TECHNICAL SPECIFICATIONS

5G Horn Antenna

Quad Ridged Dual Polarization Low Gain
23 GHz - 45 GHz

Designed for Manufacturing

LITEPOINT

Overview

LitePoint's quad ridged dual polarization low gain horn antenna is designed to perform 5G mmWave Over-the-air (OTA) test and operates within frequencies ranging from 23 GHz - 45 GHz. The lightweight aluminum antenna is ideal for short far field distances (<5cm) and is scalable for different beamwidths and gain requirements.

The low gain horn is truly designed for manufacturing-oriented small OTA test chambers can be used with LitePoint's IQgig-5G to perform OTA RF measurements.

Technical Specifications

Specification	Value
Frequency Range	23 GHz - 45 GHz
Antenna Gain 23 GHz 45 GHz	 6.5 dBi (Typical) 11.5 dBi (Typical)
Polarization	Dual Polarization
3 dB Beamwidth 23 GHz, E Plane 23 GHz, H Plane 45 GHz, E Plane 45 GHz, H Plane	 56° (Typical) 58° (Typical) 30° (Typical) 40° (Typical)
Cross Polarization Isolation	20 dB
Port to Port Isolation	23 dB
VSWR 23 - 27.5 GHz 27.5 - 45 GHz	 2.6 (Typical 2.5) 2.2 (Typical 2.1)

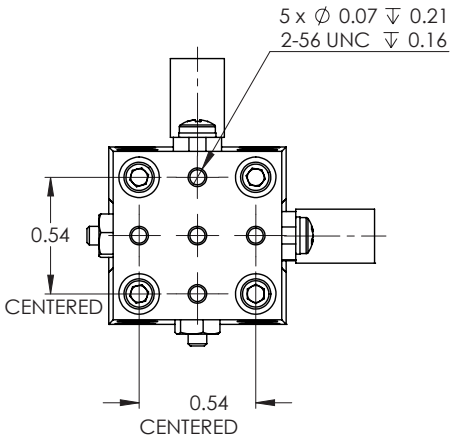
Electrical Specifications

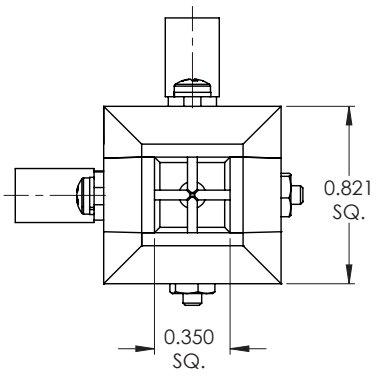
Specification	Value
Power Handling	10W
Specification Temperature	+25°C

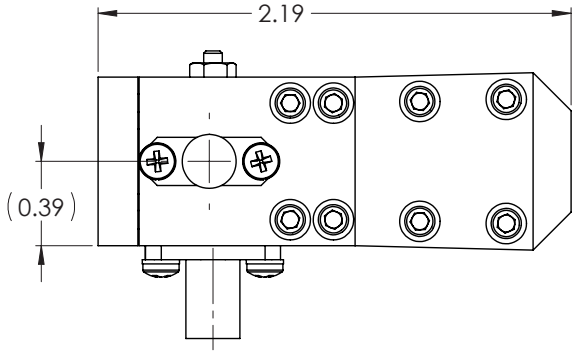
Mechanical Specifications

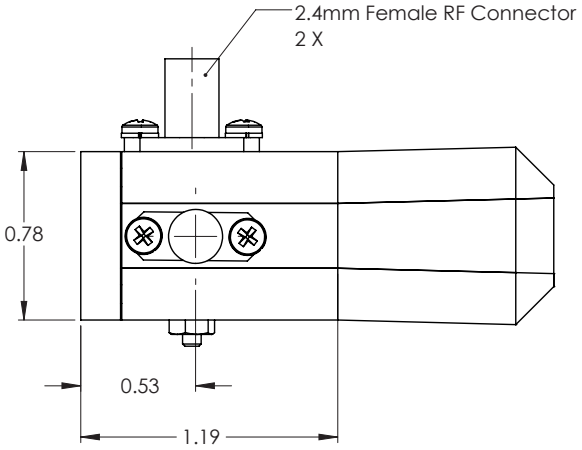
Specification	Value
Antenna Ports	2.4 mm Female
Material	Aluminum
Finish	Metal
Size	20.85 mm X 20.85 mm X 55.62 mm (0.82 in X 0.82 in X 2.19 in)
Net Weight	59.5 gm

Mechanical Drawings



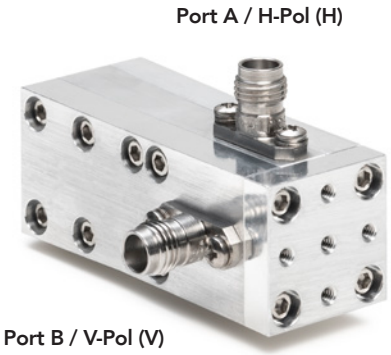






*Size = inch

Performance Characteristics



Note: The antenna ports are referred to as "Port A" and "Port B" in this data-sheet and as "H-Pol (H)" and "V-Pol (V)" respectively in the horn antenna calibration data file.

