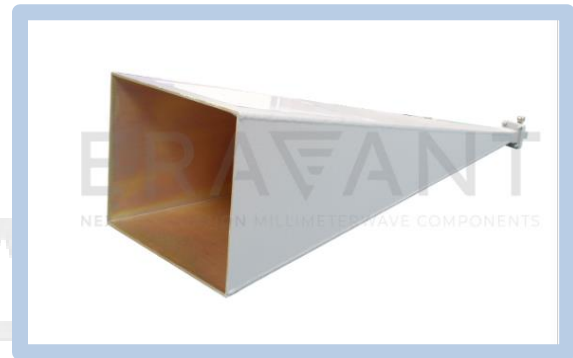




WR-51 Pyramidal Horn Antenna, 25 dBi Gain with SMA Type Coax Input

Description:

Model SAR-2510-51SF-R3 & SAR-2510-51SM-R3 are K-band pyramidal horn antenna with a right angle (90°) SMA type coax connector to cover the frequency range of 14.5 GHz to 22.0 GHz. The antenna offers 25 dBi nominal gain and a typical half power beamwidth of 9 degrees on the E-plane and 11 degrees on the H-plane. The antenna supports linear polarized waveforms.



Features:

- Inline Configuration
- Linear Polarization
- DC Short Circuit at Input

Applications:

- Antenna Ranges
- Antenna Gain Measurements
- System Setups

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	14.5 GHz		22 GHz
Gain		25 dBi	
Polarization		Linear	
3 dB Beamwidth, E-Plane		9°	
3 dB Beamwidth, H-Plane		11°	
Side Lobes, E-Plane		-13 dB	
Side Lobes, H-Plane		-36 dB	
Return Loss		18 dB	
Power Handling			50 W (CW)
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

Mechanical Specifications:

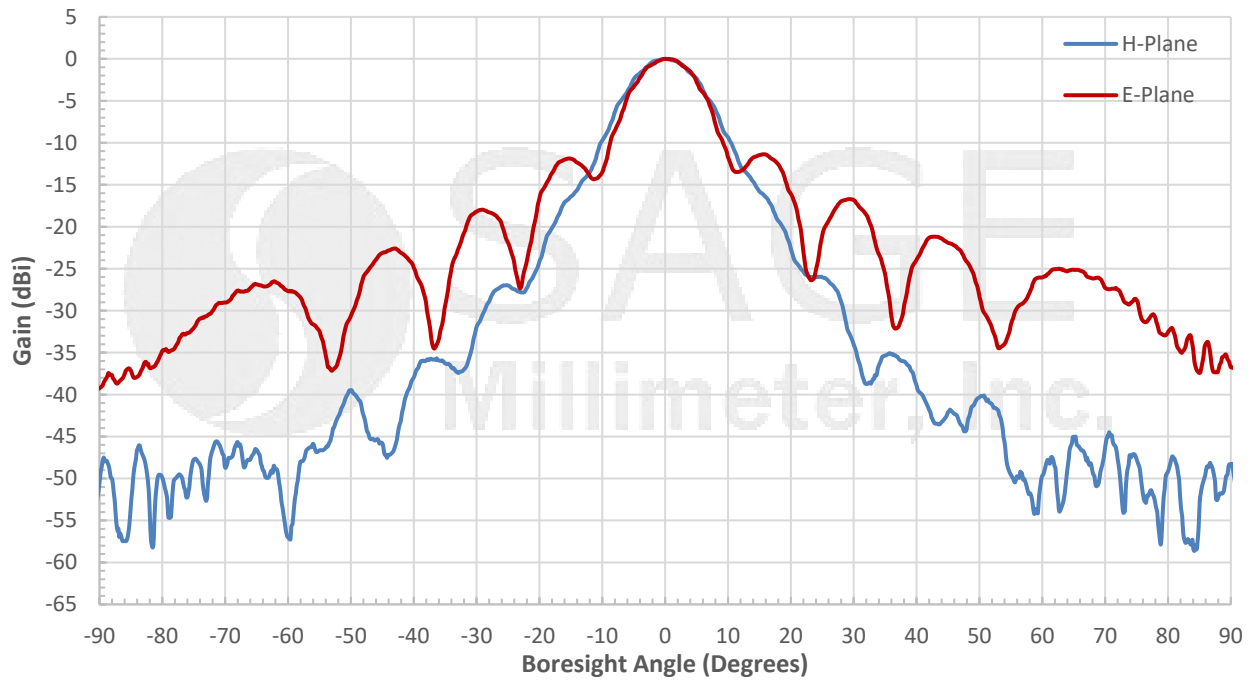
Item	Specification
Antenna Port (F)	SMA Type Female for Model Number: SAR-2510-51SF-R3
Antenna Port (M)	SMA Type Male for Model Number: SAR-2510-51SM-R3
Material	Copper
Connector Material	Stainless Steel
Finish	Anti-Corrosion Paint
Weight	2.94 lbs
Size	16.81" (L) X 5.28" (W) X 4.09" (H)
Outline	AR-5C3-R-H1



