

SAM-2832930695-2F-L1-4C

Ka Band Microstrip Patch Array Antenna, 28 Ghz, 6 dBi, 50° x 95°

SAM-2832930695-2F-L1-4C is a linear polarized, 28.5 GHz microstrip patch 1 x 4 array antenna. The antenna array implements four 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 12 dB and when the array is fed with equal amplitude but 180° out-of-phase signals at two sides. The antenna is constructed with a high performing, low loss soft microwave substrate to achieve the best performance in the class. The RF interface is four 2.4mm (F) coaxial connectors. Other interface, such as K(F) connectors are offered under various model numbers.



Electrical Specifications

| Parameter | Minimum | Typical | Maximum |
|---------------------------|---|----------|----------|
| Frequency Range | 27.5 GHz | | 28.5 GHz |
| Gain | | 6.0 dBi | |
| 3 dB Beamwidth | 50° (Vertical, E Plane) x 95° (Horizontal, H Plane) | | |
| Sidelobe Level | | -12 dB | |
| Array Gain | | 12.0 dBi | |
| Array 3 dB Beamwidth | 15° (Vertical, E Plane) x 95° (Horizontal, H Plane) | | |
| Array Sidelobe Level | | -12 dB | |
| Polarization | | Linear | |
| Return Loss | | 10 dB | |
| Specification Temperature | | +25°C | |
| Operating Temperature | -40°C | | +85°C |

Mechanical Specifications:

| Item | Specification |
|--------------------|----------------------------------|
| Antenna Port | 4 x 2.4mm (F) Coaxial Connectors |
| Number of Elements | 4 (H) x 1 (V) |
| Baseplate Material | Aluminum |
| Patch Finish | Immersion Tin |
| Weight | 1.5 Oz |
| Size | 1.17" (L) x 0.5" (H) x 0.54" (W) |
| Outline | AM-CA-9550-4C |

ECCN

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FEATURES

- Compact Size
- Beamforming Feasibility
- Low Cost in Volume

APPLICATIONS

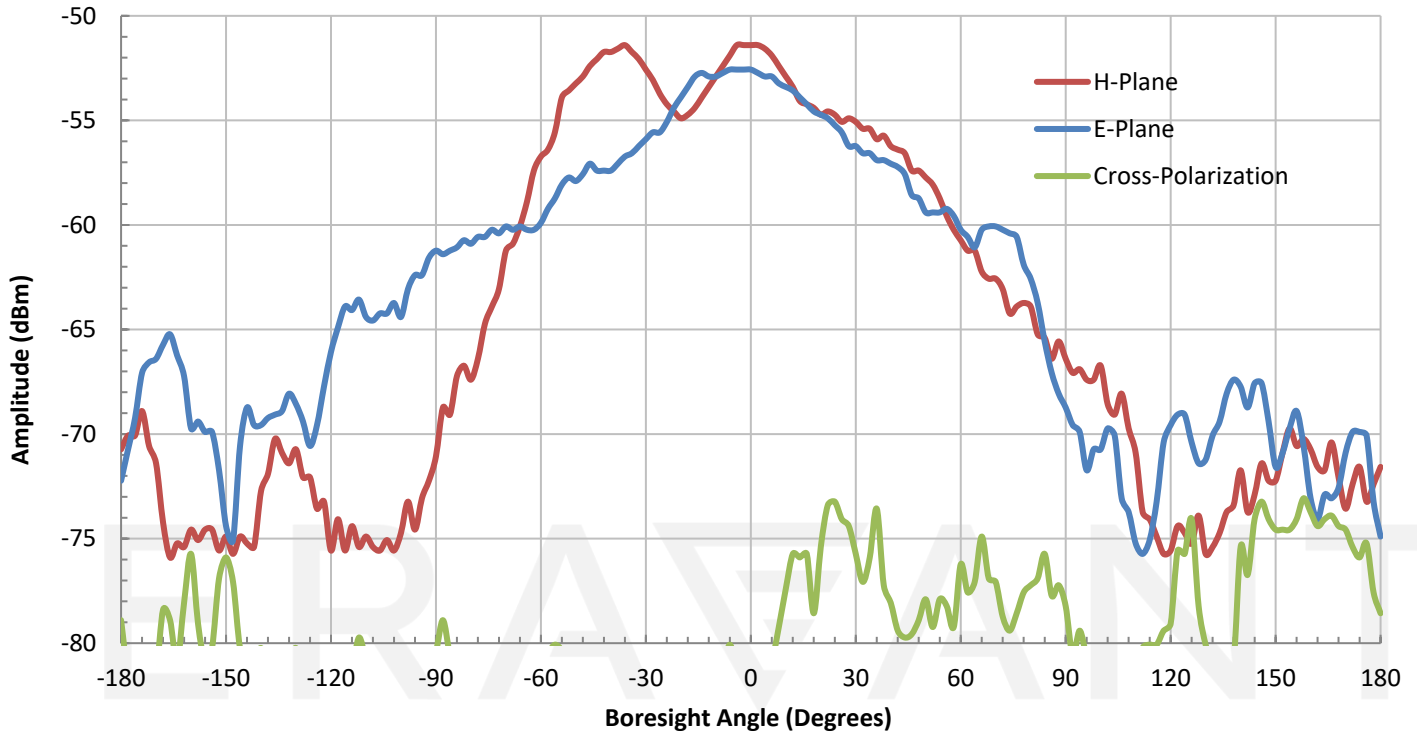
- 5G Systems
- Beamforming
- Communication Systems
- Probe Stations

