

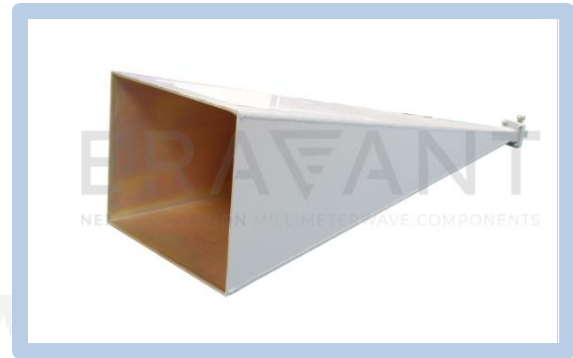


## WR-51 Pyramidal Horn Antenna, 20 dBi Gain with SMA Type Coax Input

### Description:

#### Model SAR-2018-51SF-R3 & SAR-2018-51SM-R3

K-band are pyramidal horn antenna with a right angle (90°) SMA type coax connector to cover the frequency range of 14.5 GHz to 22 GHz. The antenna offers 20 dBi nominal gain and a typical half power beamwidth of 17 degrees on the E-plane and 19 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		20 dBi	
Polarization		Linear	
3 dB Beamwidth, E-Plane		17°	
3 dB Beamwidth, H-Plane		19°	
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:

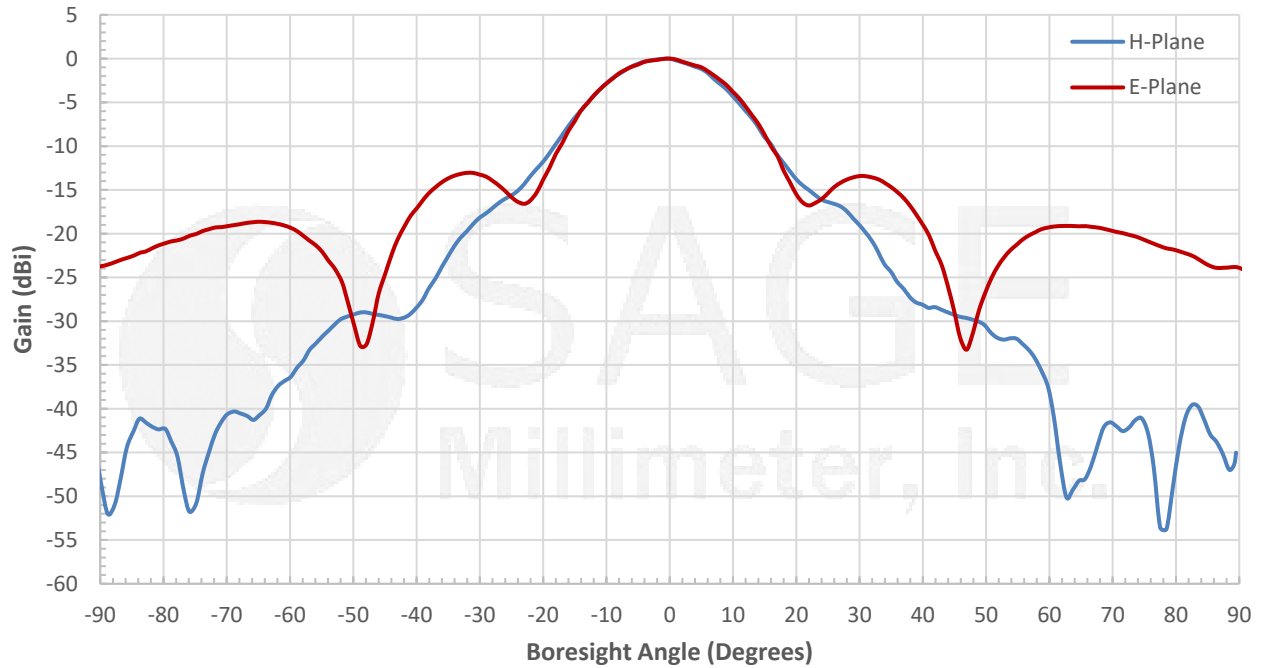
Item	Specification
Antenna Port (F)	SMA Type Female for Model Number: SAR-2018-51SF-R3
Antenna Port (M)	SMA Type Male for Model Number: SAR-2018-51SM-R3
Material	Copper
Finish	Anti-Corrosion Paint
Weight	9.74 Oz
Size	6.57" (L) X 3.15" (W) X 2.20" (H)
Outline	AR-5C1-R-H1