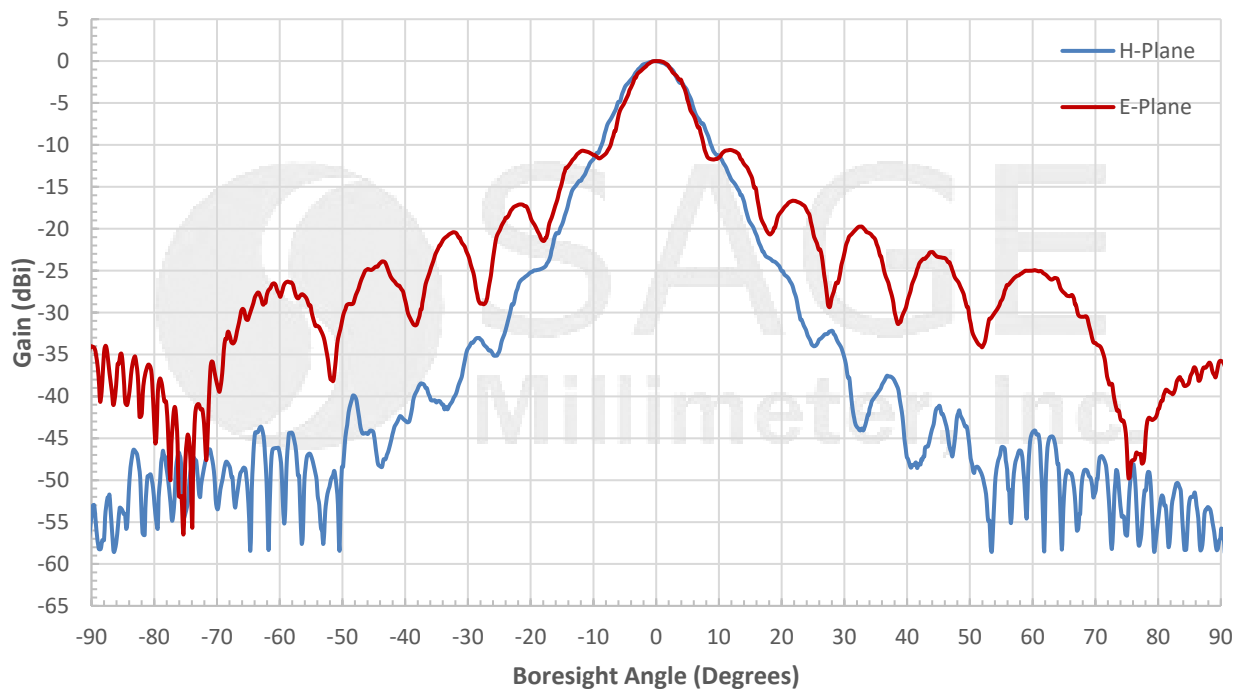


WR-51 Pyramidal Horn Antenna, 25 dBi Gain with SMA Type Coax Input

Simulated Antenna Patterns @ 14.5 GHz



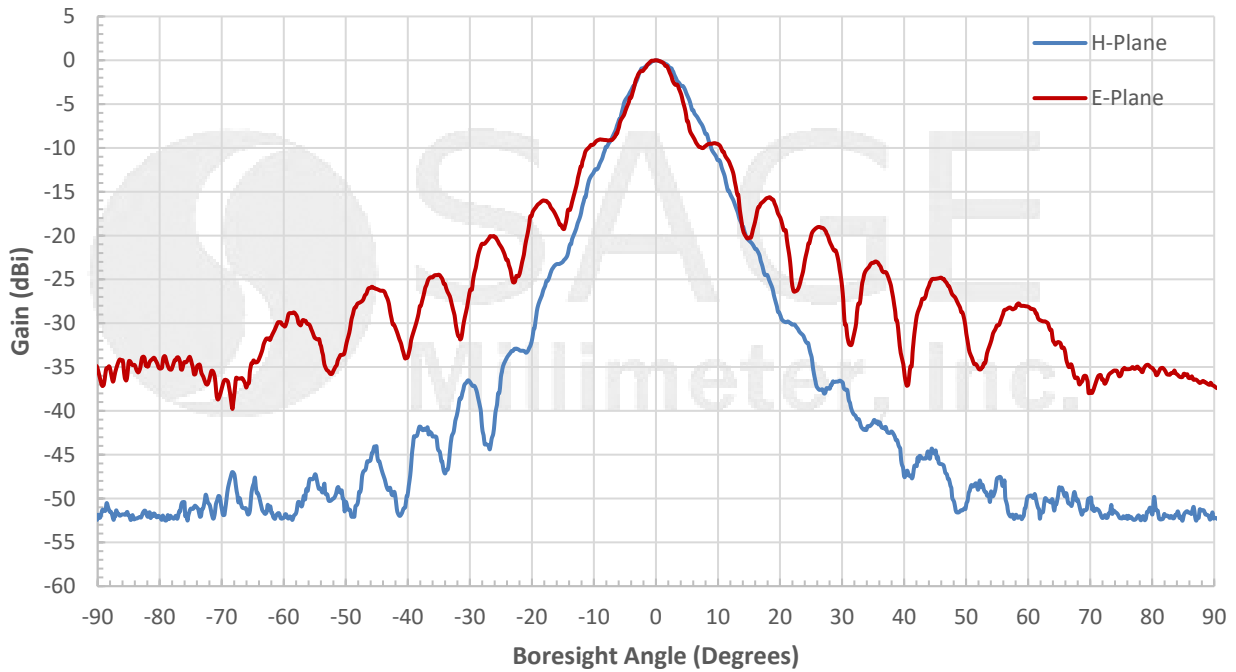
Simulated Antenna Patterns @ 18.25 GHz



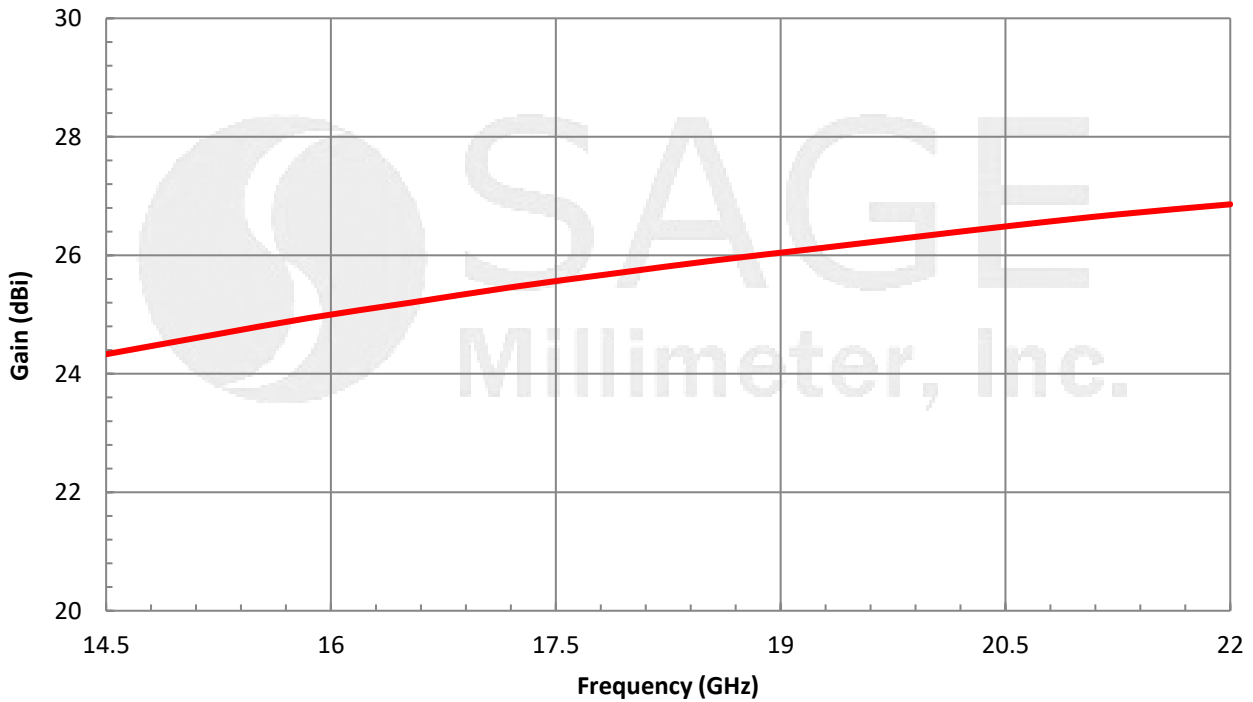


WR-51 Pyramidal Horn Antenna, 25 dBi Gain with SMA Type Coax Input