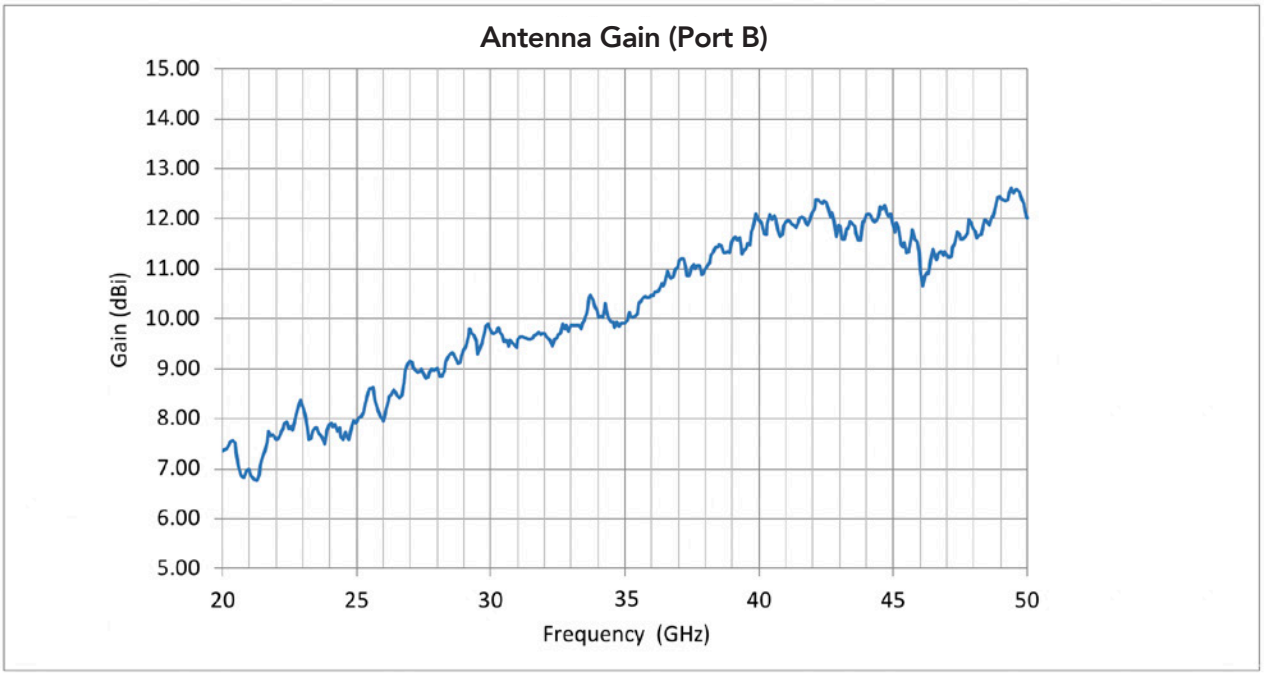


Figure 1: Antenna Gain, Port B

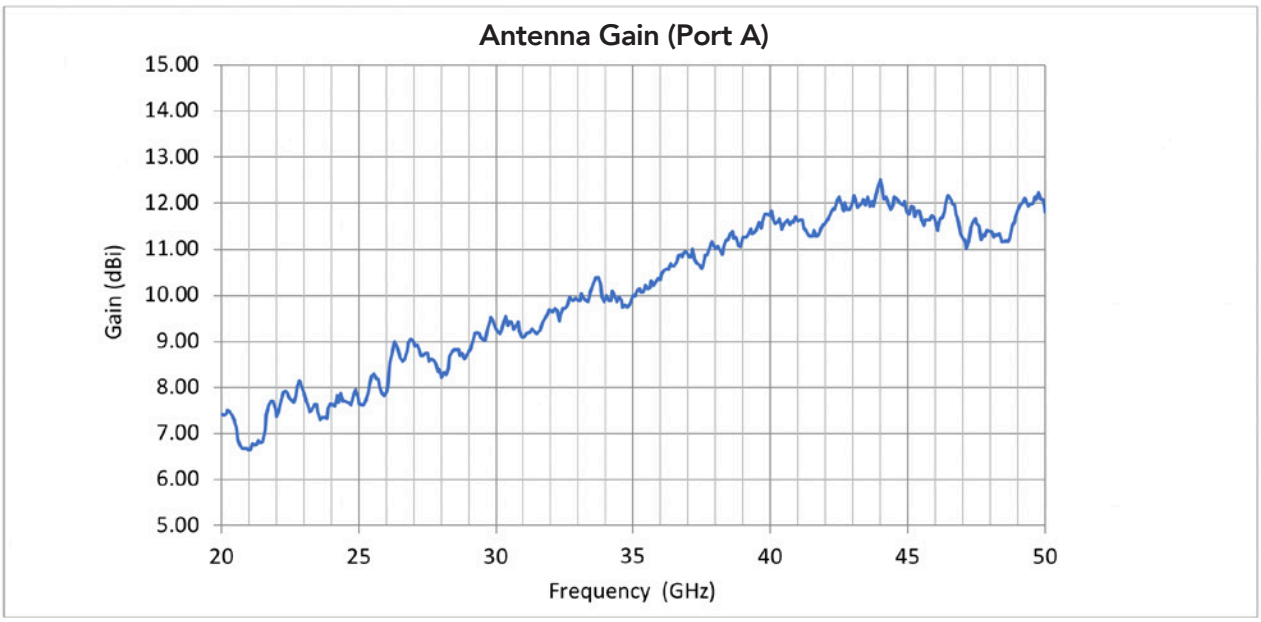