SUPPLEMENTAL DETAILS

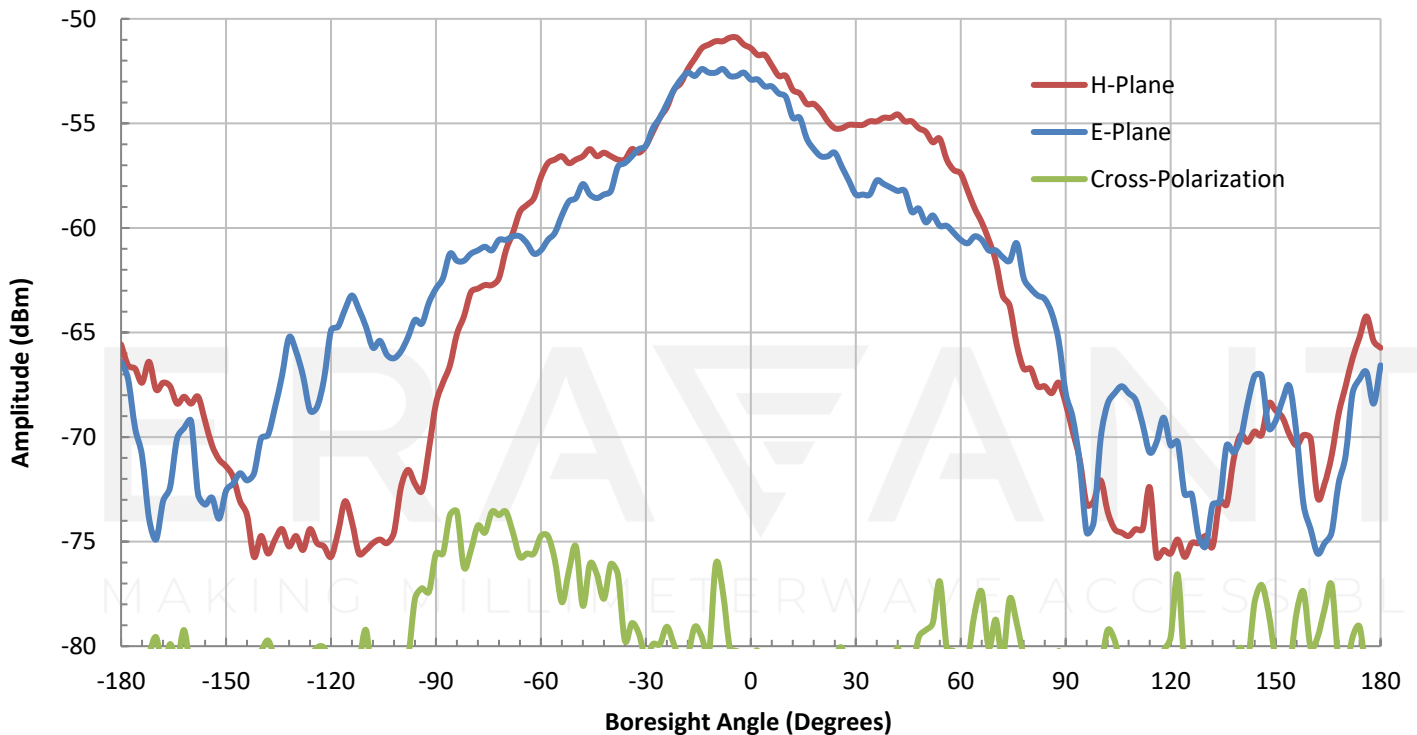


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