

SAF-2334431535-328-S1-280-DP

WR-28 Dual Polarized Scalar Feed Horn Antenna, 23 to 44 GHz, 15 dBi Gain

SAF-2334431535-328-S1-280-DP is a broadband WR-28 dual polarized scalar feed horn antenna that covers several popular 5G bands in the frequency range of 23 to 44 GHz. The antenna features an integrated orthomode transducer (OMT) that provides high port isolation and a broad band scalar horn that provides low sidelobe levels. The OMT enables the antenna to separate a circular or elliptical polarized waveform into two linear, orthogonal waveforms or vice versa. The dual polarized horn also supports either vertical or horizontal polarized waveguide forms. At center frequency, the horn antenna exhibits 15 dBi nominal gain and a typical half power beamwidth of 35 degrees and -25 dB sidelobe levels, respectively. The antenna exhibits 40 dB typical port isolation between the horizontal and vertical ports. All ports have UG-599/U compatible flanges with 4-40 threaded holes. The OMT ([SAT-343-28028-S1](#)), compact square to circular transition ([SWT-280328-SA-C-QC](#)), and broadband scalar feed horn ([SAF-2234431535-328-S1](#)) can all be purchased separately. Additional customization options, such as converting the waveguide ports to coaxial ports by adding waveguide to coax adapters ([SWC-2434431505-282F-R1](#) or [SWC-2434431505-282M-R1](#)), are available under different model numbers.



Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	23 GHz		44 GHz
Gain		15 dBi	
3 dB Beamwidth, E-plane @ 33 GHz		35°	
3 dB Beamwidth, H-plane @ 33 GHz		35°	
Sidelobes		-25 dB	
Isolation		40 dB	
Return Loss		15 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

Mechanical Specifications:

Item	Specification
Horizontal and Vertical Ports	WR-28 Waveguide with UG-599/U Compatible Flange
Material	Aluminum, Brass
Finish	Gold Plated
Weight	5.6 Oz
Outline	AF-CA15-328-280-DP-2

ECCN

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FEATURES

- 23 to 44 GHz Operations
- Linear and Circular Polarizations
- Low Side Lobe Levels
- High Port Isolation

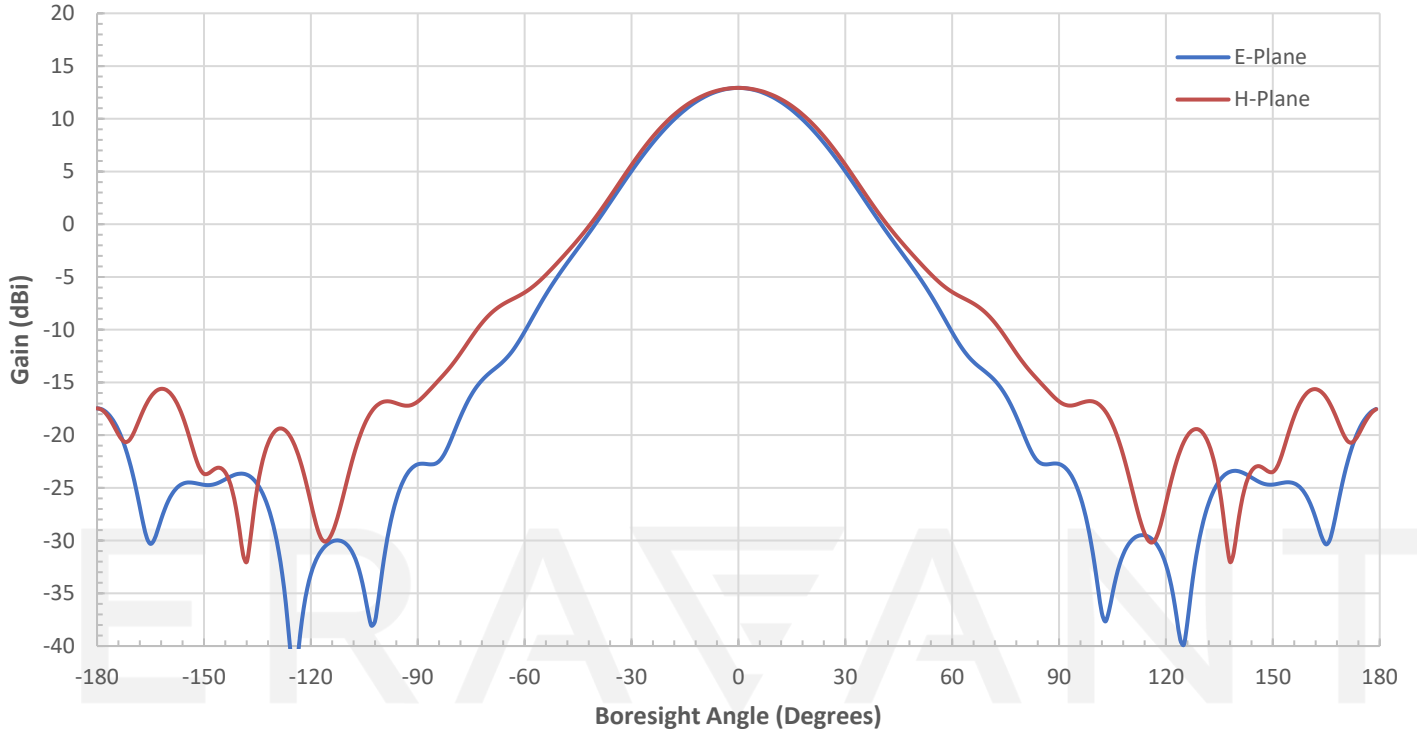
APPLICATIONS

- 5G mmW Systems
- Radar Systems
- Communication Systems
- Antenna Range
- Circular and Linear Waveform Separation and Combination