Simulated Antenna Patterns @ 22 GHz



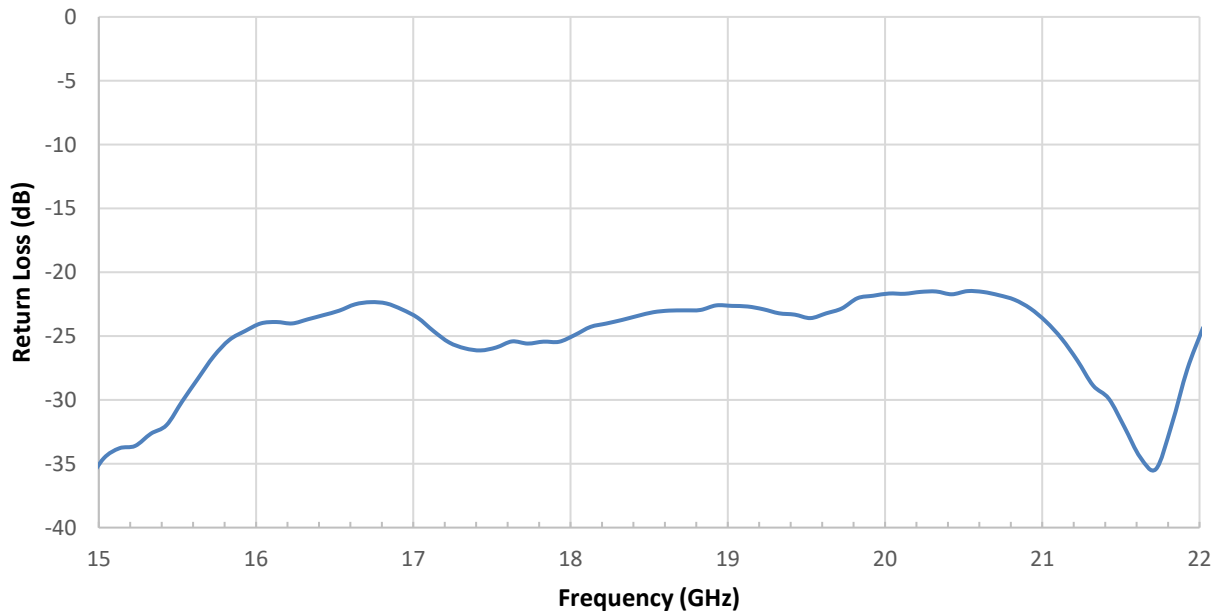
Measured Gain vs. Frequency





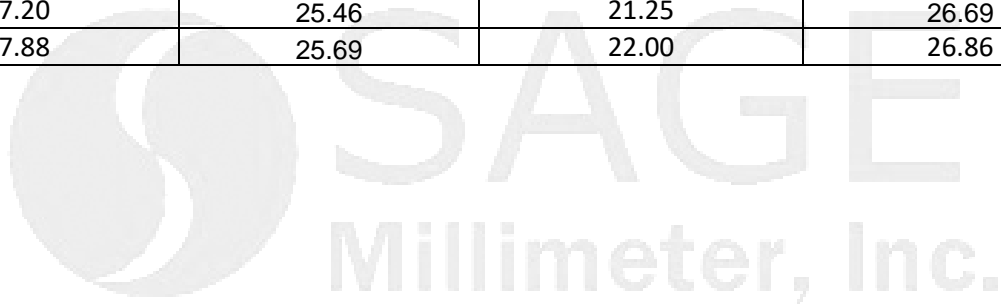
WR-51 Pyramidal Horn Antenna, 25 dBi Gain with SMA Type Coax Input

Typical Measured Return Loss vs. Frequency



Measured Gain vs. Frequency in Tabular Format

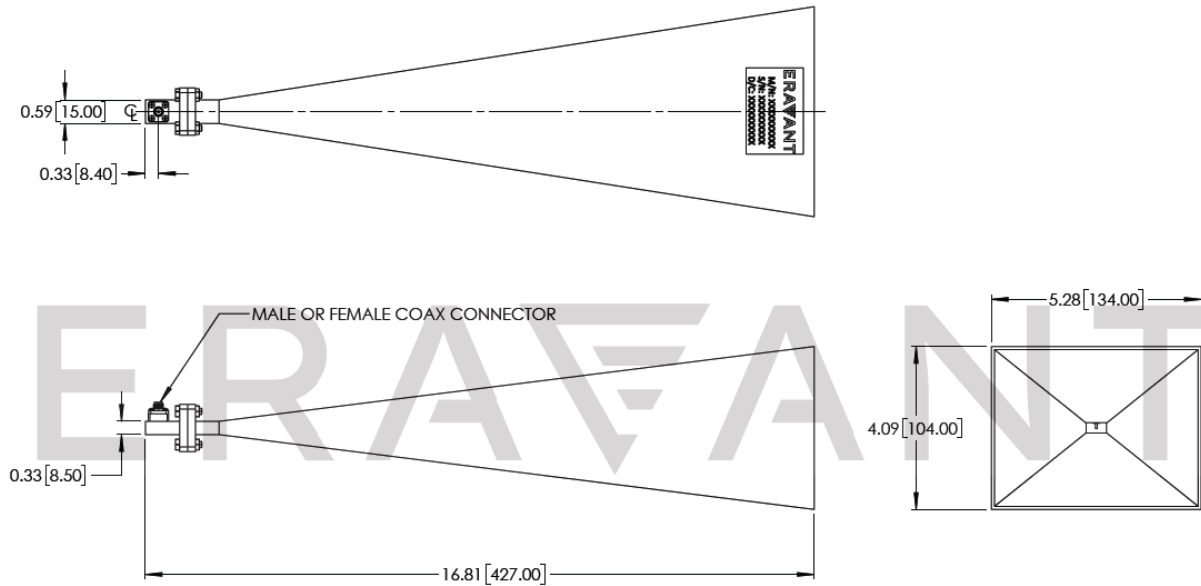
Frequency (GHz)	Gain (dBi)	Frequency (GHz)	Gain (dBi)
14.50	24.33	18.55	25.91
15.18	24.64	19.23	26.11
15.85	24.94	19.90	26.31
16.53	25.20	20.58	26.51
17.20	25.46	21.25	26.69
17.88	25.69	22.00	26.86





WR-51 Pyramidal Horn Antenna, 25 dBi Gain with SMA Type Coax Input

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



Note:

- This antenna is a mature product. The reasons for only providing simulated data can be found in the following blog [here](#).
- All testing was performed under +25 °C room temperature.
- Eravant reserves the right to change the information presented without notice.

Caution:

- 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 horn antenna will cause performance degradation and possible device damage.

