



## Ku Band Microstrip Patch Antenna, 14 GHz, 6 dBi, 50° x 95°

### Description:

**Model SAM-1431430695-SF-L1-8C** is a linearly polarized, 1 x 8, 14 GHz microstrip patch antenna. The antenna implements eight individual antenna ports so that beamforming can be achieved via various input signal definitions. The individual patch antenna has a gain of 6 dBi and a typical vertical beamwidth of 50 degrees and horizontal beamwidth of 95 degrees respectively. The combined gain and beamwidth of the array are 15 dBi and 8 degrees when the array is fed with equal amplitude and phase signals. The antenna is constructed with a high performance, low loss soft microwave substrate to achieve the best performance in the class. The RF interface is eight SMA (F) coaxial connectors. Other interfaces such as K (F) connectors, are offered under various model numbers.



### Features:

- Compact Size
- Beamforming Feasibility
- Low Cost in Volume

### Applications:

- Beamforming
- Communication Systems
- Probe Stations

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency		14.0 GHz	
Bandwidth		±0.1 GHz	
Single Patch Gain		6.0 dBi	
3 dB Beamwidth	50° (Vertical, E Plane) x 95° (Horizontal, H Plane)		
Sidelobe Level		-12 dB	
Array Gain (Fed in Phase)		15.0 dBi	
Array 3 dB Beamwidth (Fed in Phase)	8° (Vertical, E Plane) x 95° (Horizontal, H Plane)		
Array Sidelobe Level (Fed in Phase)		-12 dB	
Polarization		Linear	
Return Loss		6 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

### Mechanical Specifications:

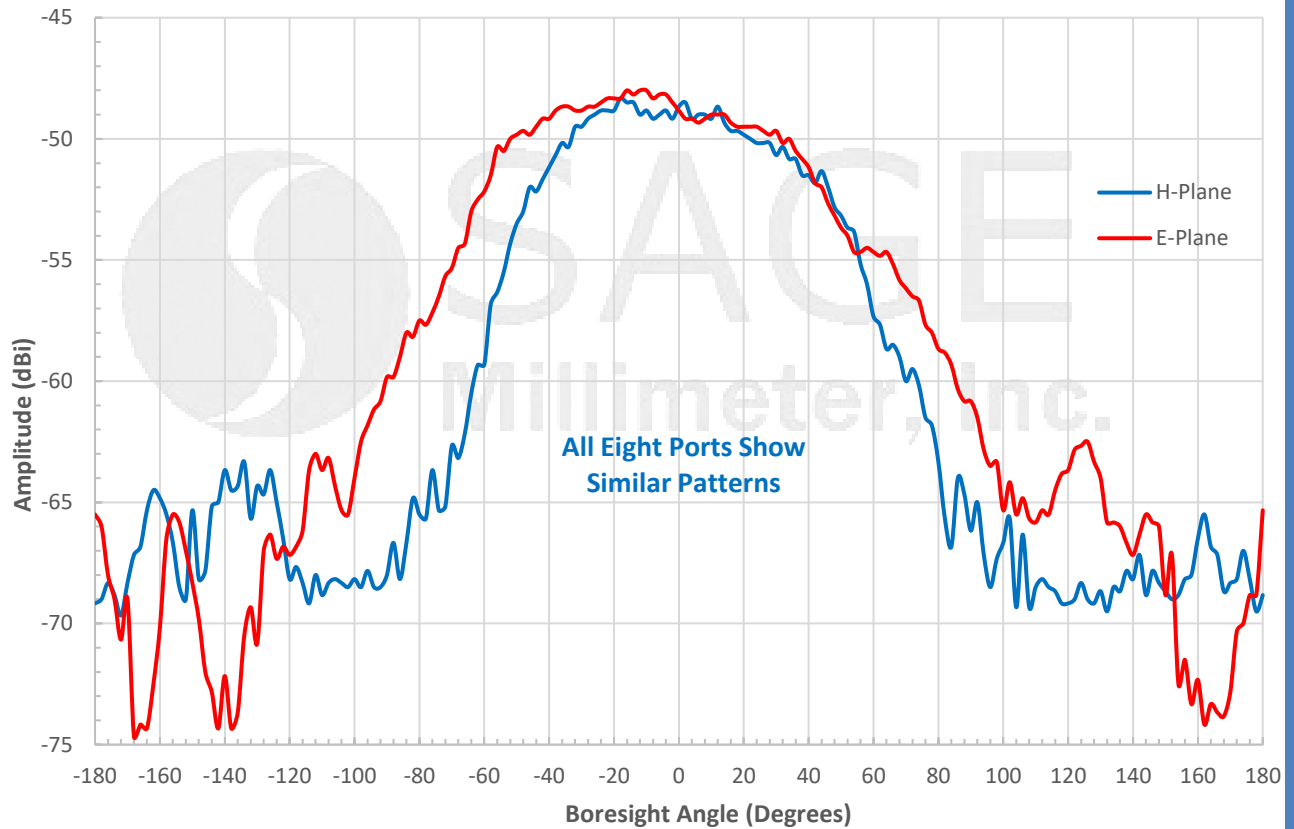
Item	Specifications
Antenna Port	8 x SMA (F) Coaxial Connectors
Number of Elements	8 (H) x 1 (V)
Baseplate Material	Aluminum
Patch Finish	Immersion Tin
Weight	3 Oz
Size	3.80" (L) x 0.60" (H) x 0.64" (W)
Outline	AM-C6-9550-8C