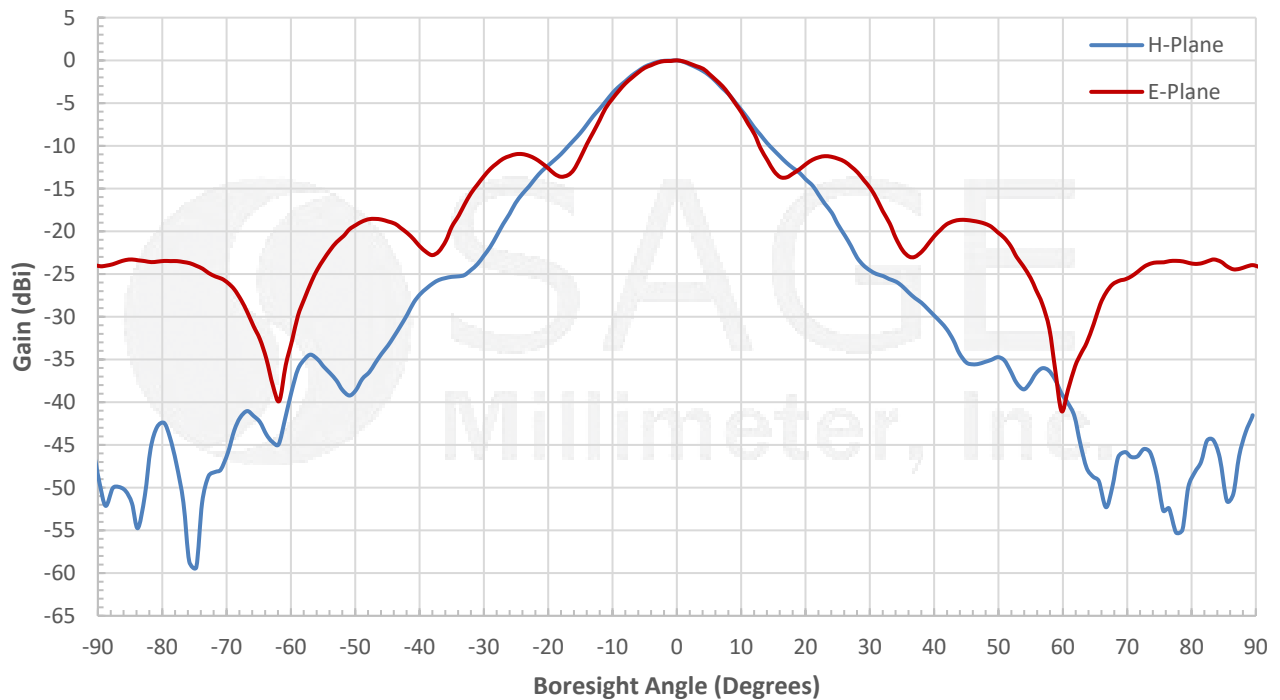


## WR-51 Pyramidal Horn Antenna, 20 dBi Gain with SMA Type Coax Input

### Simulated