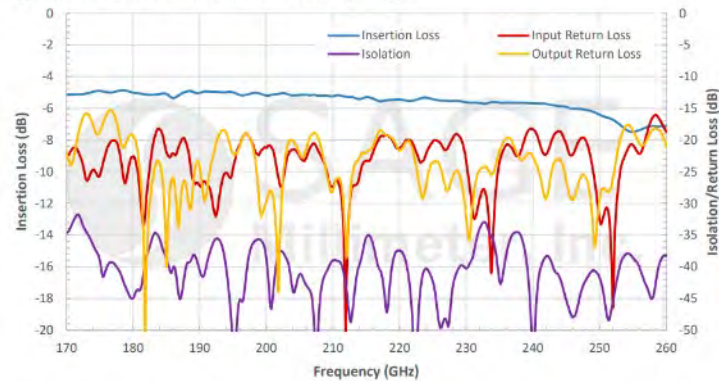


**STF-06-S1**  
110 to 170 GHz

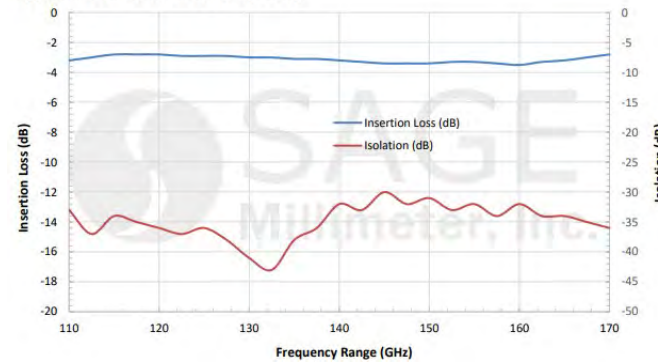


**STF-10-S1**  
75 to 110 GHz

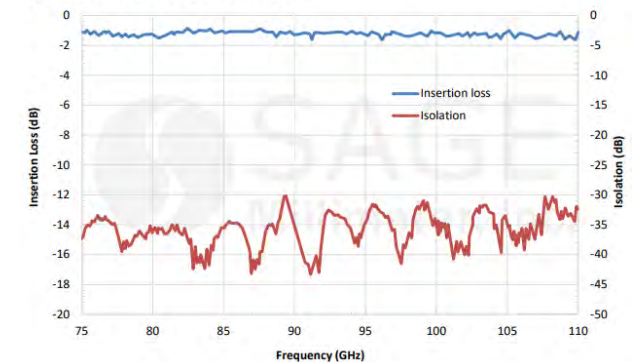
Typical Measured Performance vs Frequency



Typical Performance vs. Frequency



Typical Performance vs. Frequency



# COMPACT FARADAY ISOLATORS

**FAMILY: STF**  
18 to 265 GHz

More Than 10 Models: Full Waveguide Bandwidth



**STF-04-S1-M**  
170 to 260 GHz

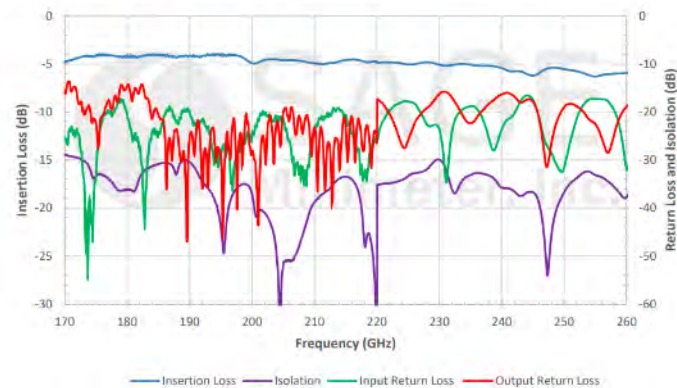


**STF-06-S1-C**  
110 to 170 GHz

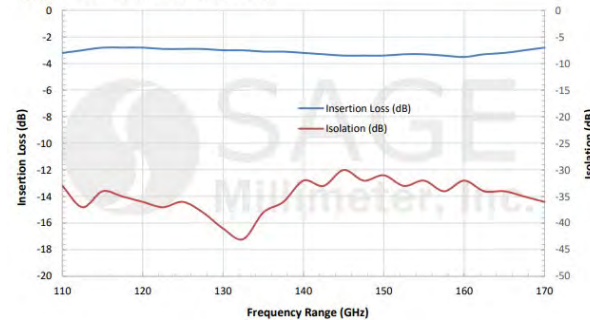


**STF-10-S1-C**  
75 to 110 GHz

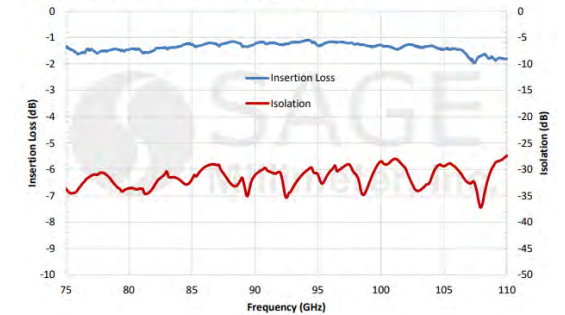
Typical Measured Performance vs Frequency



Typical Performance vs. Frequency



Typical Insertion Loss and Isolation vs. Frequency





# PASSIVE WAVEGUIDE COMPONENTS

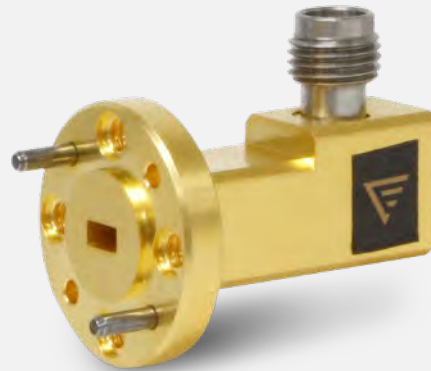
# WAVEGUIDE TO COAX ADAPTER (RIGHT ANGLE)

**FAMILY: SWC**  
8.2 to 110 GHz

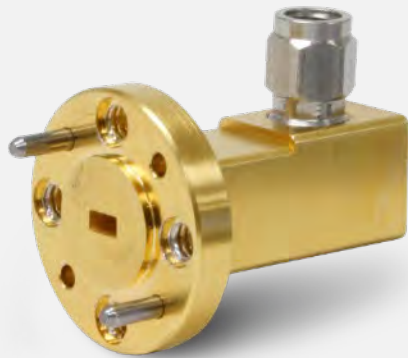
More Than 60 Models: Full Waveguide Bandwidth