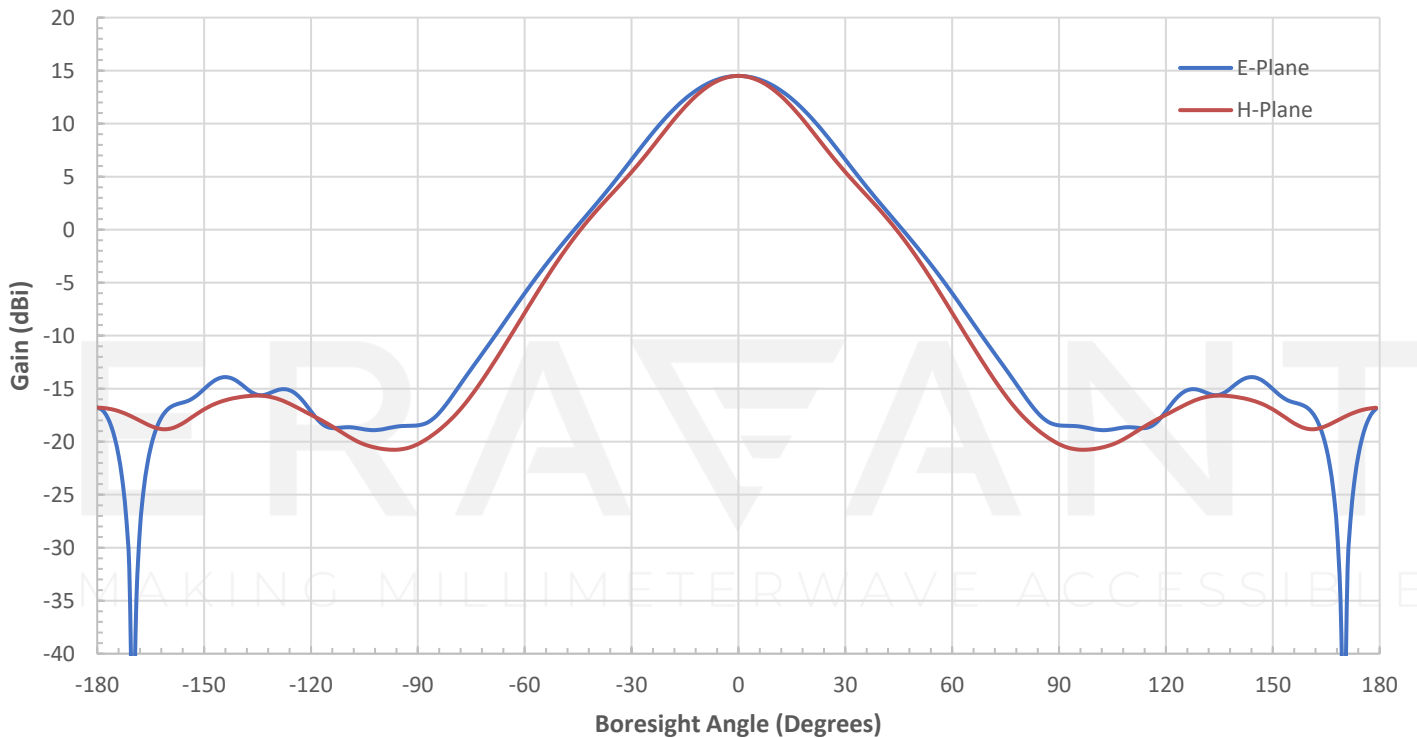
SUPPLEMENTAL DETAILS



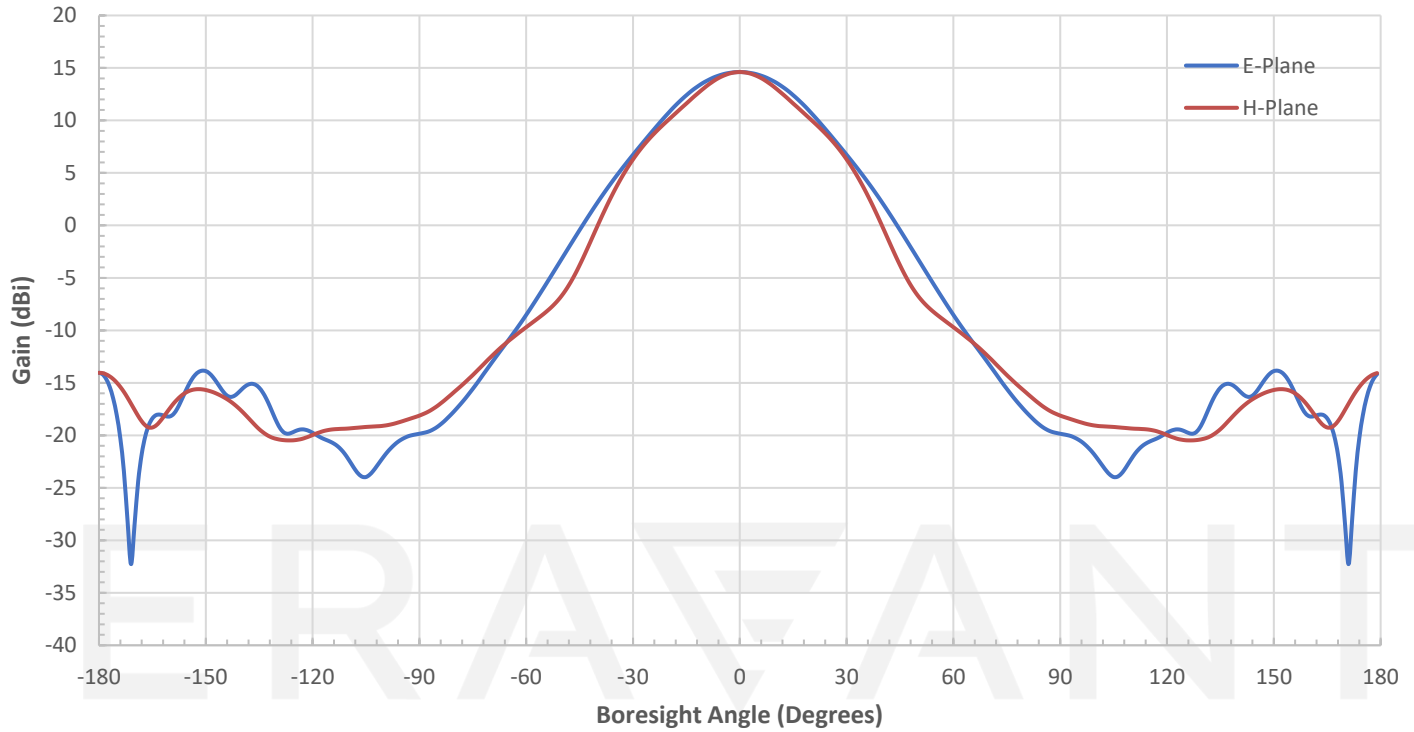
Simulated Antenna Patterns @ 22 GHz



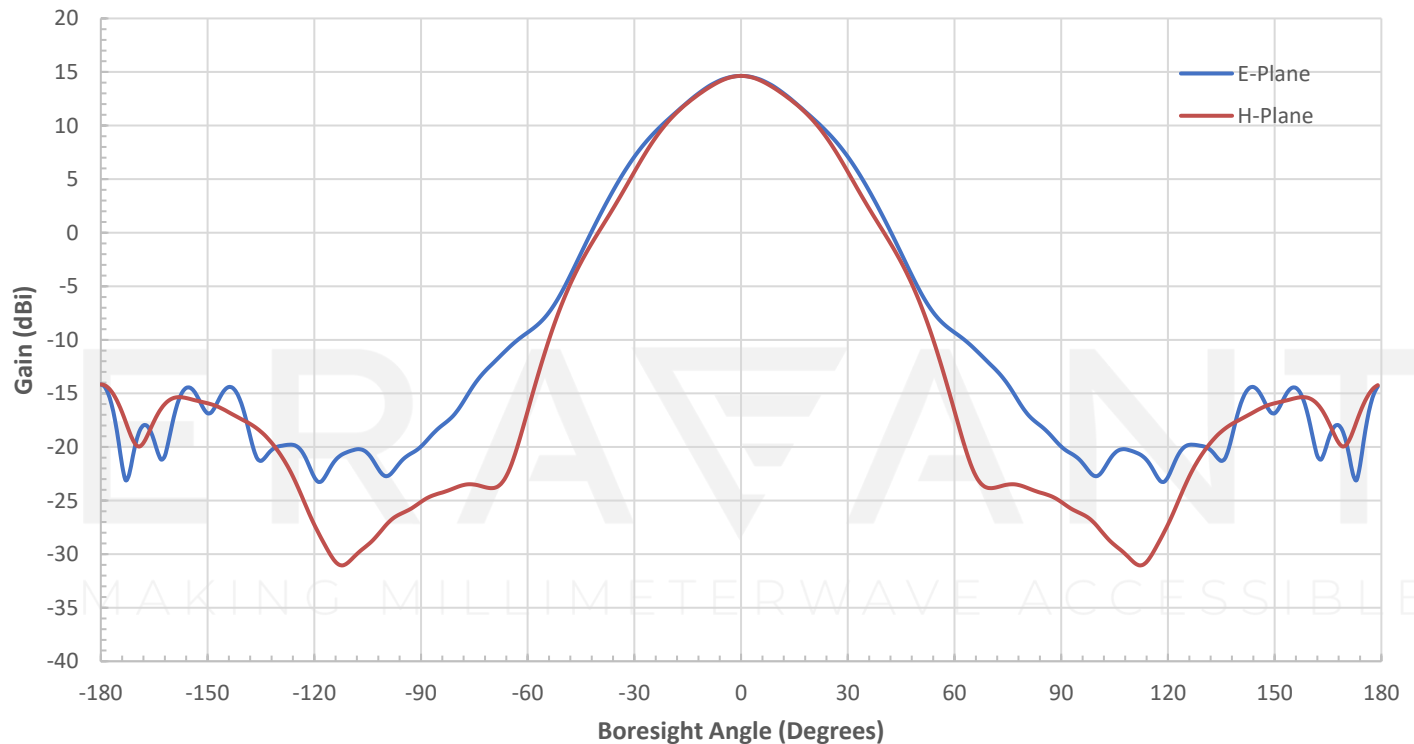
Simulated Antenna Patterns @ 24 GHz