Figure 2: Antenna Gain, Port A

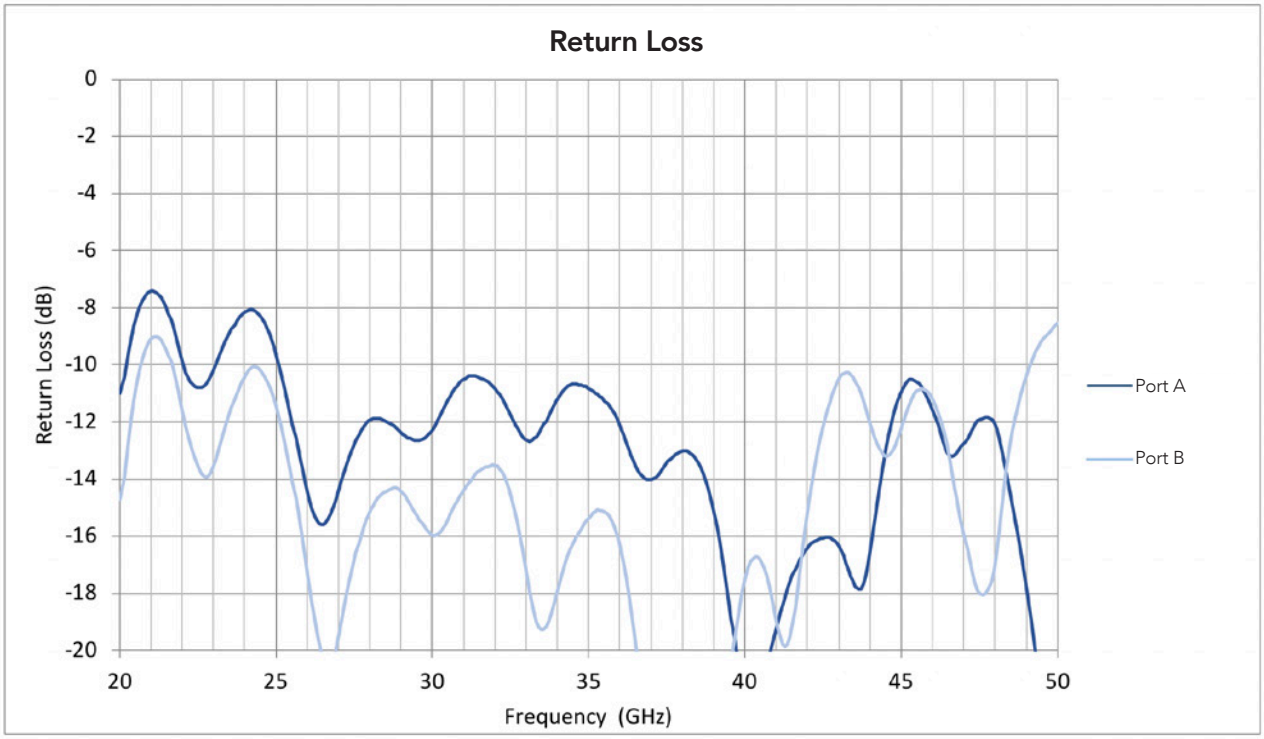


Figure 3: Return Loss

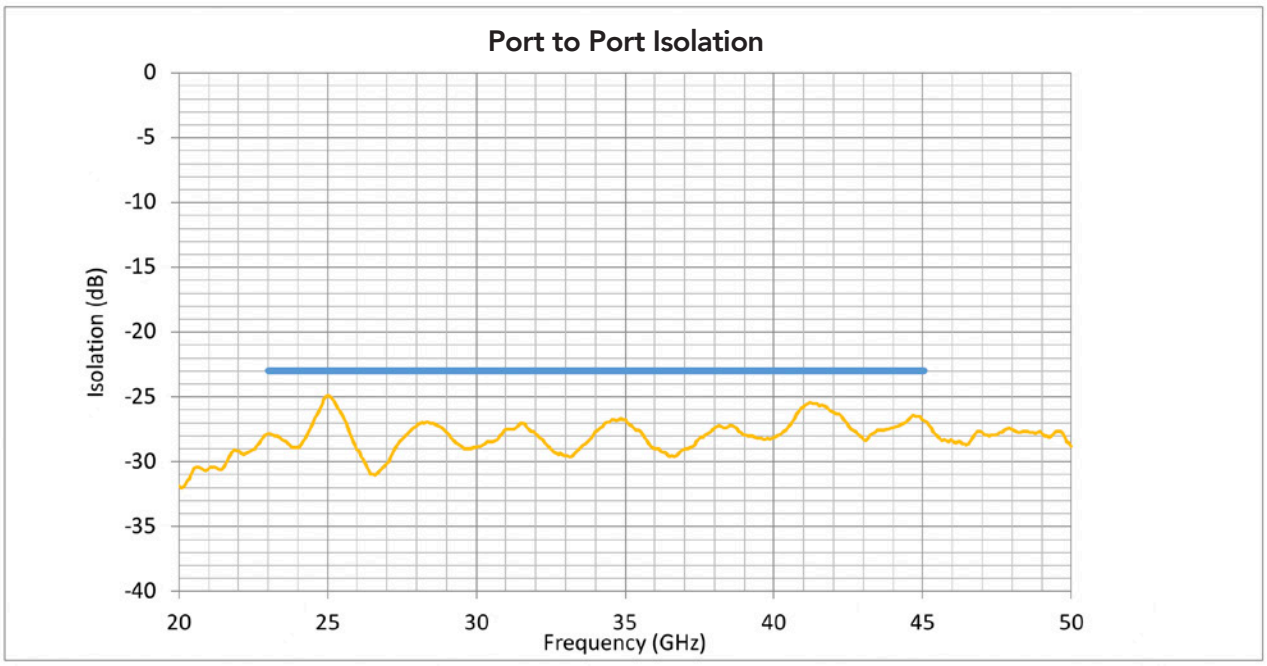