www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505  
 Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

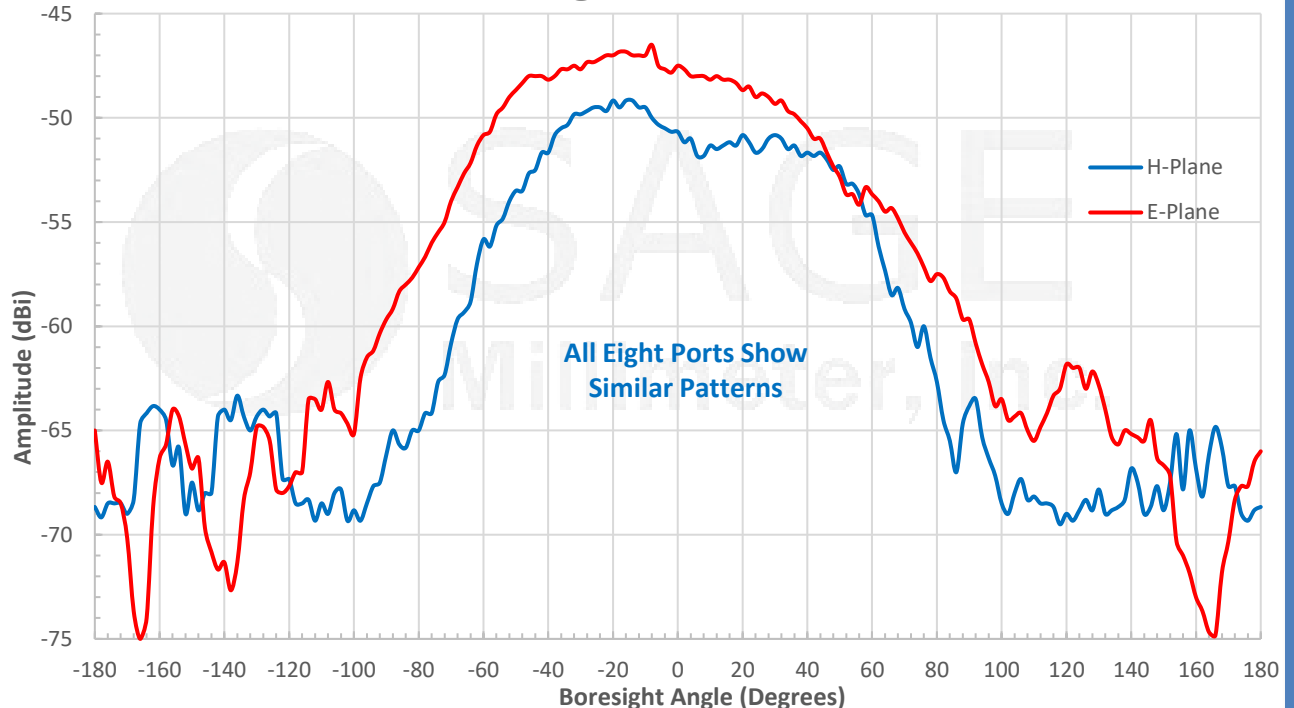