**SWC-101F-R1**  
75 to 110 GHz

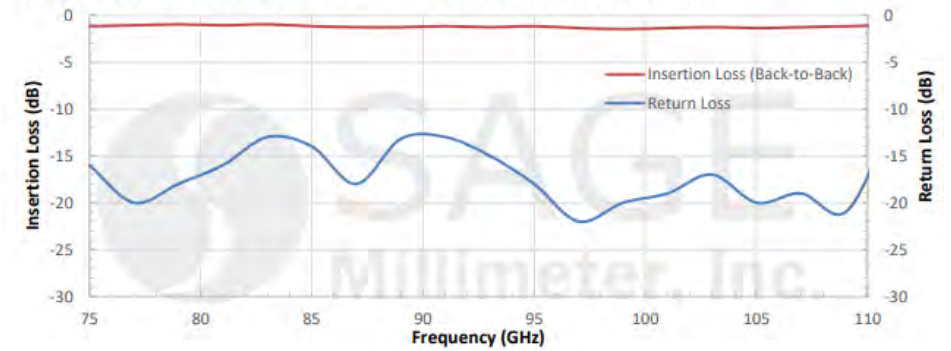


**SWC-15VF-R1**  
50 to 75 GHz

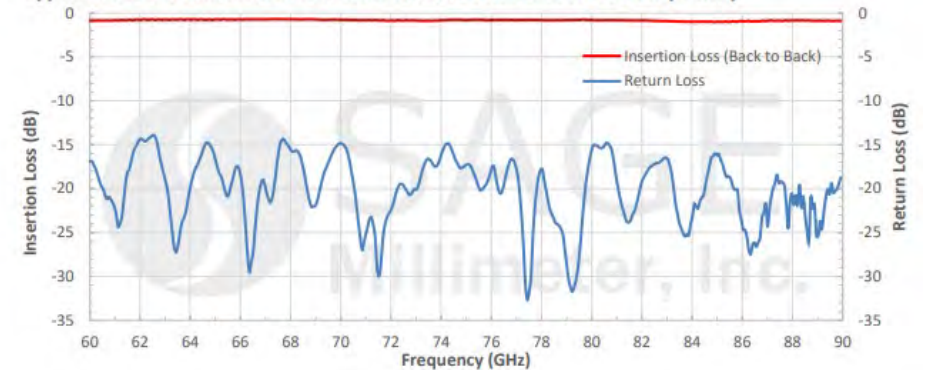


**SWC-121M-R1**  
60 to 90 GHz

Typical Return Loss and Back-to-Back Insertion Loss vs. Frequency



Typical Return Loss and Back to Back Insertion Loss vs. Frequency



# WAVEGUIDE TO COAX ADAPTER (END LAUNCH)

**FAMILY: SWC**  
8.2 to 110 GHz

More Than 60 Models: Full Waveguide Bandwidth

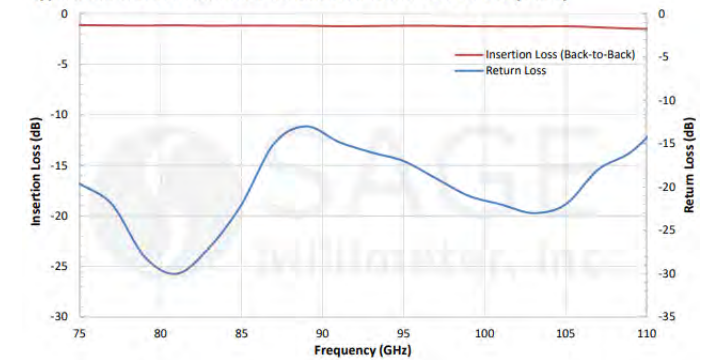


**SWC-15VM-E1**  
50 to 75 GHz

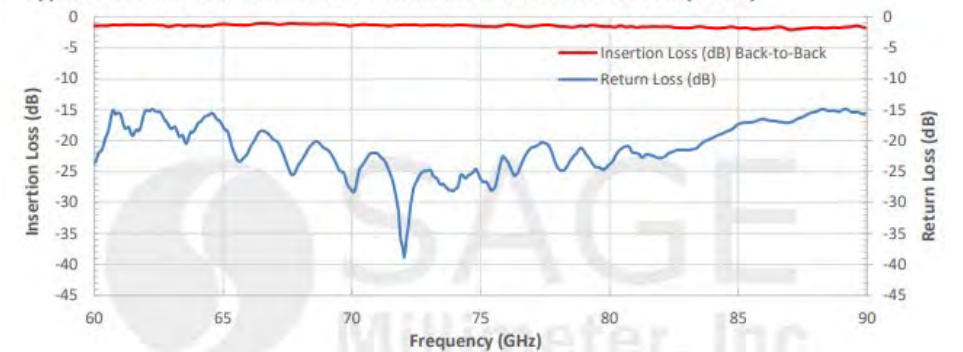


**SWC-121M-R1**  
60 to 90 GHz

Typical Return Loss and Back-to-Back Insertion Loss vs. Frequency



Typical Return Loss and Back-to-Back Insertion Loss vs. Frequency



# WAVEGUIDE DIRECTIONAL COUPLER

**FAMILY: SWD**  
18 to 330 GHz

More Than 180 Models: Full Waveguide Bandwidth

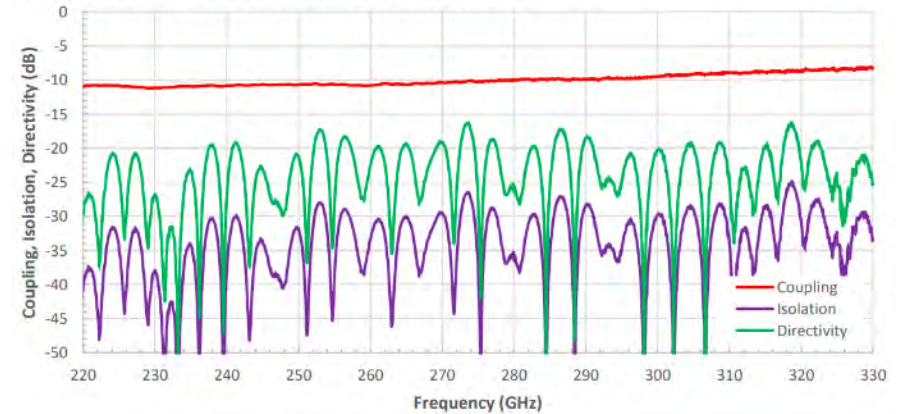


SWD-1020H-03-SB  
220 to 330 GHz, 10 dB

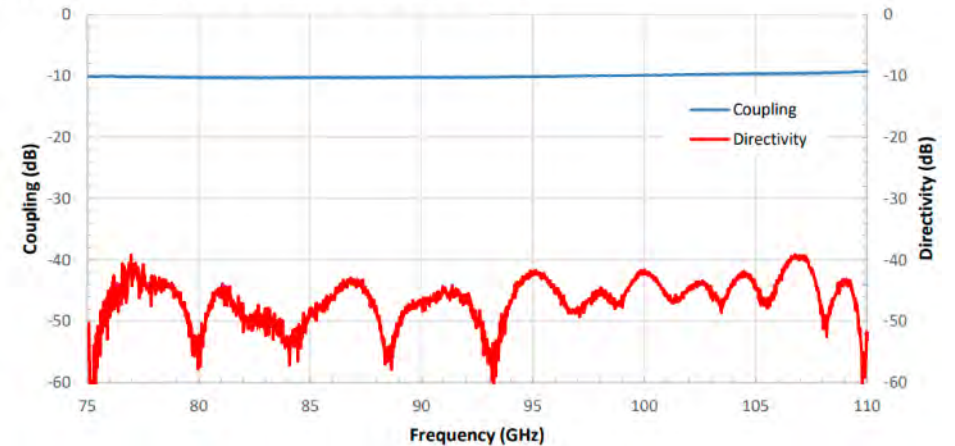


SWD-1040H-10-DB  
75 to 110 GHz, 10 dB

Typical Measured Performance vs Frequency



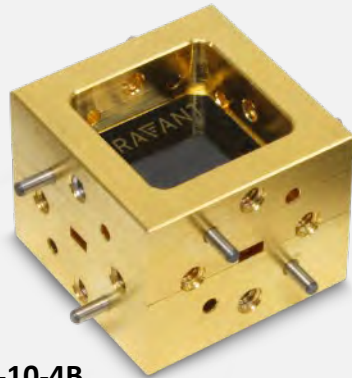
Typical Coupling and Directivity vs Frequency



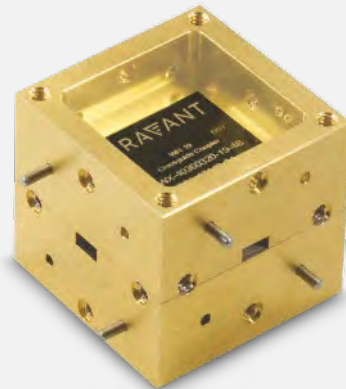
# WAVEGUIDE CROSSGUIDE COUPLER

**FAMILY: SWX**  
26.5 to 110 GHz

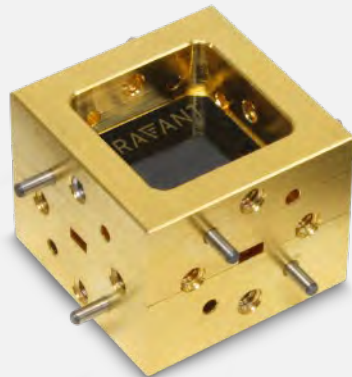
More Than 30 Models: Full Waveguide Bandwidth