Figure 4: Port-to-Port Isolation

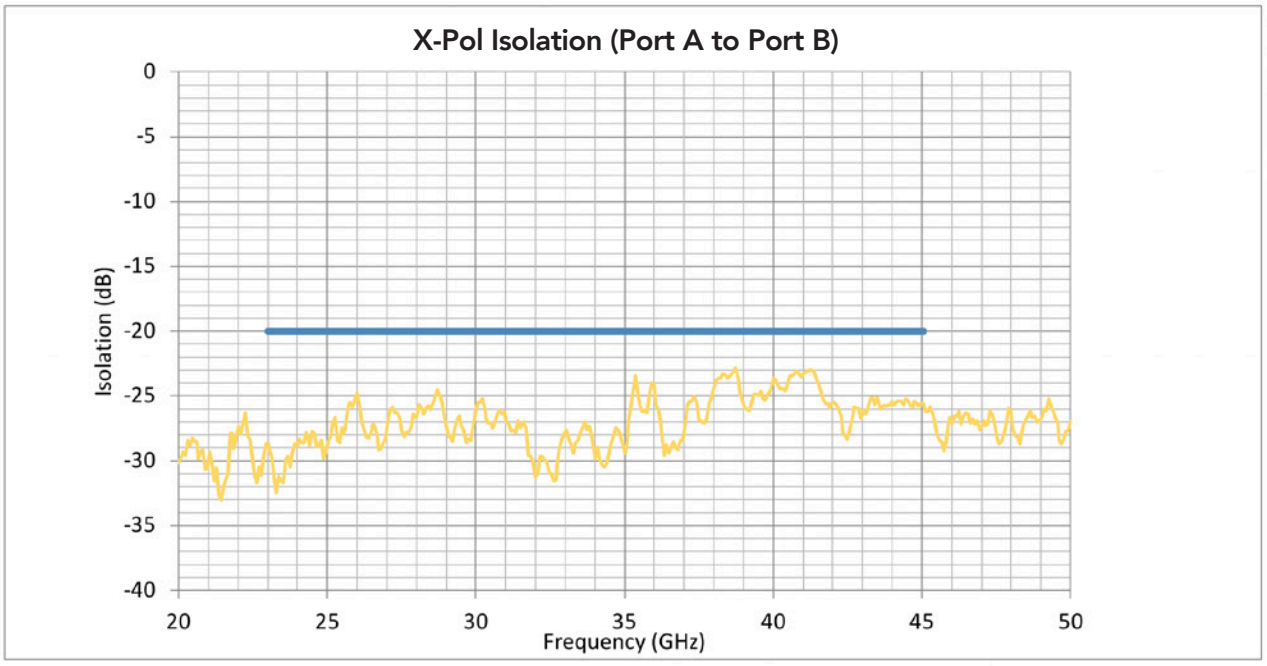


Figure 5: Cross