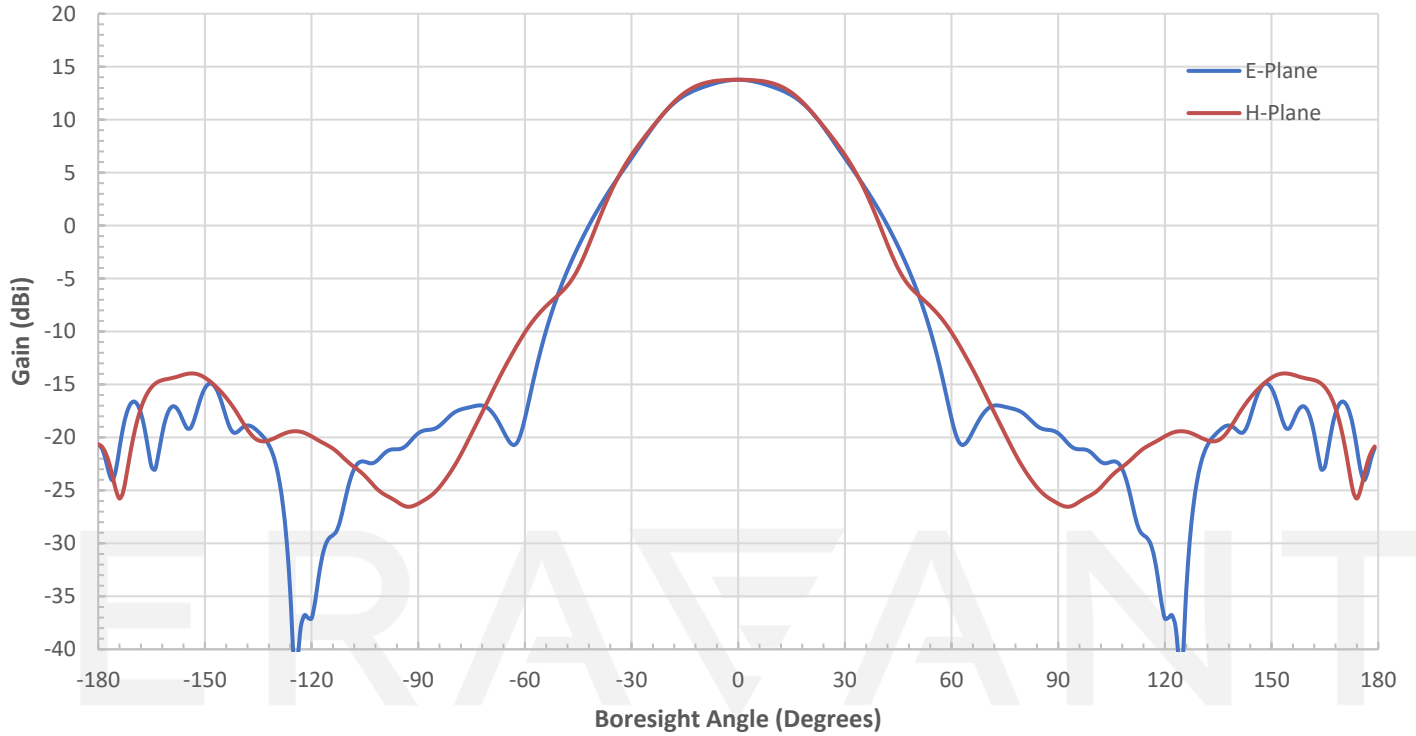
Simulated Antenna Patterns @ 30 GHz



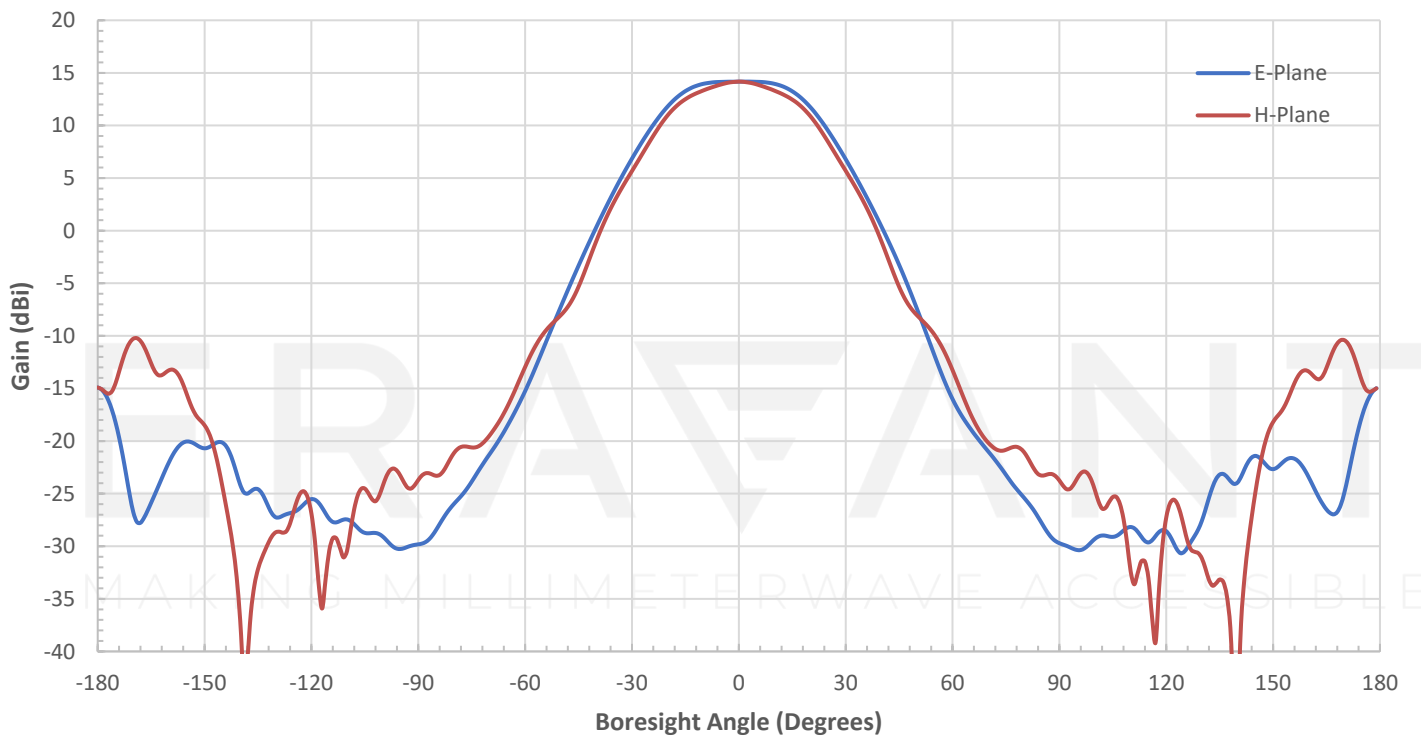
Simulated Antenna Patterns @ 36 GHz



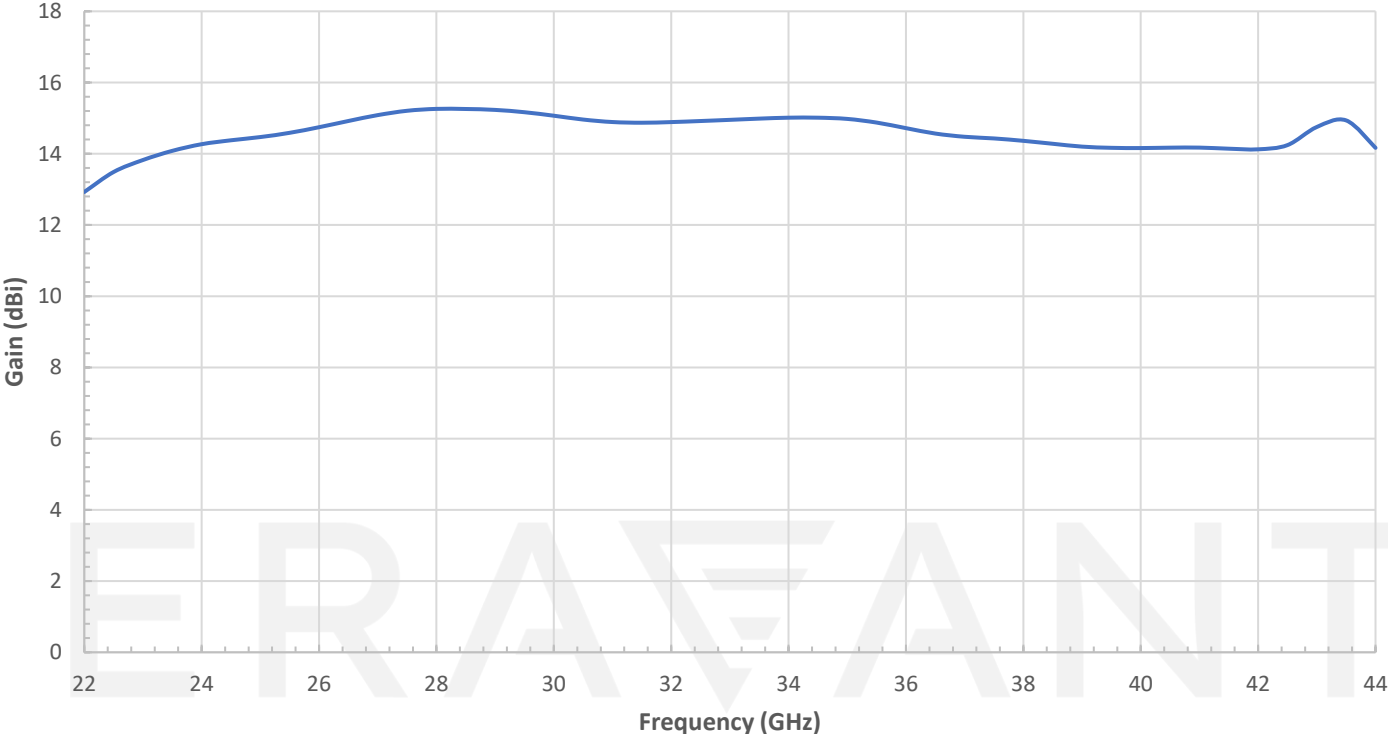