**SWX-75311420-10-4B**  
75 to 110 GHz, 20 dB

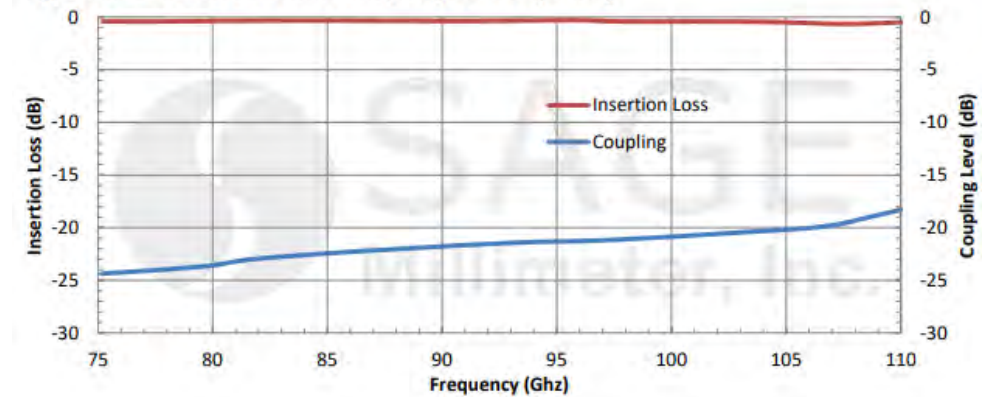


**SWX-40360320-19-4B**  
40 to 60 GHz, 20 dB

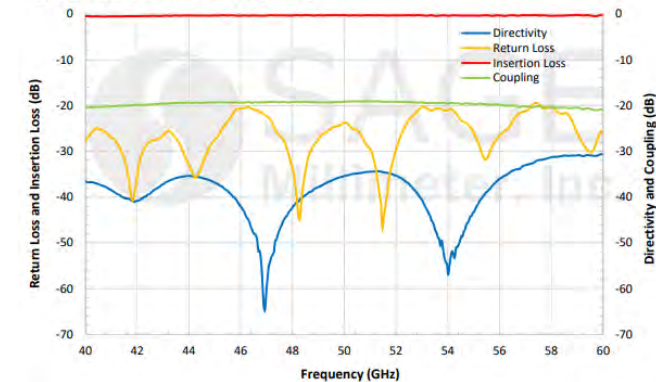


**SWX-50375330-15-4B**  
50 to 75 GHz, 30 dB

Typical Insertion Loss and Coupling vs. Frequency



Typical Performance vs. Frequency



# WAVEGUIDE POWER DIVIDERS

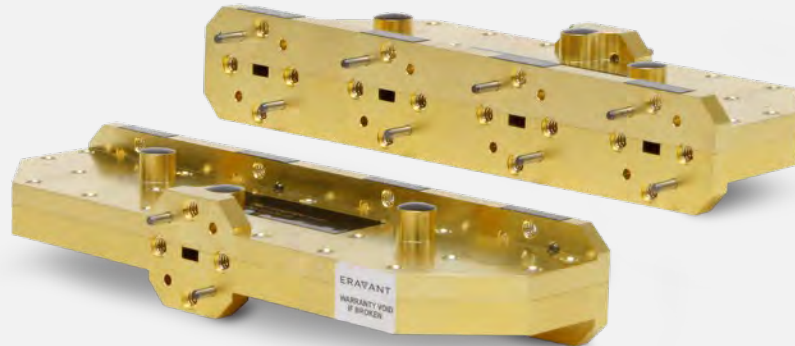
**FAMILY: SWP**

18 to 330 GHz

More Than 35 Models: Full Waveguide Bandwidth

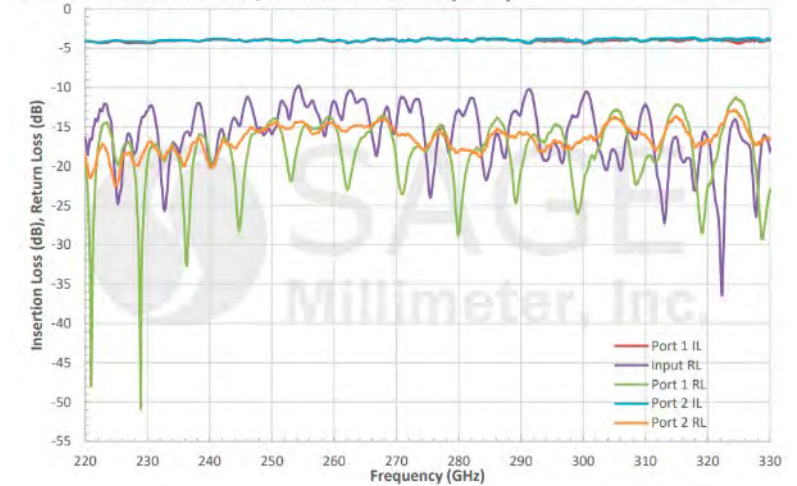


**SWP-22433402-03-S1**  
220 to 330 GHz, 2 Ways



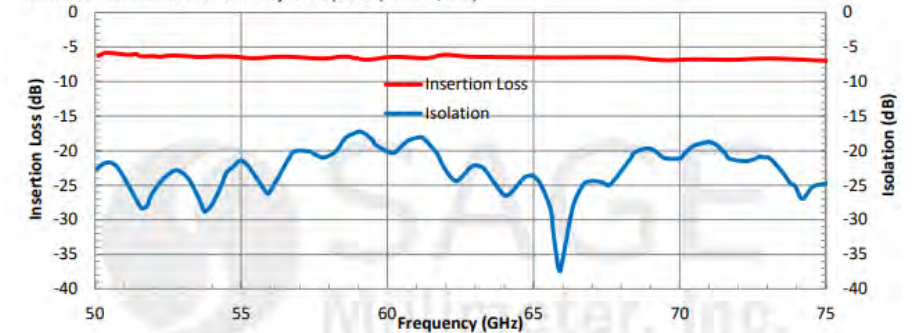
**SWP-50375304-15-E1**  
50 to 75 GHz, 4 Ways

Measured Insertion Loss, Return Loss Vs Frequency



Typical Insertion Loss and Isolation vs. Frequency

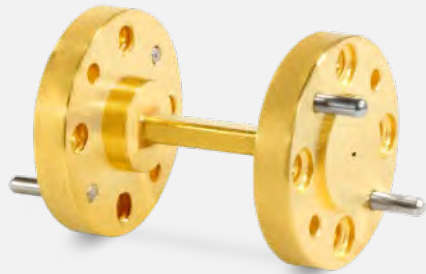
Isolation was tested between adjacent ports (i.e. 1-2, 3-4)