## Ku Band Microstrip Patch Antenna, 14 GHz, 6 dBi, 50° x 95°

### Measured Individual Patch Patterns @ 13.7 GHz



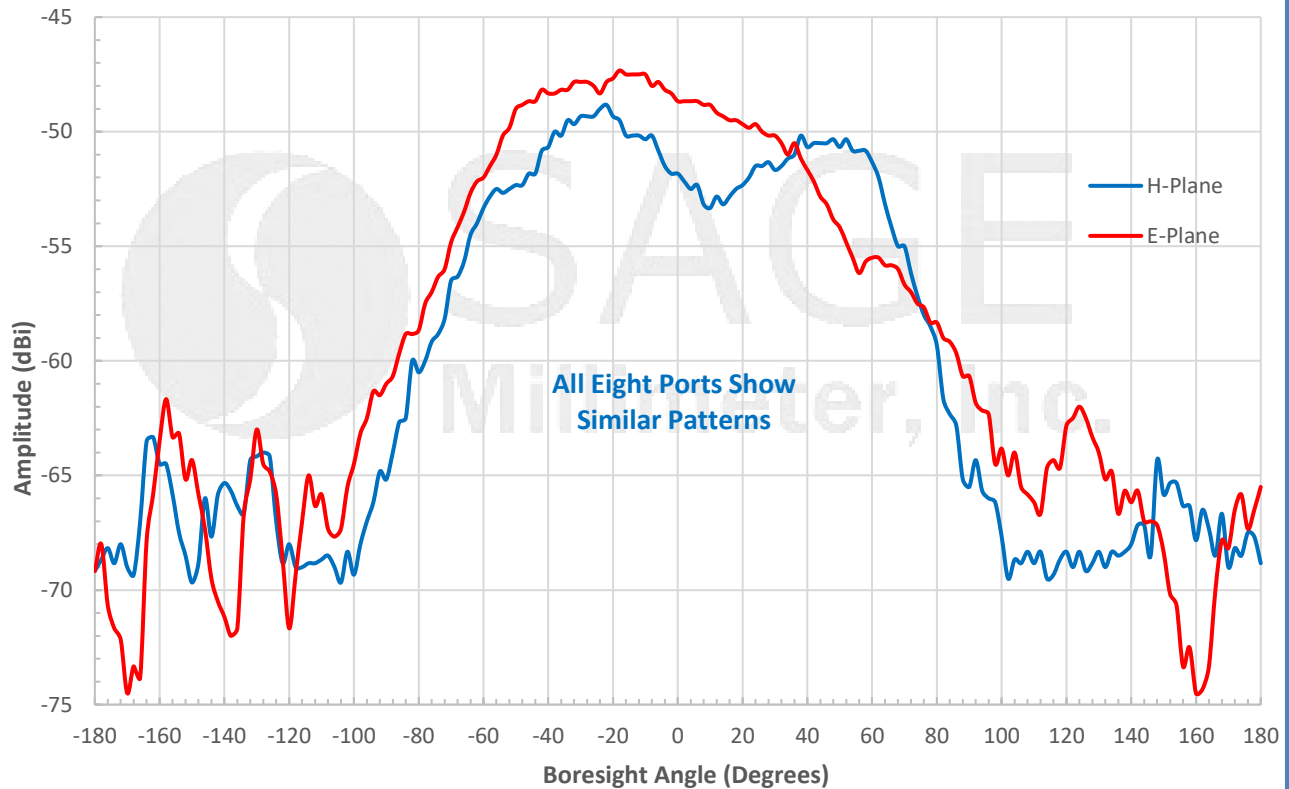
### Measured Individual Patch Patterns @ 13.8 GHz