Polarization Isolation Port A to Port B

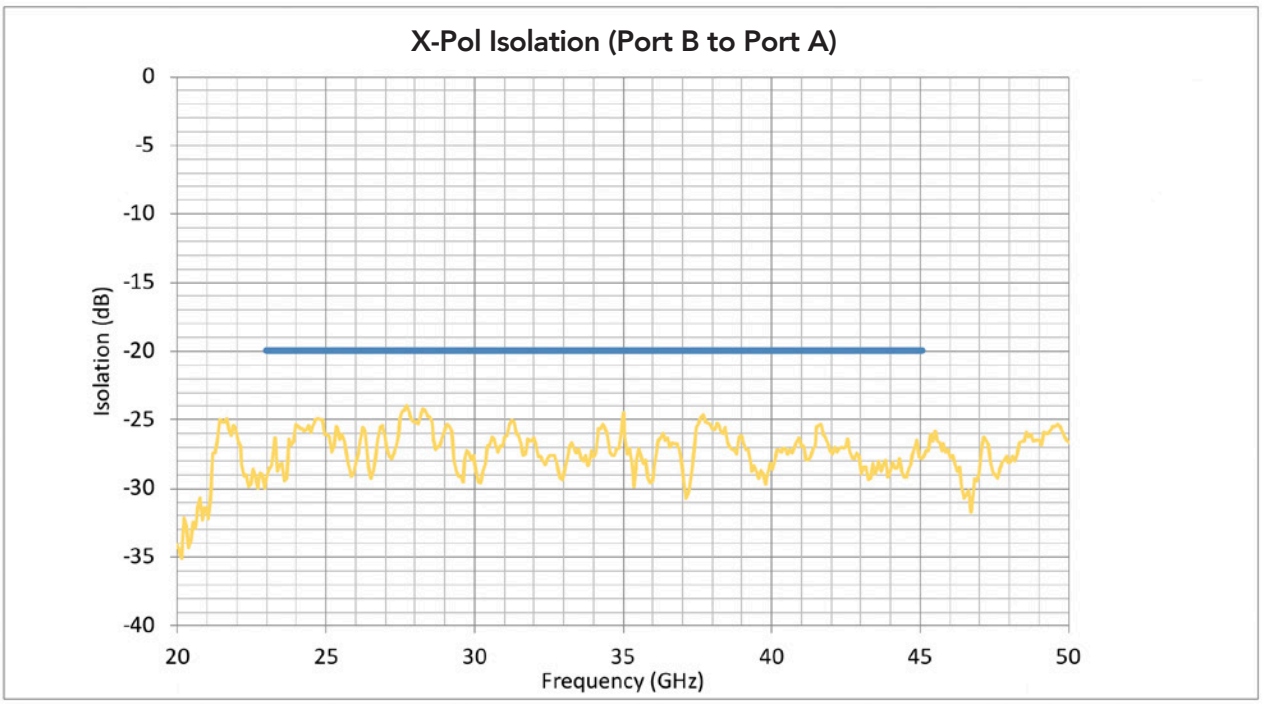
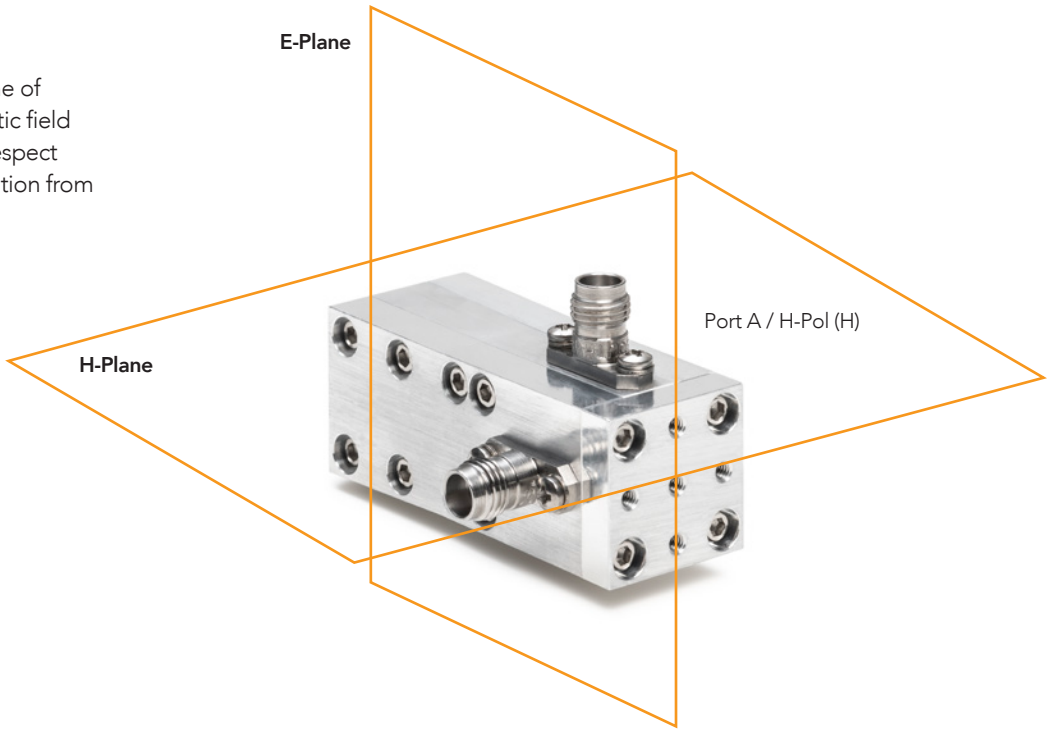