# RECTANGULAR WAVEGUIDE (RIGID)

**FAMILY: SWG**  
18 to 325 GHz

More Than 500 Models: WR-03 to WR-42



**SWG-03010-FB**  
WR-03 Straight Section, 1"



**SWB-06090-EB**  
WR-06 E-Plane Bend, 90°



**SWB-10090-TB**  
WR-10 Twist, 90°



**SWG-10020-FB**  
WR-10 Straight Section, 2"



**SWB-10090-HB**  
WR-10 H-Plane Bend, 90°



**SWB-12090-TB**  
WR-12 Twist, 90°

# RECTANGULAR WAVEGUIDES (FLEXIBLE)

**FAMILY: SWG**  
7.05 to 110 GHz

More Than 50 Models: WR-10 to WR-112



**SWG-10020-FB-F**  
WR-10 Length 2"

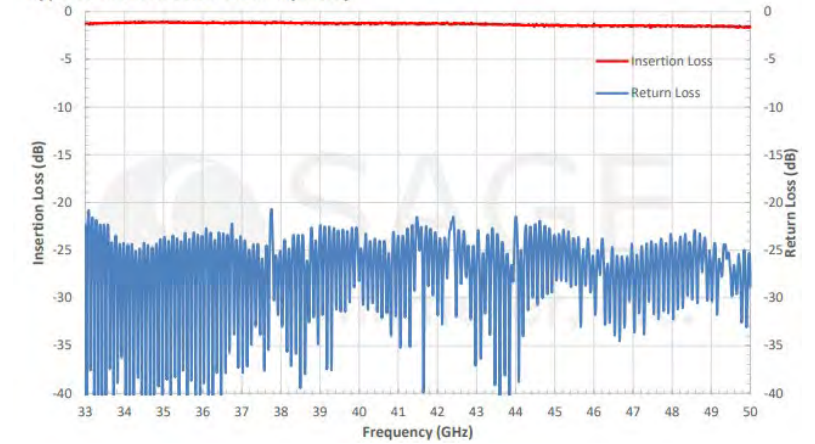


**SWG-28059-FB-FT-G**  
WR-28 Length 5.9"

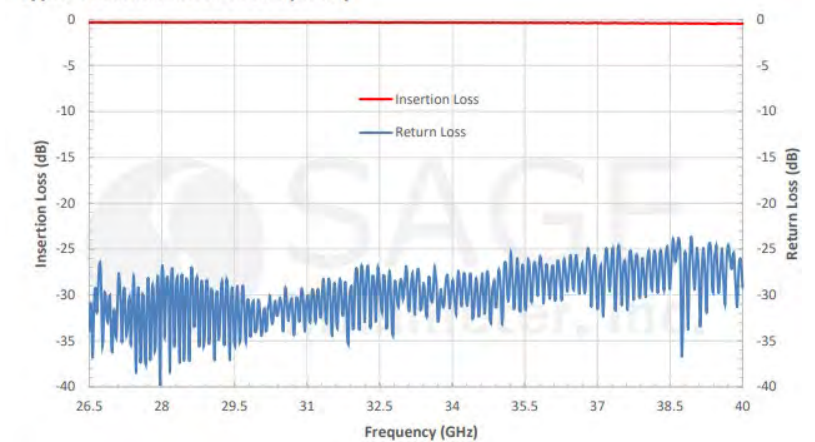


**SWG-22236-FB-FT-A-G**  
WR-22 Length 23.6"

Typical Performance vs. Frequency



Typical Performance vs. Frequency





# PASSIVE COAXIAL COMPONENTS

# COAXIAL DIRECTIONAL COUPLERS

**FAMILY: SCD**  
1 to 50 GHz, 10 to 67 GHz

More Than 25 Models: Broad Bandwidth

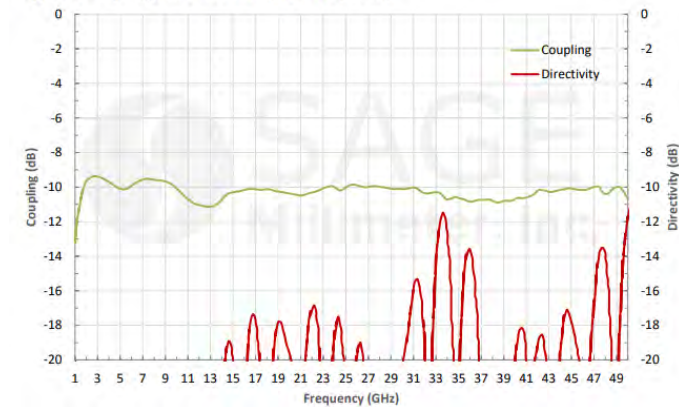


SCD-0136731008-VF-SA  
1 to 67 GHz, 10 dB

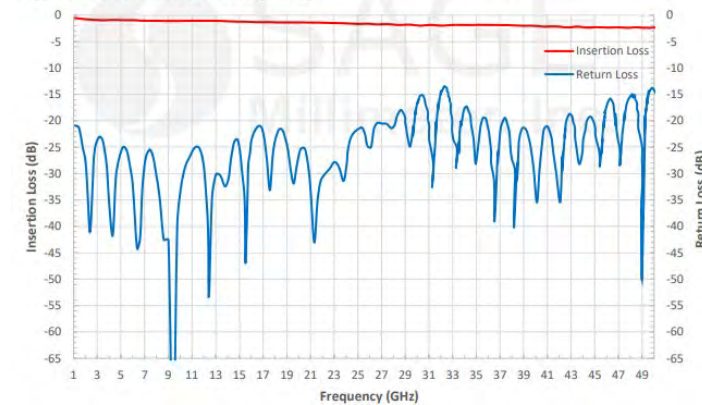


SCD-0135032008-2F-SA  
1 to 50 GHz, 20 dB

Typical Coupling and Directivity vs. Frequency



Typical Performance vs. Frequency



# COAX POWER DIVIDERS

**FAMILY: SCS**  
1 to 65 GHz

More Than 50 Models: 2 Way, 4 Way, 8 Way, 16 Way



**SCS-0134031215-KFKF-22**  
1 to 40 GHz, 2 Way

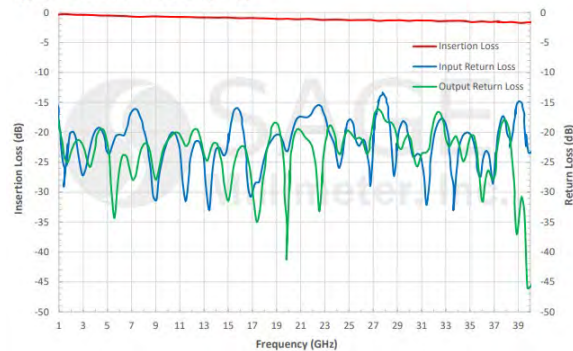


**SCS-0134035014-KFKF-42**  
1 to 40 GHz, 4 Way

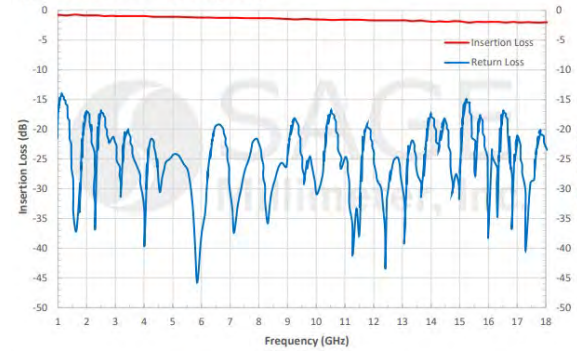


**SCS-1034032615-KFKF-82**  
10 to 40 GHz, 8 Way

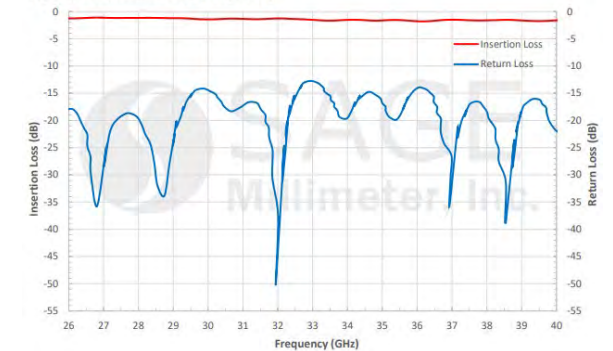
Typical Performance vs. Frequency



Typical Performance vs. Frequency



Typical Performance vs. Frequency



# COAXIAL ADAPTER (IN SERIES)

**FAMILY: SCT**  
DC to 110 GHz

More Than 60 Models: 1 mm, 1.85 mm, 2.4 mm, 2.92 mm

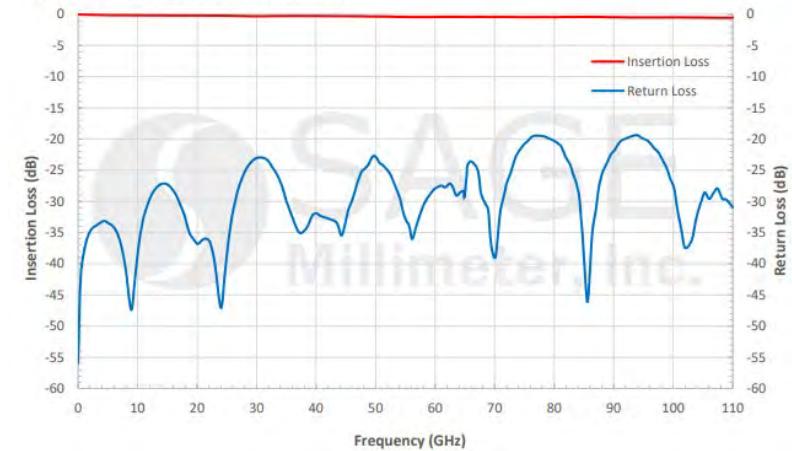


**SCT-1F1F-UB**  
DC to 110 GHz

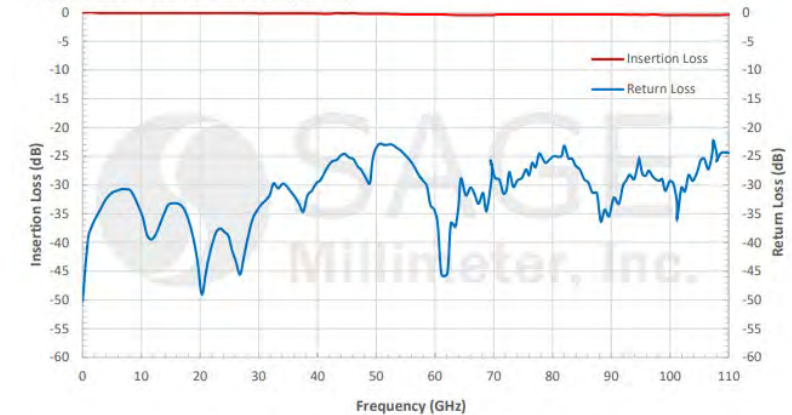


**SCT-1M1M-UB**  
DC to 110 GHz

Typical Performance vs. Frequency



Typical Performance vs. Frequency



# COAXIAL ADAPTER (BETWEEN SERIES)

**FAMILY: SCT**  
DC to 90 GHz

More Than 90 Models: 1 mm, 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm

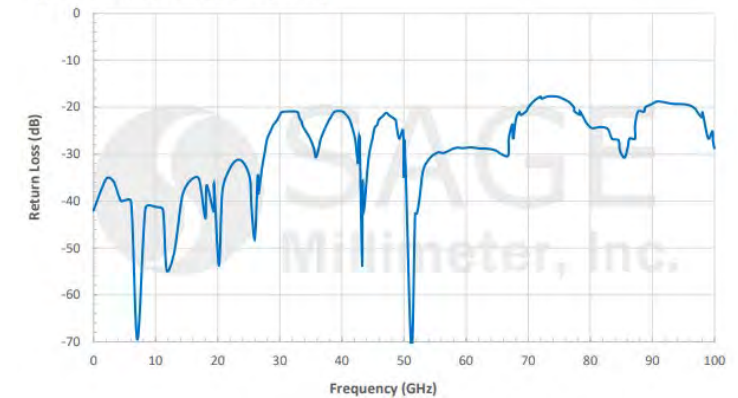


**SCT-AF1M-UB**  
DC to 100 GHz

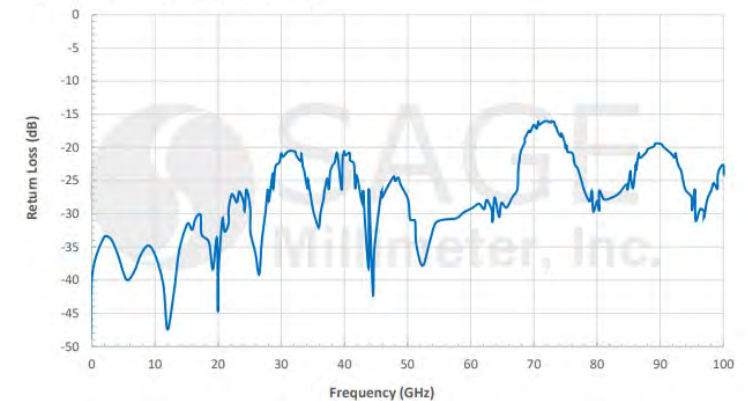


**SCT-AF1F-UB**  
DC to 100 GHz

Typical Return Loss vs. Frequency



Typical Return Loss vs. Frequency



# COAXIAL CABLE (FLEXIBLE)

**FAMILY: SCW**  
DC to 110 GHz

More Than 100 Models: 1 mm, 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm