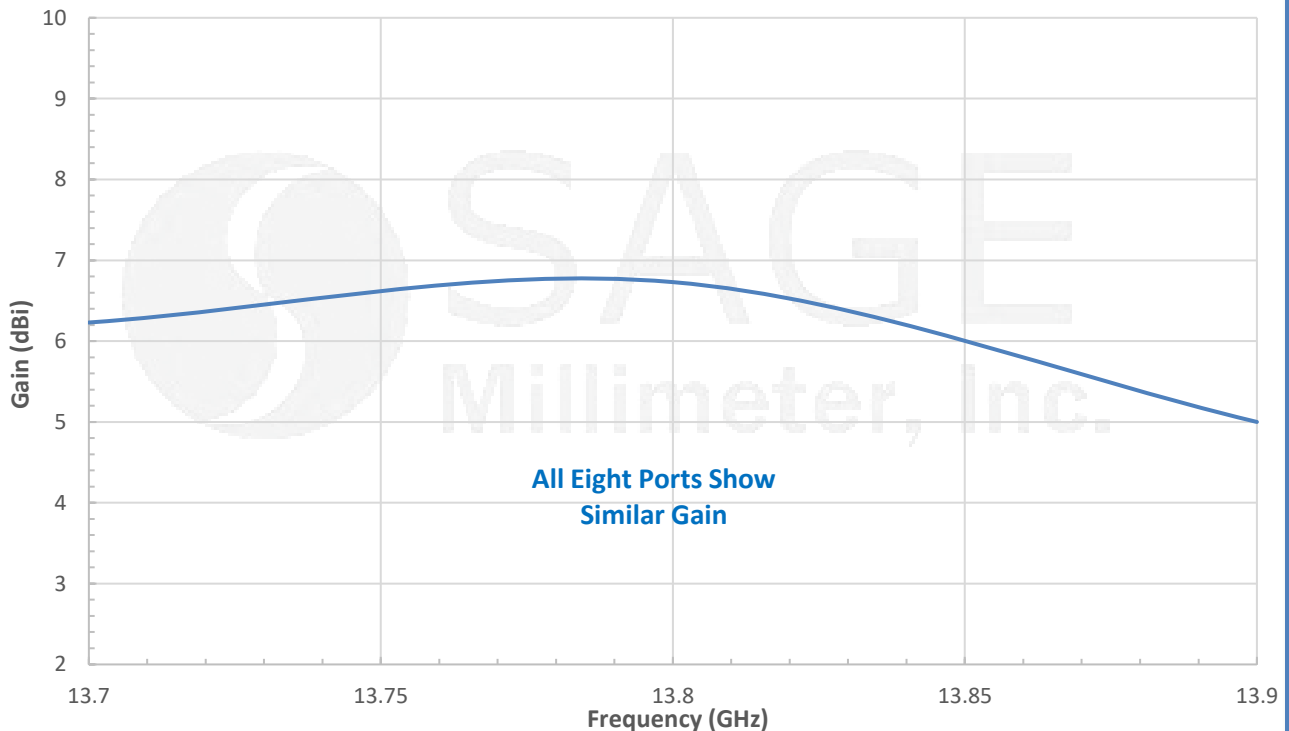


## Ku Band Microstrip Patch Antenna, 14 GHz, 6 dBi, 50° x 95°

### Measured Individual