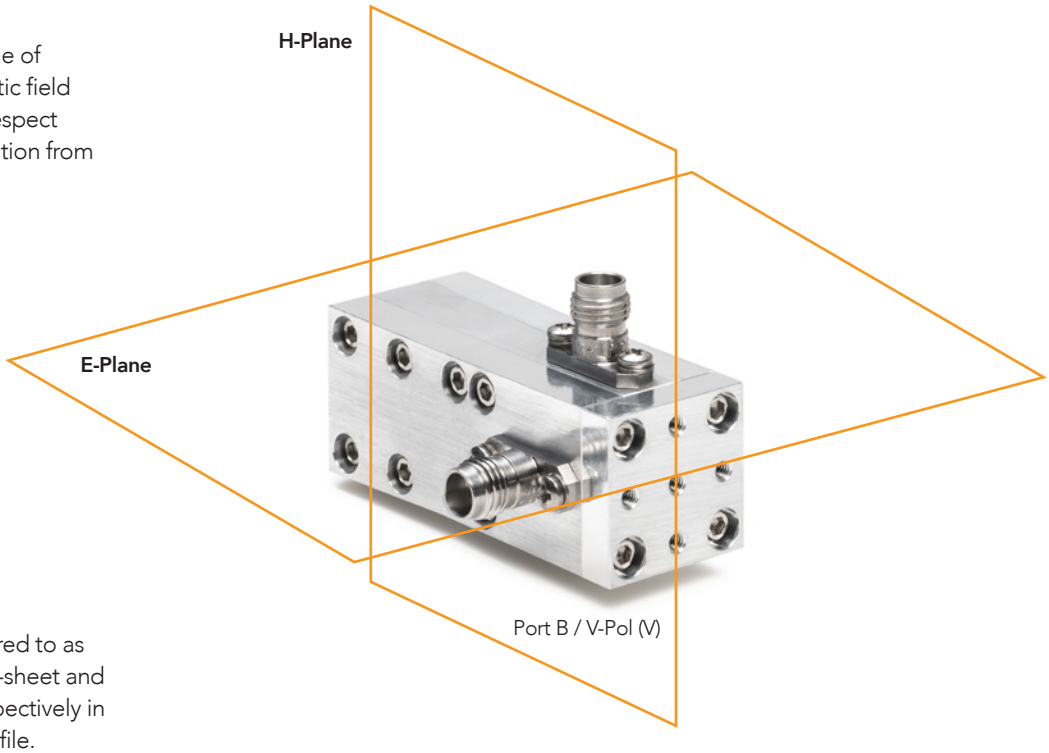
Figure 6: Cross Polarization Isolation Port B to Port A

Antenna Patterns

Illustrated to the right are the plane of electric field (E-plane) and magnetic field (H-plane) vectors observed with respect to the direction of maximum radiation from Port A.



Illustrated to the right are the plane of electric field (E-plane) and magnetic field (H-plane) vectors observed with respect to the direction of maximum radiation from Port B.