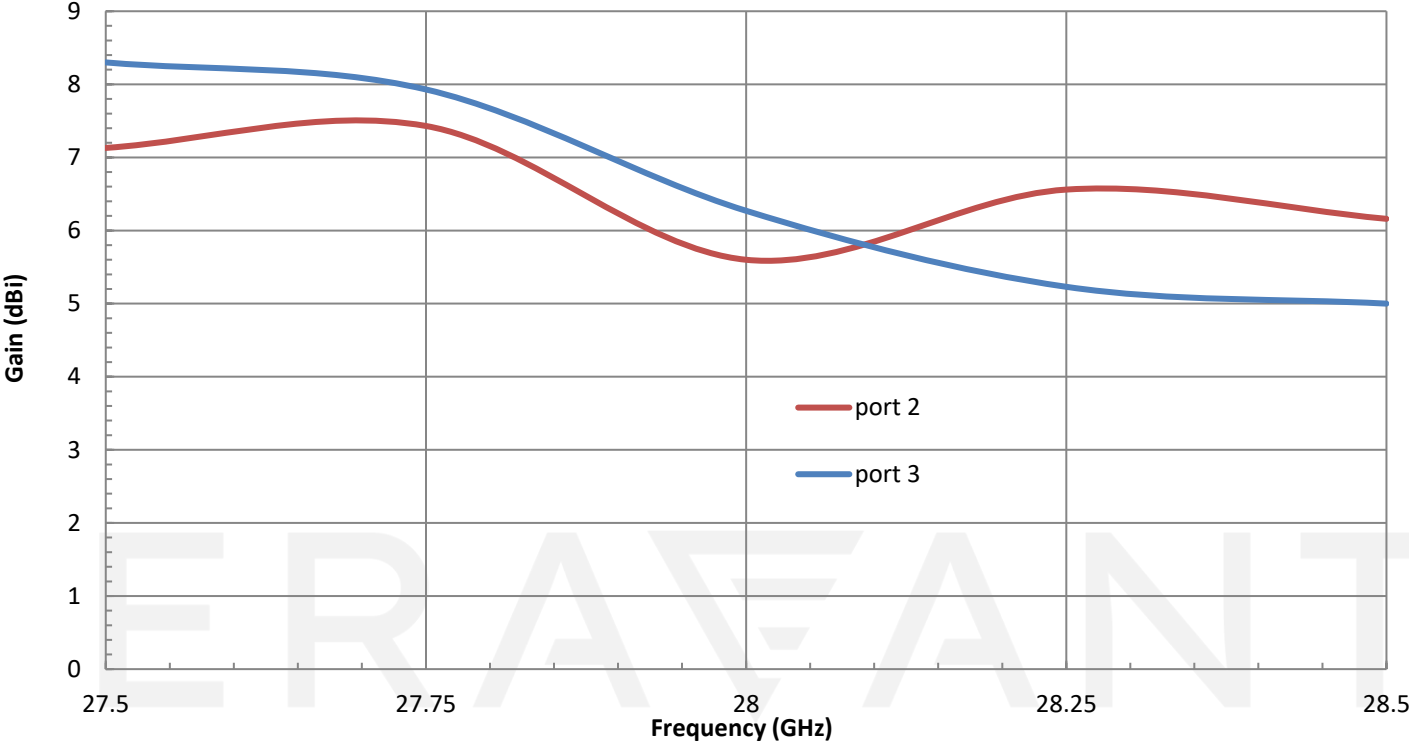
Measured Antenna Patterns for Port 1 & 4 @ 28 GHz