Patch Patterns @ 13.9 GHz



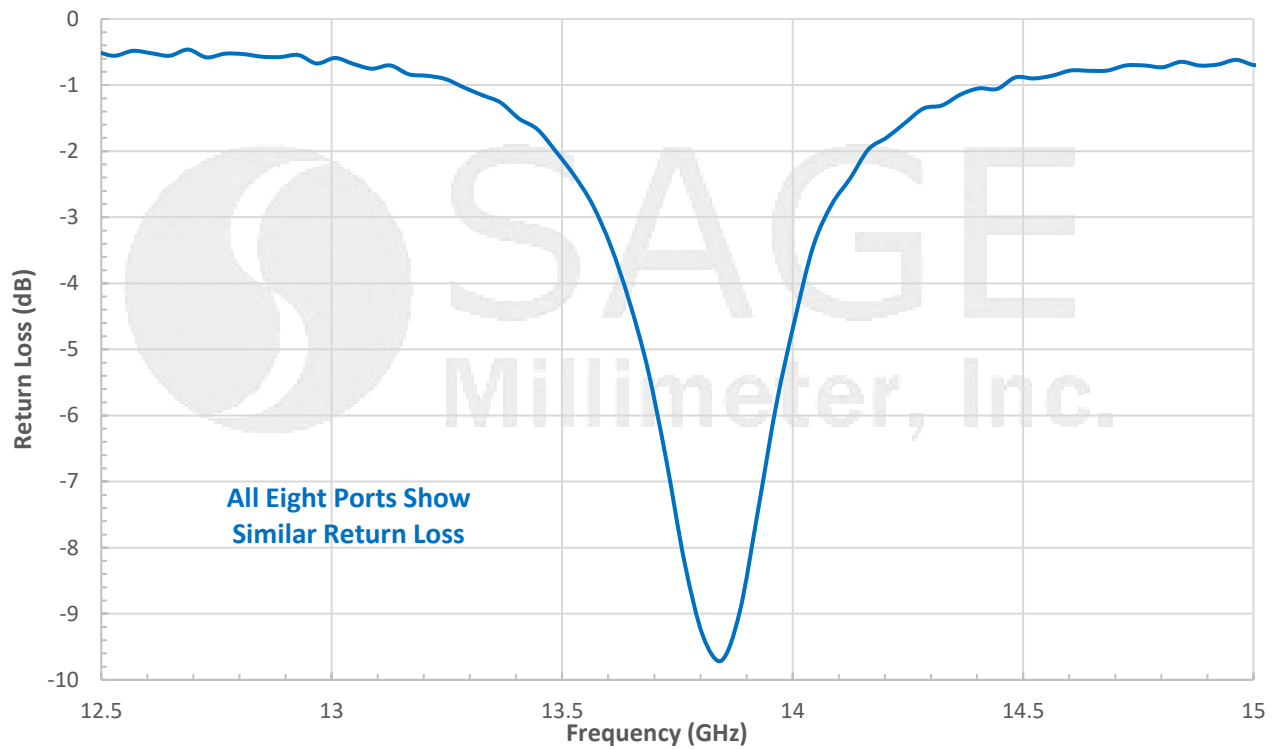
### Measured Individual Patch Gain vs. Frequency