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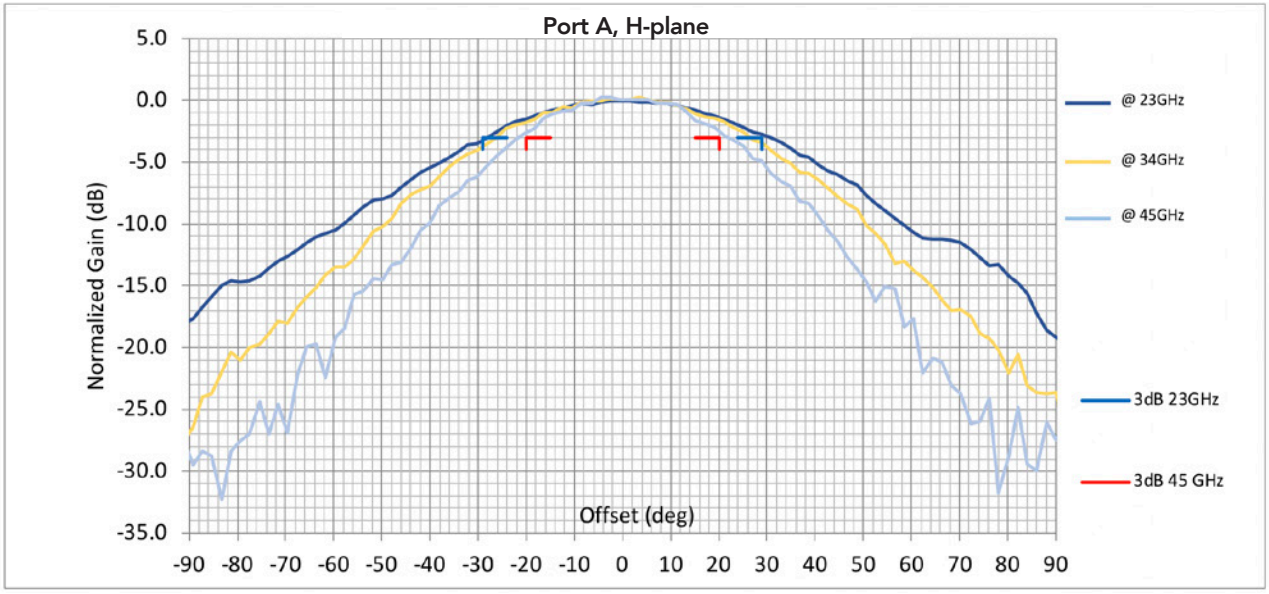


Figure 7: Typical antenna patterns at three different frequencies with Port A, H-plane

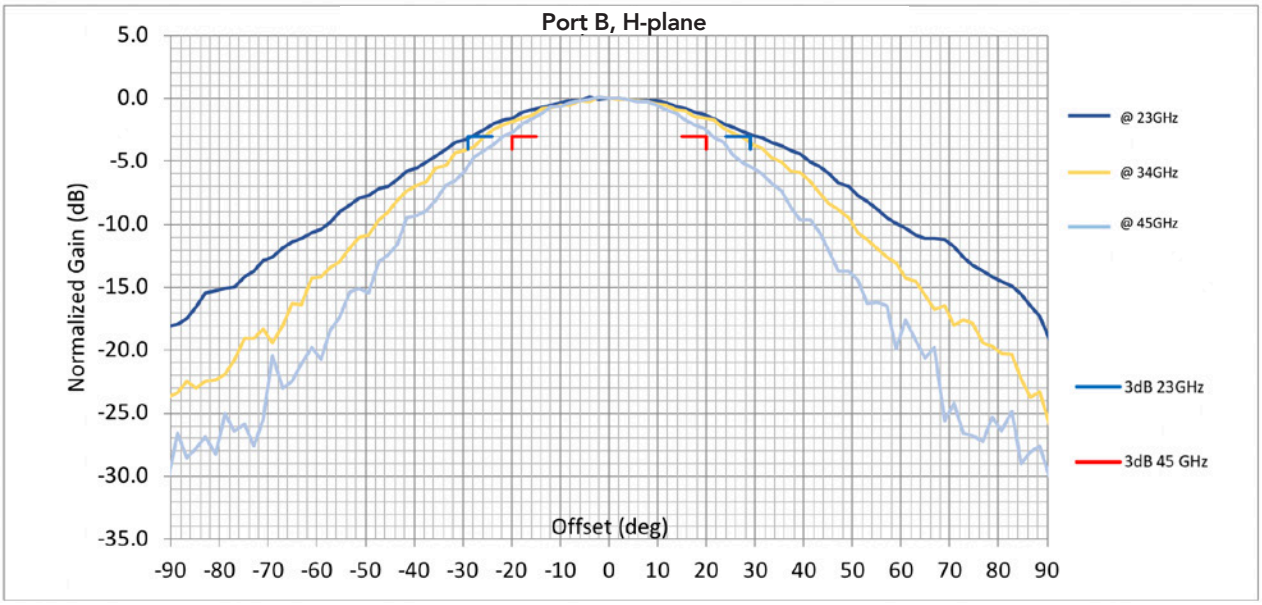


Figure 8: Typical antenna patterns at three different frequencies with Port B, H-plane