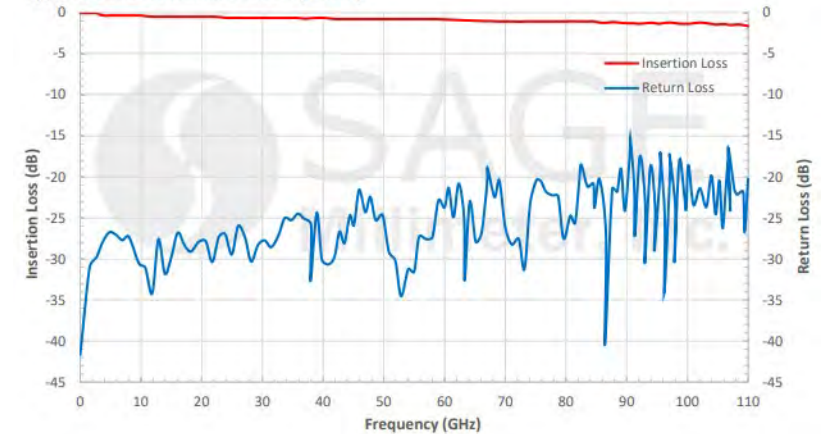


**SCW-1M1M003-F1**  
DC to 110 GHz, 3"

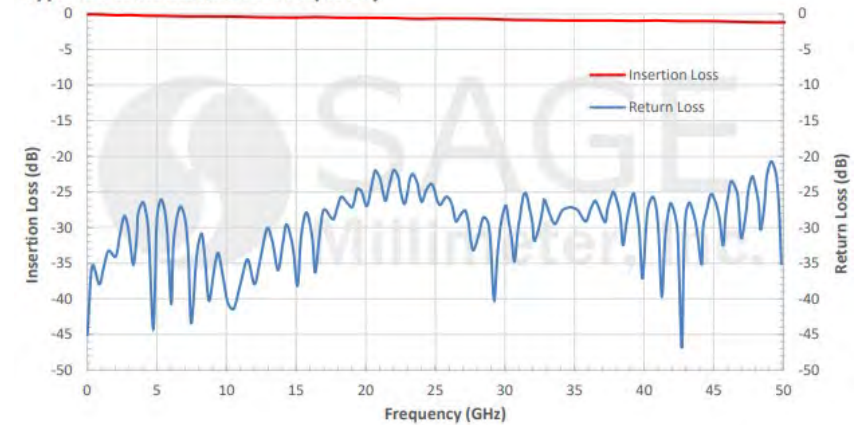


**SCW-2M2M006-F1**  
DC to 50 GHz, 6"

Typical Performance vs. Frequency



Typical Performance vs. Frequency



# COAXIAL CABLE (SEMI-RIGID)

**FAMILY: SCW**  
DC to 110 GHz

More Than 50 Models: 1 mm, 1.85 mm, 2.4 mm, 2.92 mm

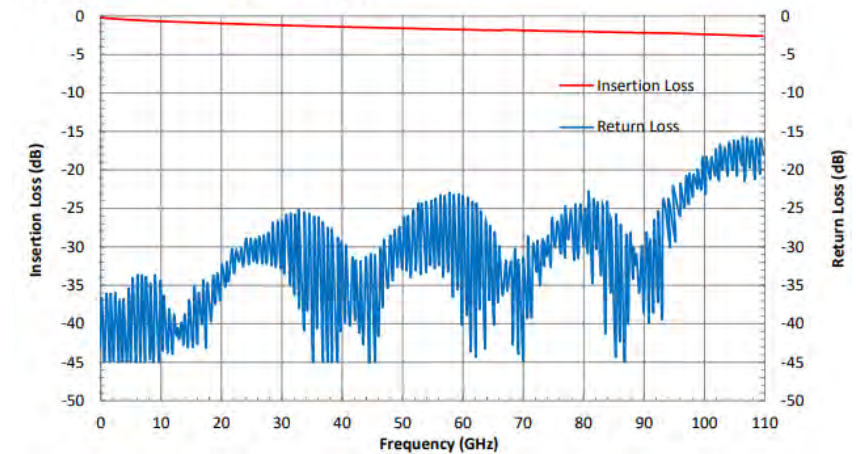


**SCW-1M1M006-S1**  
DC to 110 GHz, 6"

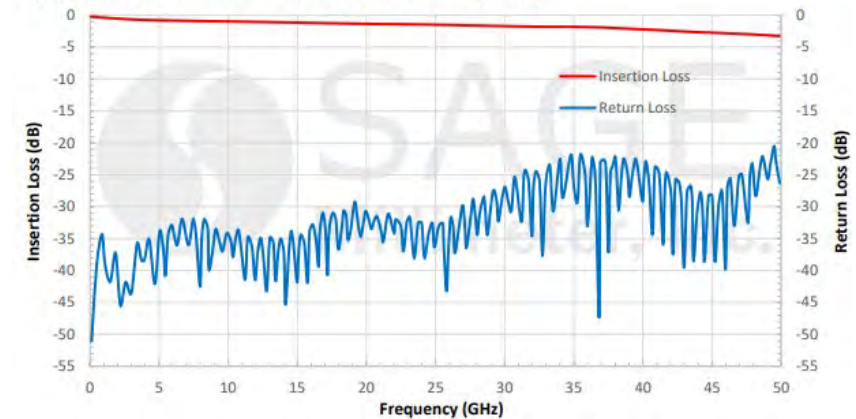


**SCW-2M2M012-S1**  
DC to 50 GHz, 12"

Typical Performance vs. Frequency



Typical Insertion Loss & Return Loss vs. Frequency



# TEST EQUIPMENT



# WAVEGUIDE NOISE SOURCES

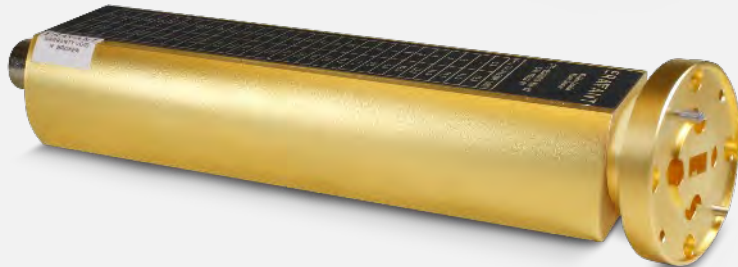
**FAMILY: STZ**  
26.5 to 170 GHz

More Than 20 Models: Full Waveguide Bandwidth

**STZ-06-I1**  
110 to 170 GHz

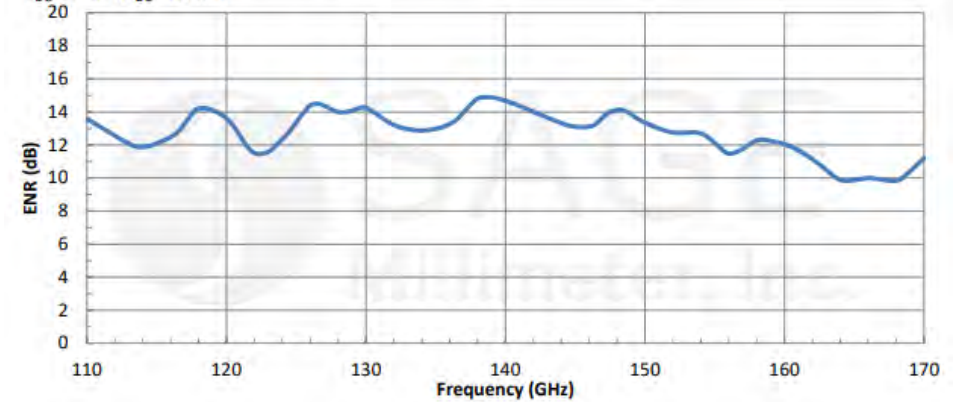


**STZ-19-02**  
40 to 60 GHz



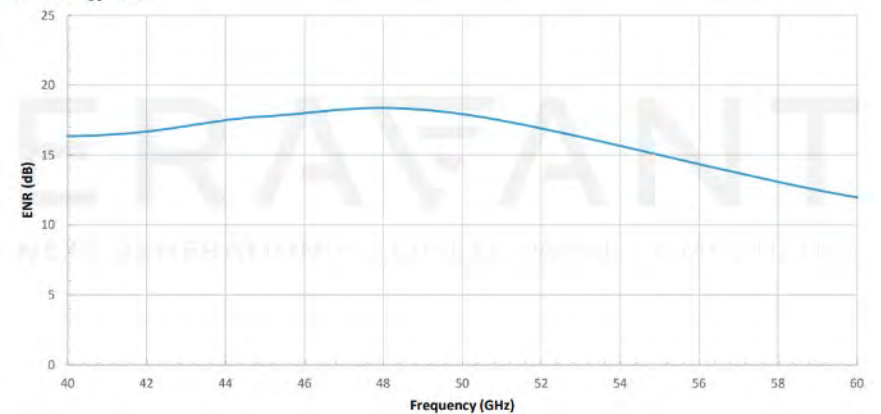
**Typical ENR vs. Frequency**

$V_{DC} = +28\text{ V}$ ,  $I_{DC} = 60\text{ mA}$



**ENR vs. Frequency**

Bias:  $+28\text{ V}_{DC}/18\text{ mA}$



# COAXIAL NOISE SOURCES

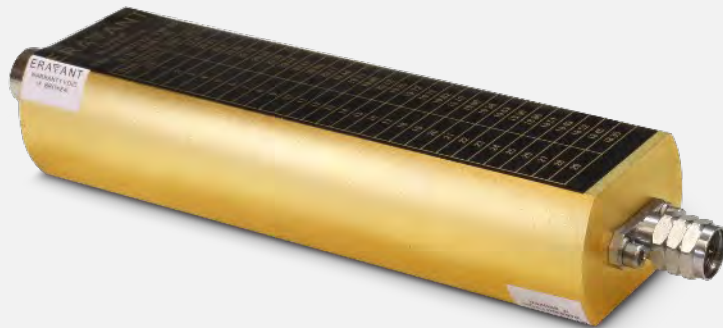
**FAMILY: STZ**  
0.5 to 67 GHz