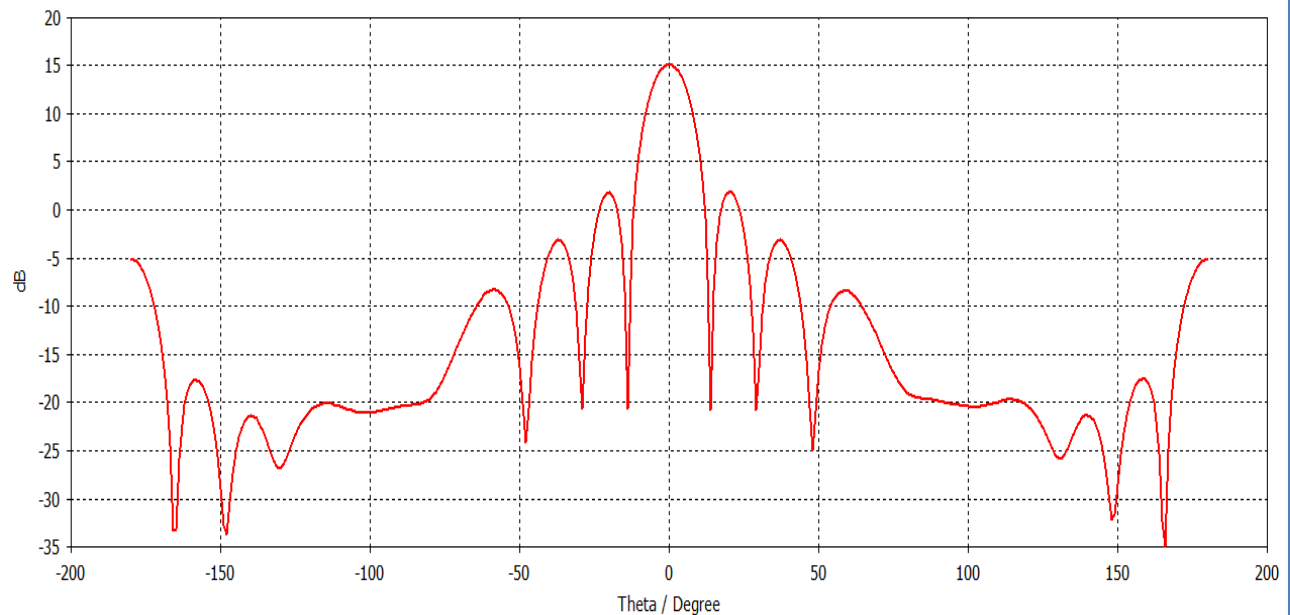


## Ku Band Microstrip Patch Antenna, 14 GHz, 6 dBi, 50° x 95°

### Measured Individual Patch Return Loss vs. Frequency



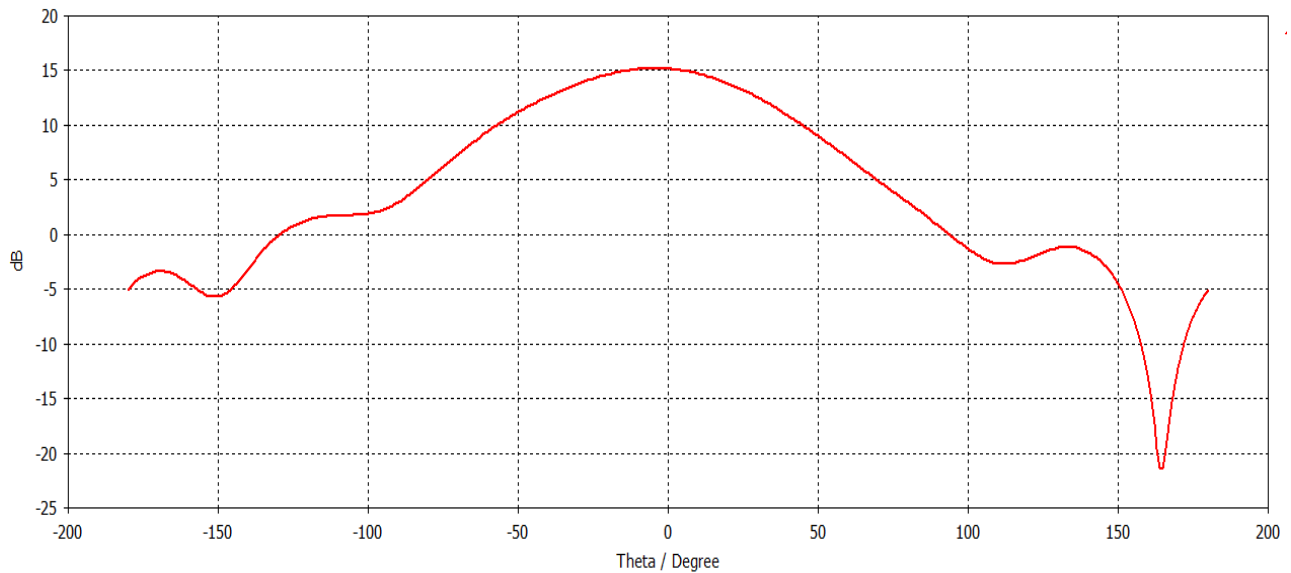
### In-Phase Fed Simulated H-Plane Patch Array Pattern @ 14 GHz