Simulated Antenna Patterns @ 42 GHz



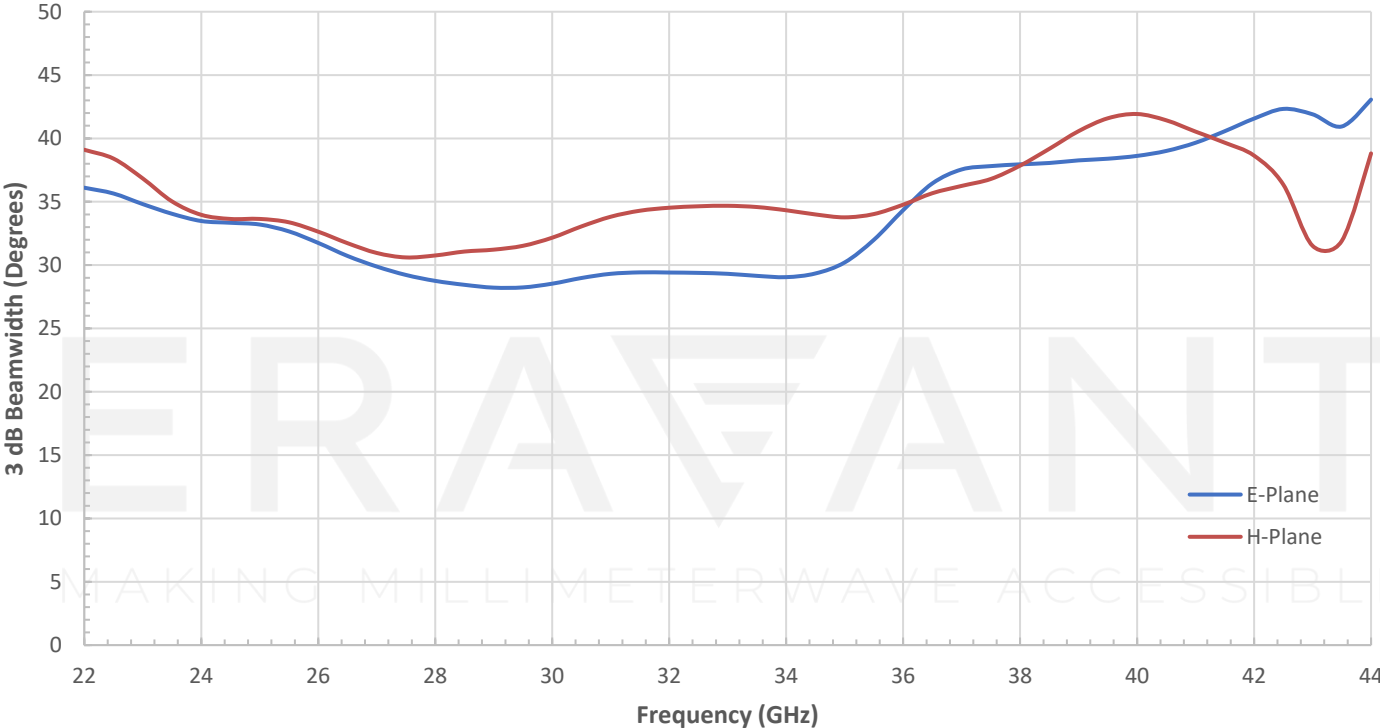
Simulated Antenna Patterns @ 44 GHz



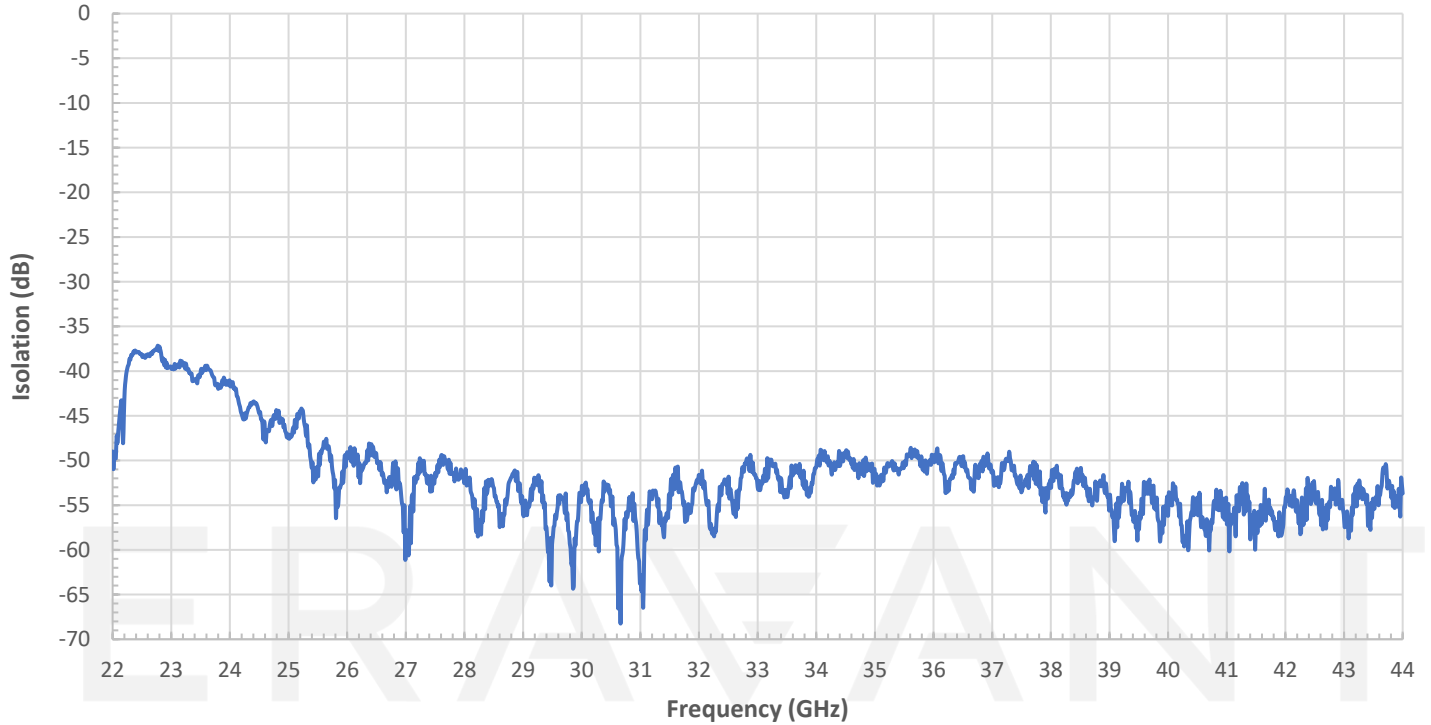
Simulated Gain vs Frequency