Antenna Patterns @ 14.5 GHz



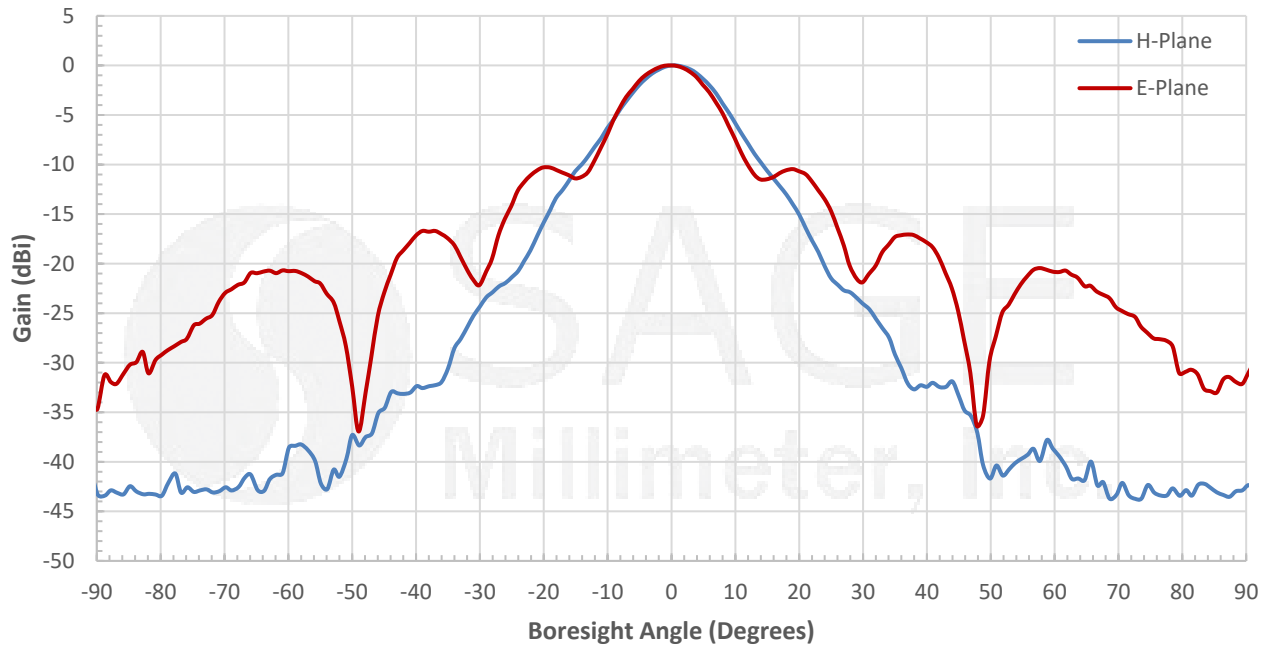
### Simulated Antenna Patterns @ 18.25 GHz