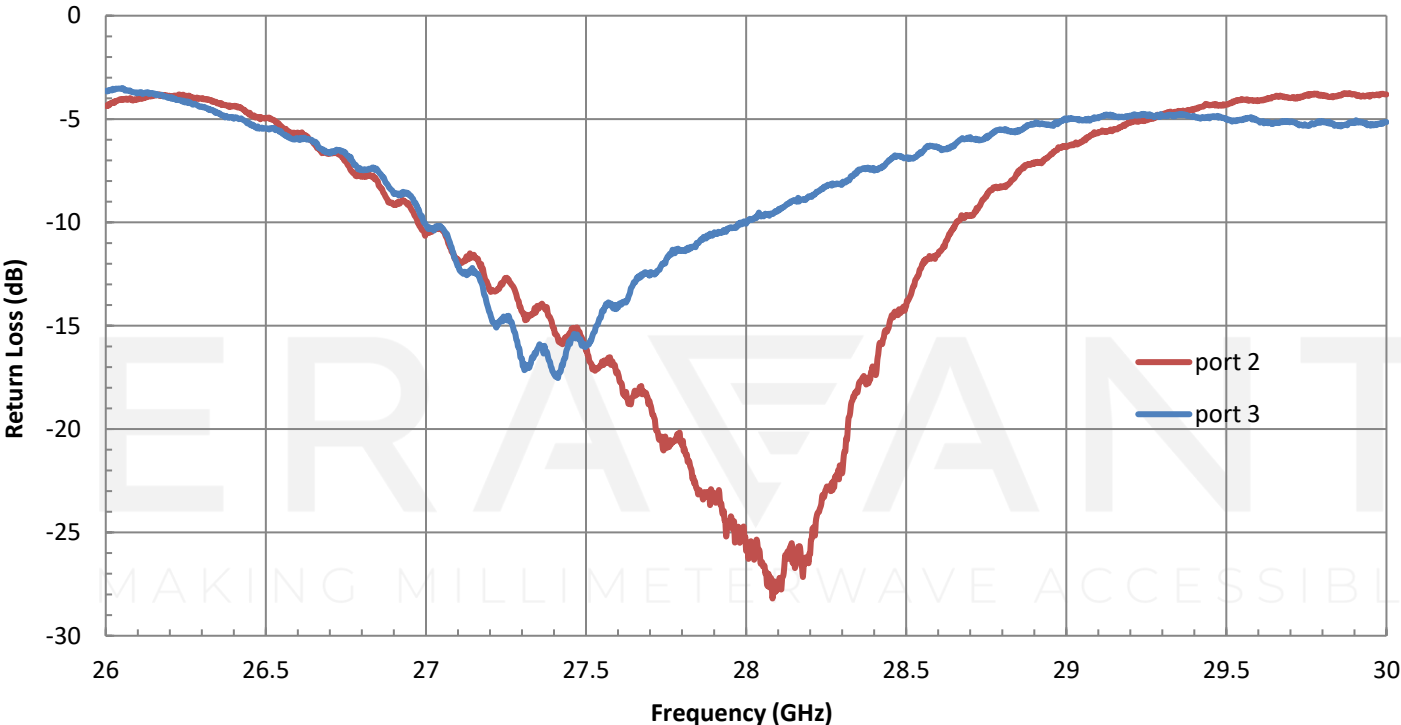
Measured Antenna Patterns for Port 2 & 3 @ 28 GHz