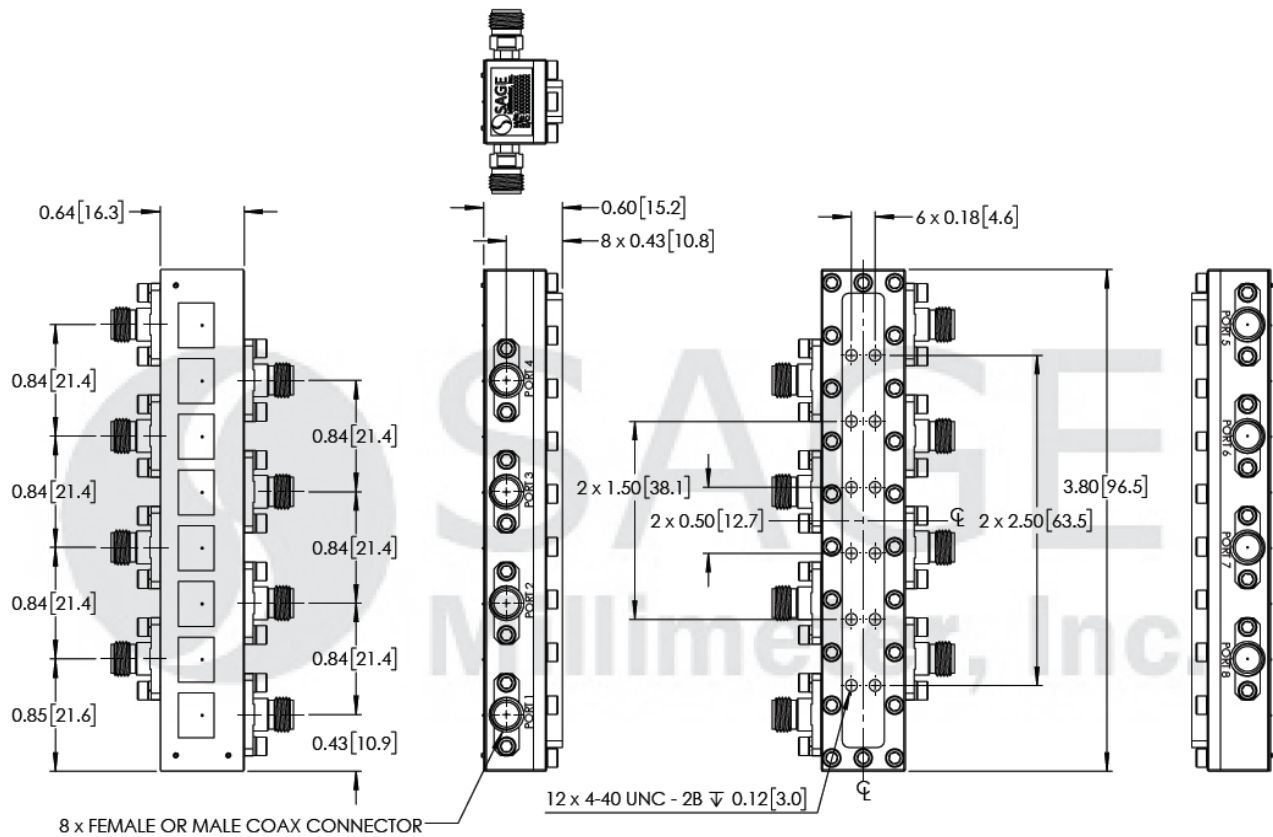


## Ku Band Microstrip Patch Antenna, 14 GHz, 6 dBi, 50° x 95°

### In-Phase Fed Simulated E-Plane Patch Array Pattern @ 14 GHz



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



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### Note:

- Individual Patch Pattern, Individual Patch Gain, and Individual Patch Return Loss data presented is collected from a sample lot. Actual data may vary unit to unit, slightly.
- In Phase Fed Patch Array Pattern data is simulated. Actual data may vary slightly.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

### Caution:

- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