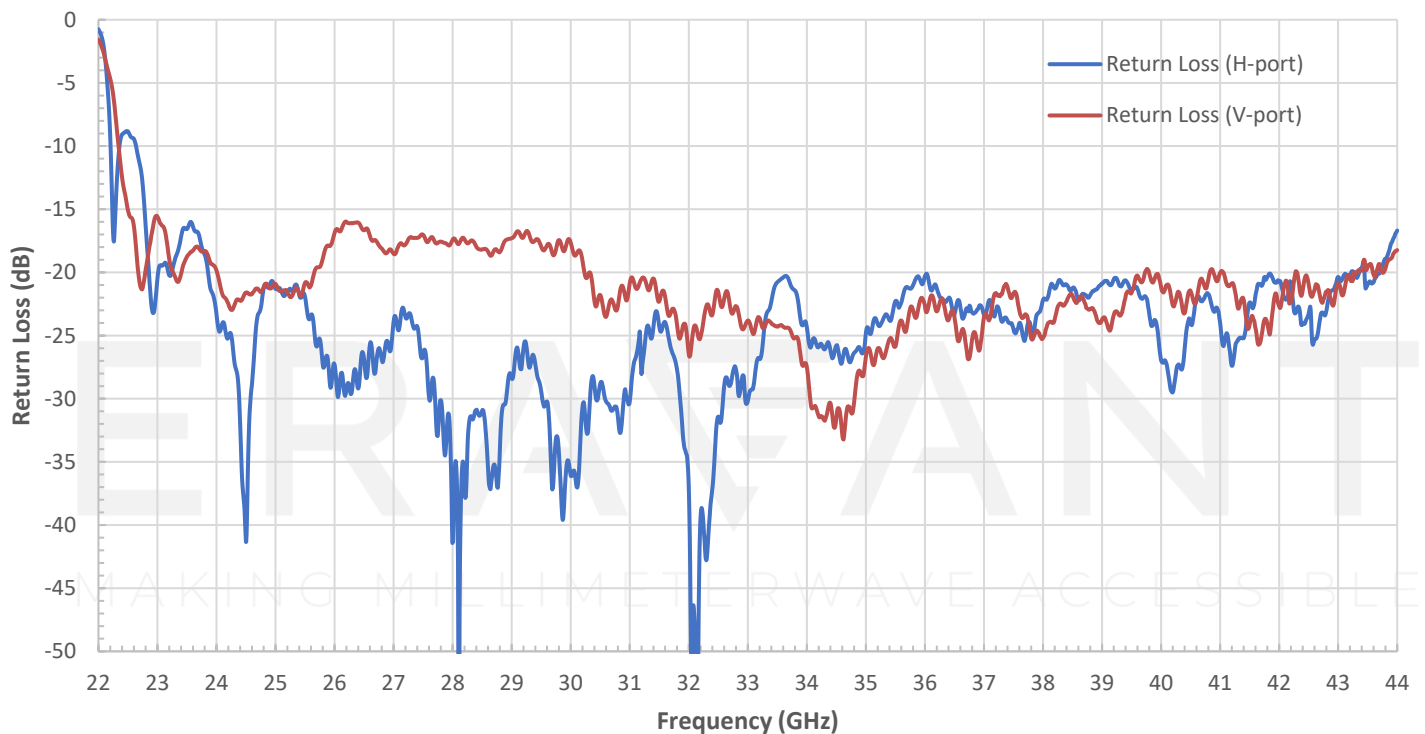
Simulated 3 dB Beamwidth vs Frequency



Typical Measured Isolation vs Frequency

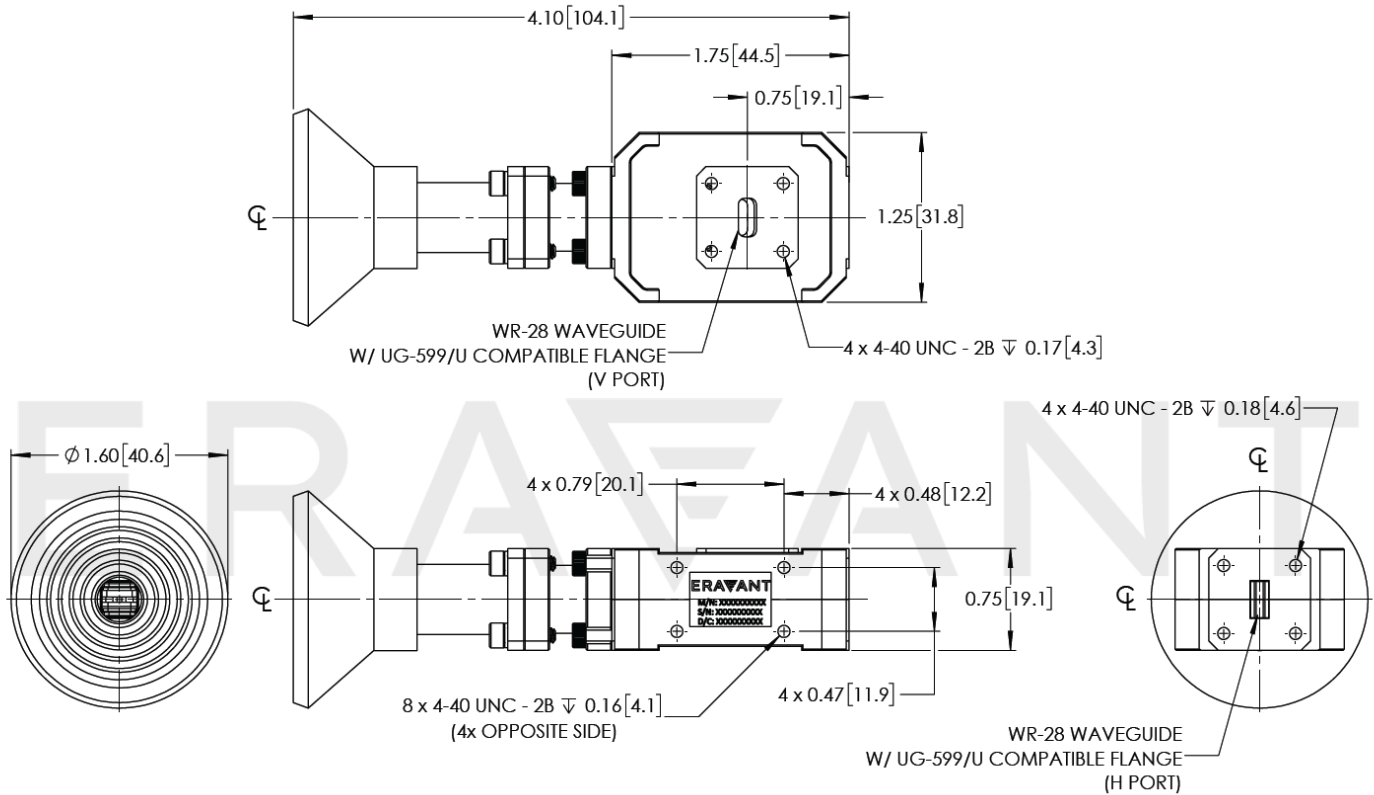


Typical Measured Return Loss vs Frequency



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



Note:

- Antenna Patterns, Gain and 3 dB Beamwidth are simulated. Actual data may vary.
- Port Return Loss and Isolation 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.
- For more information about OMT based dual-polarized antennas, an informative blog is available here: <https://www.eravant.com/dual-polarized-antennas-from-eravant>
- Eravant reserves the right to change the information presented without notice.

Caution:

- Any foreign objects in the antenna will cause performance degradation and possible device damage.

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