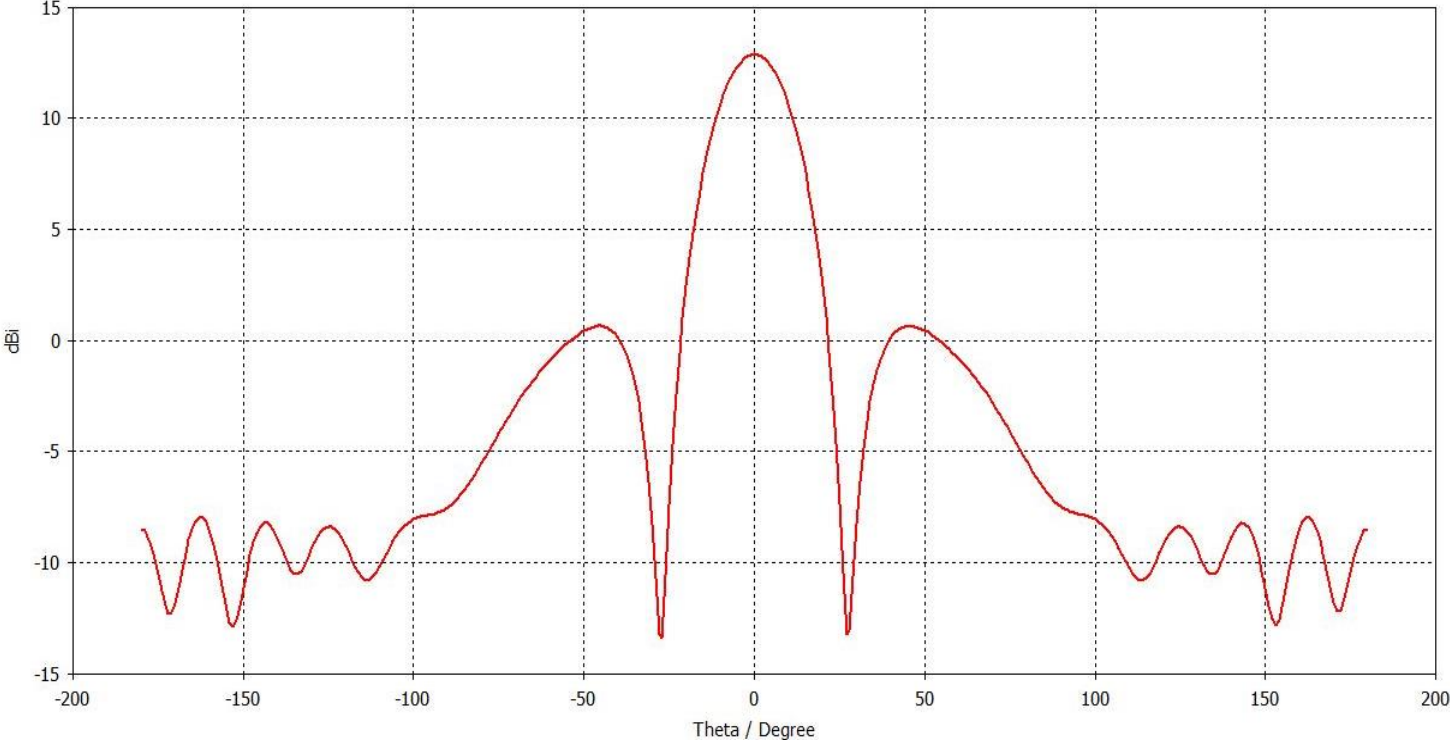
Typical Measured Patch Antenna Gain vs. Frequency