Wide Bandwidth: 1.85 mm, 2.4 mm, 2.92 mm

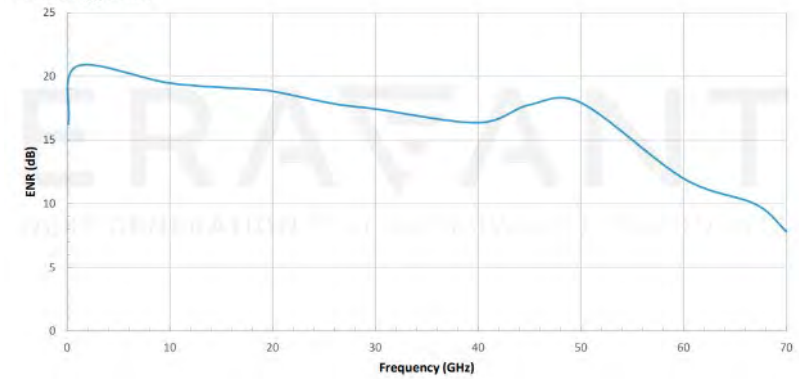
**STZ-05267313-VM-0T2**  
0.5 to 67 GHz



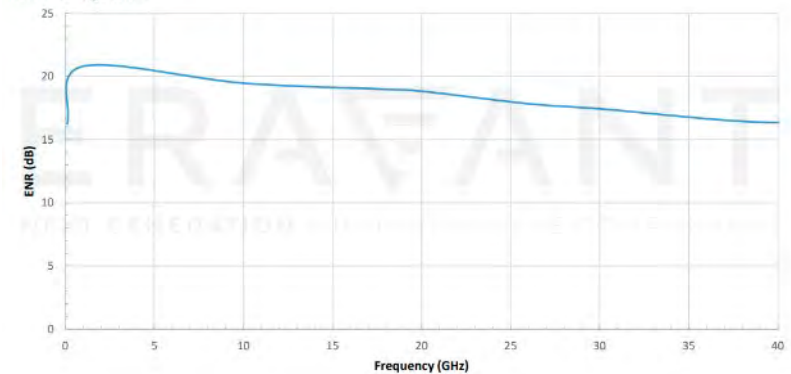
**STZ-05240318-KM-02**  
0.5 to 40 GHz



**ENR vs. Frequency**  
Bias: +28 V<sub>DC</sub>/18 mA



**ENR vs. Frequency**  
Bias: +28 V<sub>DC</sub>/18 mA



# SPECTRUM ANALYZER HARMONIC MIXER

**FAMILY: STH**  
18 to 170 GHz

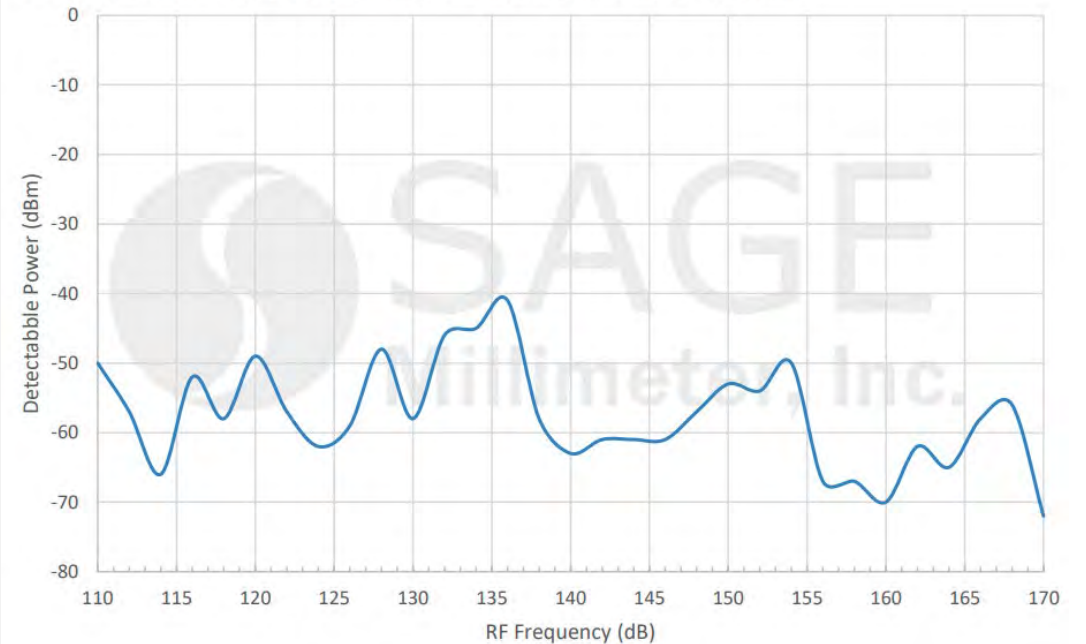
More Than 8 Models: Full Waveguide Bandwidth

**STH-06SF-S1**  
110 to 170 GHz



## Detectable Power versus RF Frequency

Test Condition: LO Frequency: RF/30; LO Power: +16 dBm; IF: 300 MHz



# COAXIAL VNA CALIBRATION KIT

**FAMILY: STQ-TO**  
DC to 67 GHz

4 Models: Each Kit Includes Male & Female Shorts, Opens and Loads, Adapters, Torque Wrench and Calibration Data



**STQ-TO-VFVM-U3-CKIT1**  
1.85 mm, DC to 67 GHz



**STQ-TO-KFKM-U3-CKIT1**  
2.92 mm, DC to 40 GHz



**STQ-TO-2F2M-U3-CKIT1**  
2.4 mm, DC to 50 GHz



**STQ-TO-3F3M-U3-CKIT1**  
DC to 26.5 GHz

# WAVEGUIDE VNA CALIBRATION KIT

**FAMILY: STQ-TO**  
18 to 220 GHz

More Than 20 Models: Optional Equipment Includes Proxi-Flange™ Contactless Waveguide Adapters