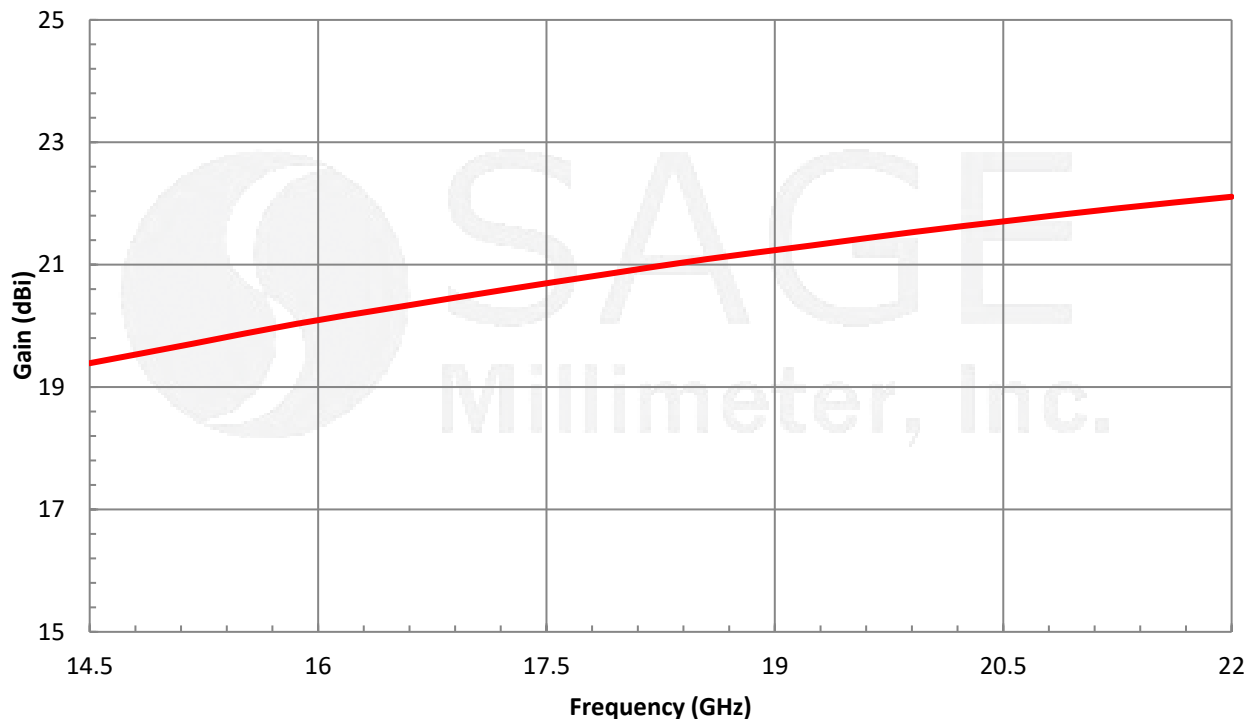


## WR-51 Pyramidal Horn Antenna, 20 dBi Gain with SMA Type Coax Input

### Simulated Antenna Patterns @ 22 GHz



### Measured Gain vs. Frequency



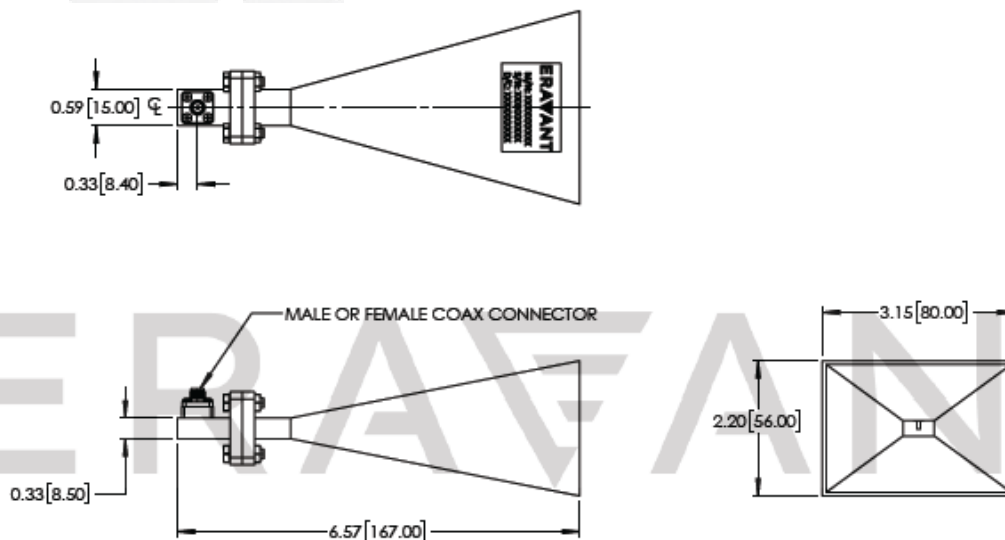


## WR-51 Pyramidal Horn Antenna, 20 dBi Gain with SMA Type Coax Input

### Measured Gain vs. Frequency in Tabular Format

Frequency (GHz)	Gain (dB)	Frequency (GHz)	Gain (dB)
14.50	19.39	18.55	21.09
15.18	19.71	19.23	21.31
15.85	20.03	19.90	21.53
16.53	20.31	20.58	21.73
17.20	20.58	21.25	21.92
17.88	20.84	22	22.11

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



**Note:**

- All data presented is collected from a sample lot. Actual data may vary unit to unit, slightly.
- 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. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**
- Any foreign objects in the horn antenna will cause performance degradation and possible device damage.