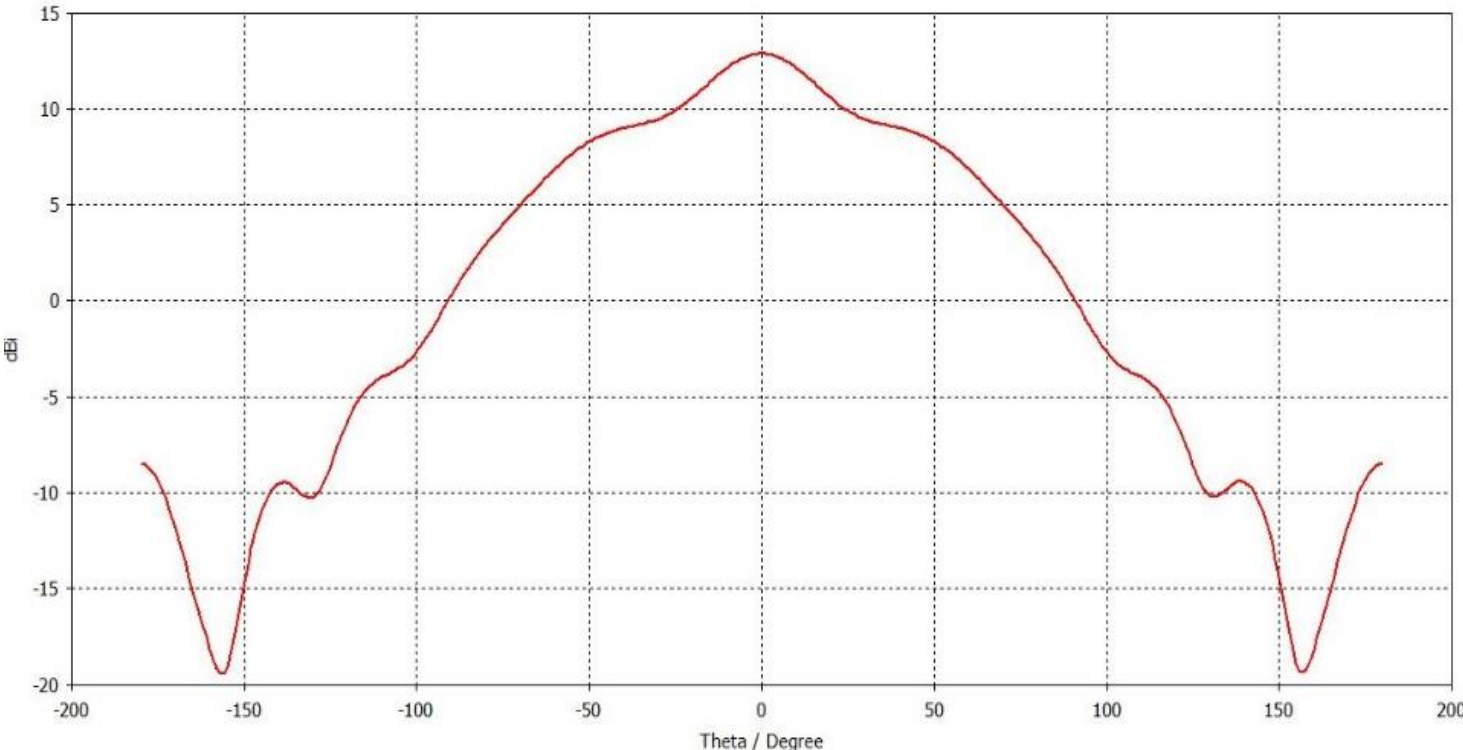
Typical Measured Patch Antenna Return Loss vs. Frequency