Contactless Flanges Speed Up VNA Calibration and Measurements

**STQ-TO-05-S1-CKIT1-CF**  
140 to 220 GHz with Proxi-Flange™

# SYNTHESIZER/SWEEPER FREQUENCY EXTENDER

**FAMILY: STE**  
40 to 220 GHz

9 Models: WR-05 to WR-19 Bands



**STE-154224KF1205-N03-S1**  
140 to 220 GHz, 0 dBm

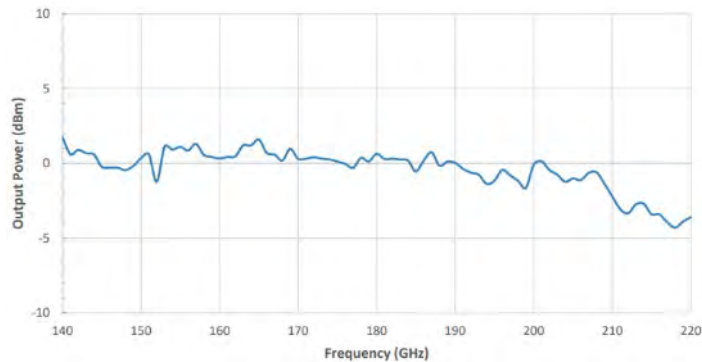


**STE-SF610-S1**  
75 to 110 GHz, +16 dBm

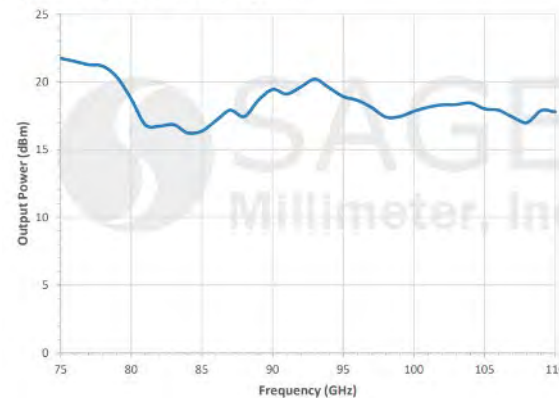


**STE-SF419-S1**  
40 to 60 GHz, +20 dBm

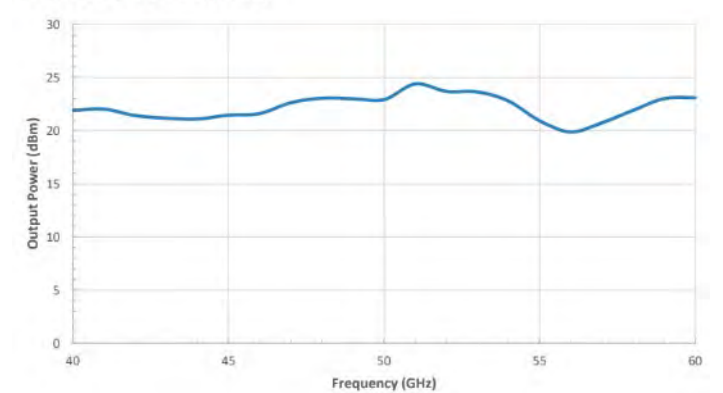
Output Power vs. Frequency



Typical Output Power vs. Frequency



Output Power vs. Frequency



# FREQUENCY DOWN-CONVERTERS

**FAMILY: STC**  
26.5 to 220 GHz

More Than 20 Models: WR-05 to WR-28 Bands



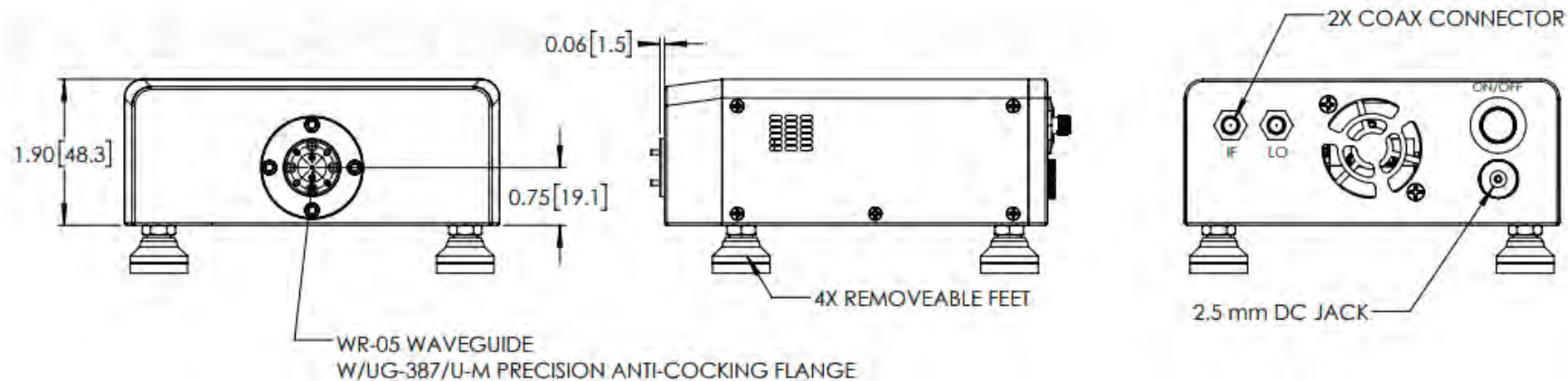
**STC-N15-05-S1**  
140 to 220 GHz



**STC-N15-06-S1**  
110 to 170 GHz



**STC-N12-15-S1**  
50 to 75 GHz



# NOISE FIGURE & GAIN TEST EXTENDER

**FAMILY: STG**  
26.5 to 170 GHz

More Than 8 Models: WR-06 to WR-28 Bands



**STG-06-S1**  
110 to 170 GHz



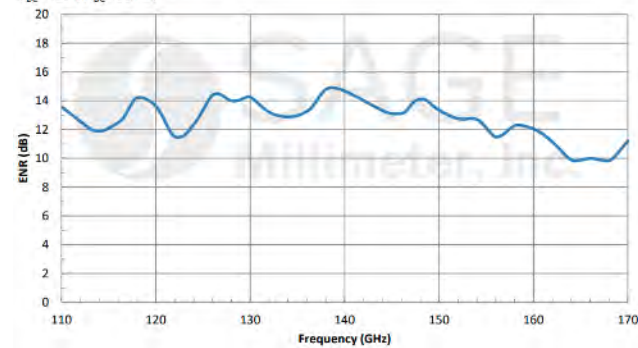
**STG-10-S1**  
75 to 110 GHz



**STG-15-S1**  
50 to 75 GHz

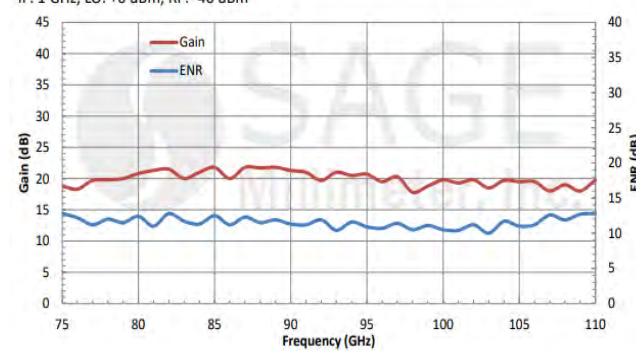
Typical ENR vs. Frequency

$V_{DC} = +28\text{ V}$ ,  $I_{DC} = 60\text{ mA}$



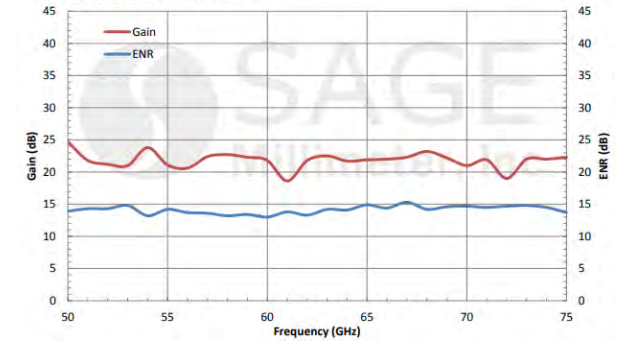
Typical Performance vs. Frequency

IF: 1 GHz, LO: +0 dBm, RF: -40 dBm



Typical Performance vs. Frequency

IF: 1 GHz, LO: +0 dBm, RF: -50 dBm





# COAX CABLE (VECTOR NETWORK ANALYZER)

**FAMILY: STQ-CW**  
DC to 67 GHz

More Than 10 Models: 1.85 mm, 2.4 mm, 2.92 mm, 3.5 mm

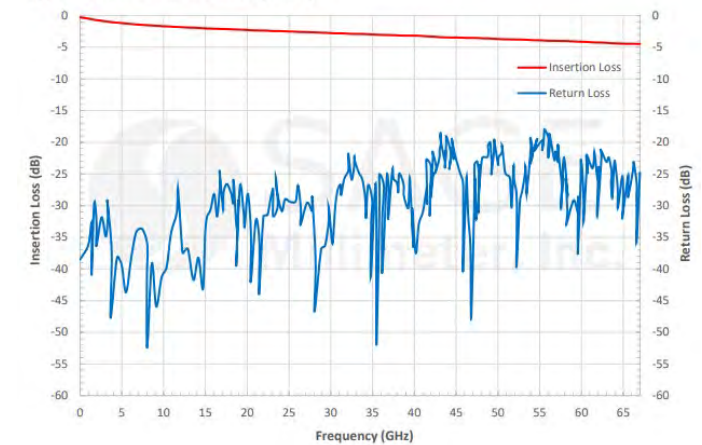


**STQ-CW-VFVF025-F1**  
DC to 67 GHz, 25"

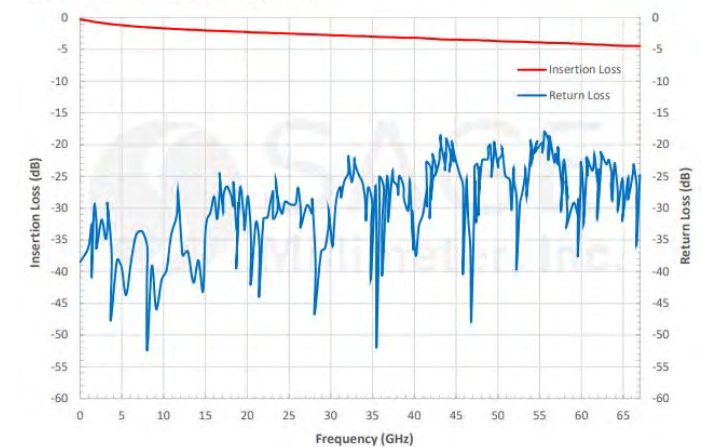


**STQ-CW-VFVM025-F1**  
DC to 67 GHz, 25"

Typical Performance vs. Frequency



Typical Performance vs. Frequency



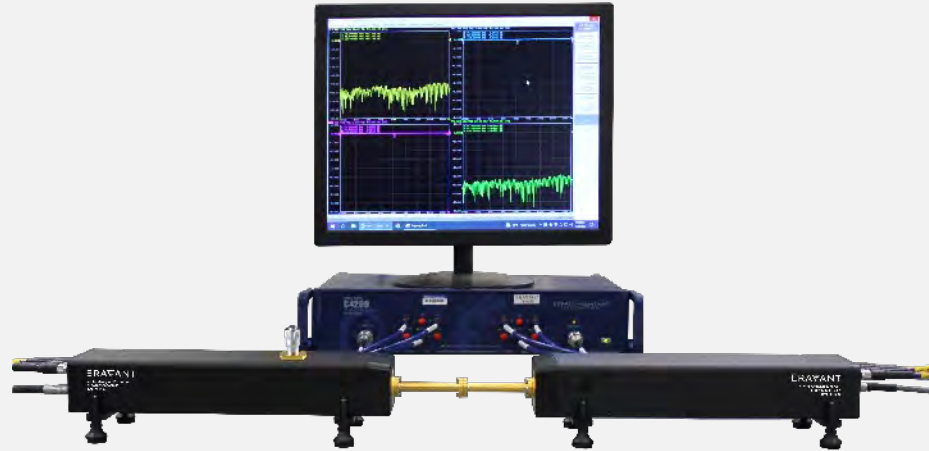
# VECTOR NETWORK ANALYZER FREQUENCY EXTENDER

**FAMILY: STO**  
50 to 330 GHz

Waveguide Bands: WR-03 to WR-15



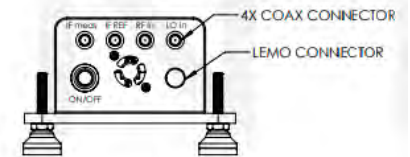
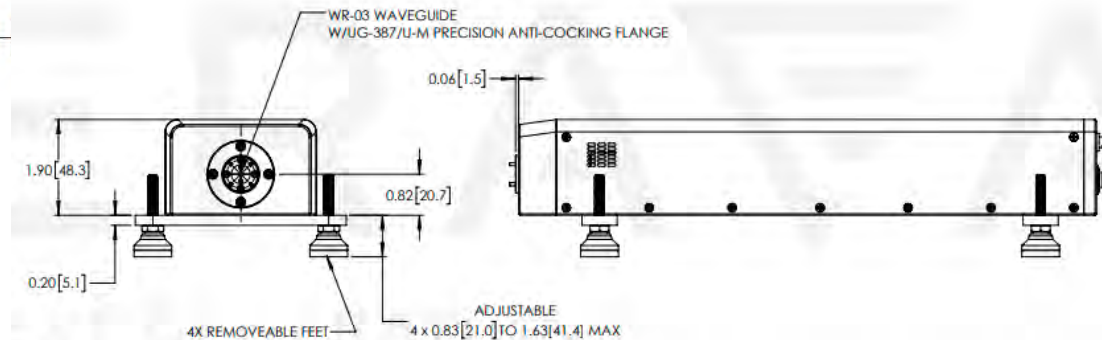
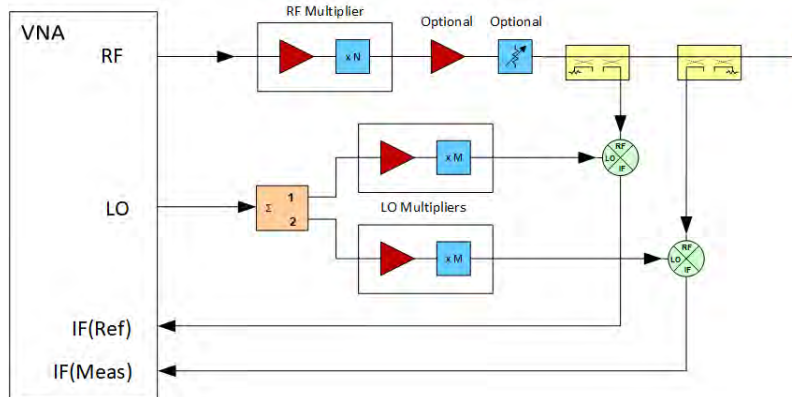
**STO-1020313-CMC-S1**  
75 to 110 GHz



**STO-03203N05-CMC-S1**  
220 to 330 GHz



**STO-1520315-CMC-S1**  
50 to 75 GHz



# PROXI-FLANGE™ CONTACTLESS WAVEGUIDE FLANGE

**FAMILY: STQ-WG**  
18 to 330 GHz

Waveguide Bands: WR-03 to WR-42

STQ-WG-03025-FB-CF  
220 TO 330 GHz

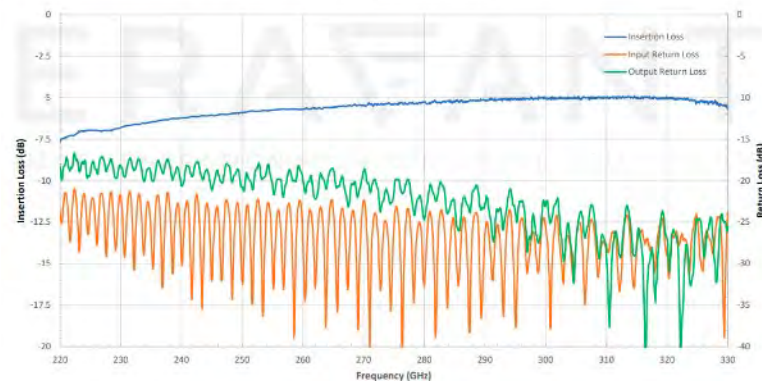


STQ-WG-34025-FB-CF  
22 to 33 GHz



Typical Measured Performance vs Frequency

(Note: Data presented was taken with a shim inserted between connecting flanges to create a 0.0015" air gap)



**No Waveguide Screws Required During  
Calibration and Testing**

**No Damage To Waveguide Interfaces  
On Test System or Components**

# WAVE-GLIDE™ RAIL SYSTEM FOR VNA FREQUENCY EXTENDERS

FAMILY: STQ-TL

Compatible With All Industry Standard VNA Frequency Extenders



STQ-TL-RW-S10-M1

**Maintains Alignment Between  
VNA Frequency Extender Test Ports**

**Streamlines and Simplifies Calibration  
and Testing Procedures**

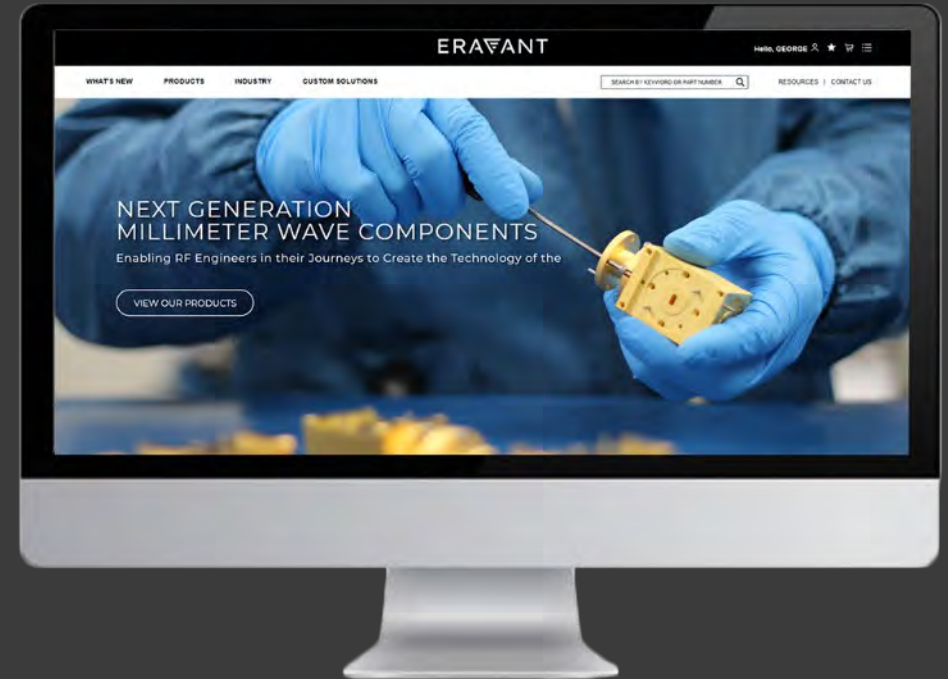
# ERA VANT

NEXT GENERATION MILLIMETERWAVE COMPONENTS

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### PASSIVE FREQUENCY MULTIPLIERS

28 RESULTS

MODEL	MINIMUM OUTPUT FREQUENCY	MAXIMUM OUTPUT FREQUENCY	OUTPUT POWER	MINIMUM INPUT FREQUENCY	MAXIMUM INPUT FREQUENCY	INPUT POWER	OUTPUT PORT	INPUT PORT	DOWNLOADS	VIEW
SFP-06212-S2	110 GHz	170 GHz	0 dBm	55 GHz	50 GHz	+10 dBm	WR-05 Waveguide	WR-12 Waveguide	Datasheet	View
SFP-06310-U8	110 GHz	170 GHz	-3 dBm	38.67 GHz	56.67 GHz	+20 dBm	WR-06 Waveguide	WR-10 Waveguide	Datasheet	View
SFP-06210-S2	140 GHz	220 GHz	-3 dBm	70 GHz	110 GHz	+17 dBm	WR-05 Waveguide	WR-10 Waveguide	Datasheet	View
SFP-223403205-28SF-S1	22 GHz	40 GHz	+5 dBm	11 GHz	20 GHz	+18 dBm	WR-28 Waveguide	SMA (F)	Datasheet STEP File	View
SFP-242423303-28SF-S1	24 GHz	42 GHz	+3 dBm	8 GHz	14 GHz	+20 dBm	WR-28 Waveguide	SMA (F)	Datasheet STEP File	View
SFP-2635F-U9	26.5 GHz	40.0 GHz	+5 dBm	8.37 GHz	13.33 GHz	+20 dBm	WR-28 Waveguide	SMA (F)	Datasheet	View
SFP-273403205-28SF-S1	26.5 GHz	40 GHz	-5 dBm	8.37 GHz	13.33 GHz	+10 dBm	WR-28 Waveguide	SMA (F)	Datasheet STEP File	View
SFP-2235F-S1	33 GHz	50 GHz	+3 dBm	11 GHz	16.67 GHz	+20 dBm	WR-22 Waveguide	SMA (F)	Datasheet STEP File	View
SFP-222VF-S1	33 GHz	50 GHz	+7 dBm	16.5 GHz	25 GHz	+20 dBm	WR-22 Waveguide	2.92 mm (F)	Datasheet STEP File	View
SFP-363873305-19SF-V1	37 GHz	38 GHz	+3 dBm	12 GHz	19 GHz	+20 dBm	WR-19 Waveguide	SMA (F)	Datasheet STEP File	View
SFP-192VF-S1	40 GHz	60 GHz	+5 dBm	20 GHz	30 GHz	+20 dBm	WR-19 Waveguide	2.92 mm (F)	Datasheet STEP File	View

# ERAVANT

NEXT GENERATION MILLIMETERWAVE COMPONENTS

ERAVANT is supported by  
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