Simulated H-Plane Patch Array Antenna Pattern @ 28 GHz

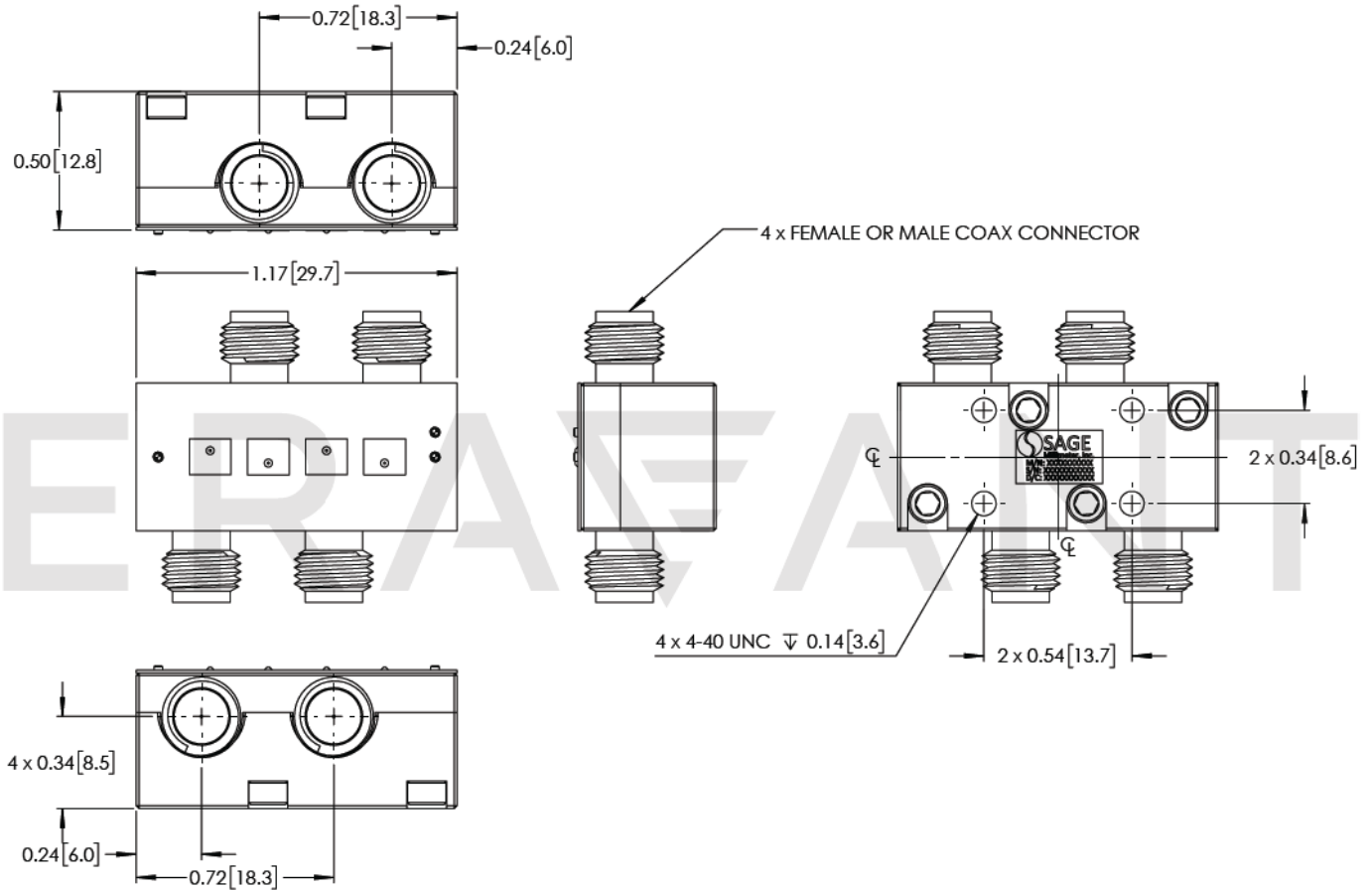


Simulated E-Plane Patch Array Antenna Pattern @ 28 GHz



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



NOTE:

- Antenna Pattern, Gain and Return Loss data presented are for individual patch antennas and collected from a sample lot. Actual data may vary unit to unit, slightly.
- Combined Antenna Pattern data presented is simulated. Actual data may vary slightly.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Proper torque should be applied: 8.0 ± 0.15 inch-pounds (0.92 ± 0.05 Nm). Torque wrench model SCH-08008-S1 is highly recommended.

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