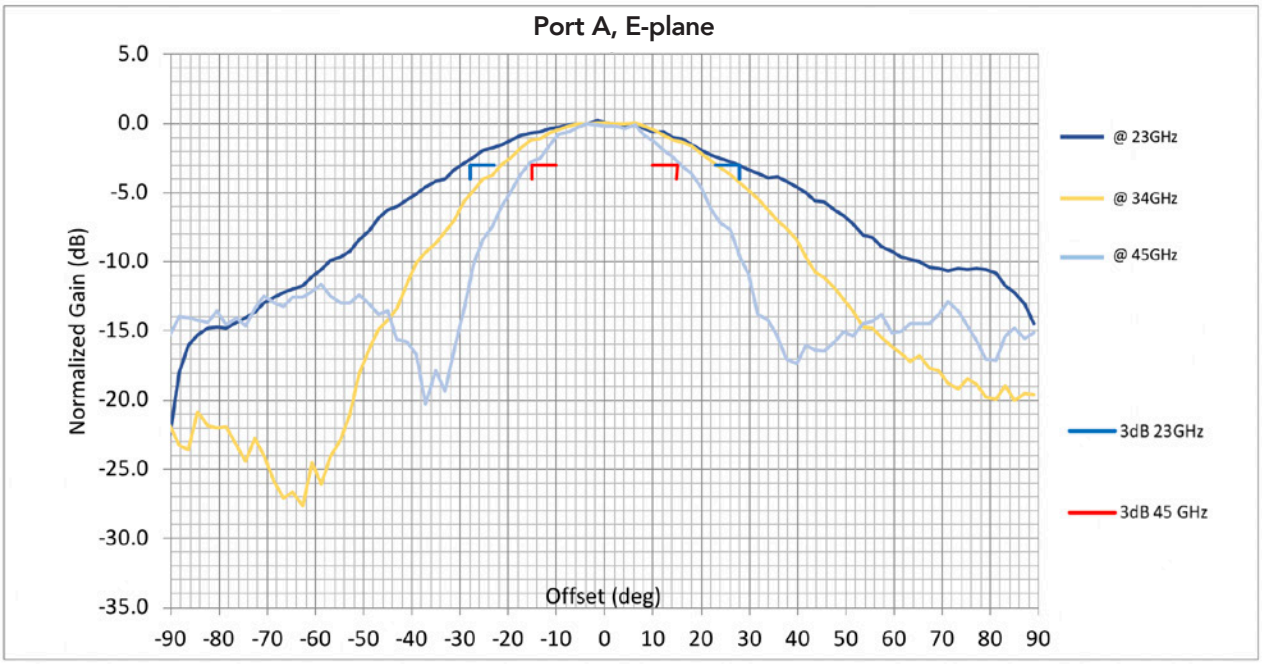


Figure 9: Typical antenna patterns at three different frequencies with Port A, E-plane

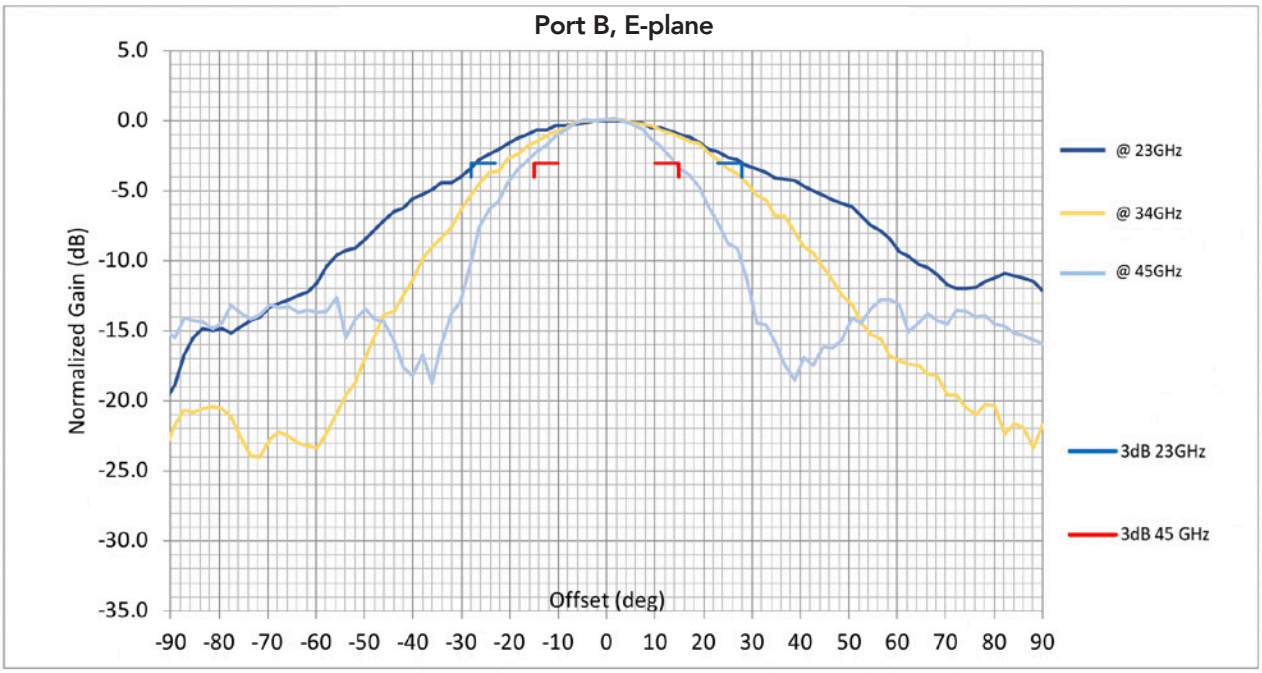
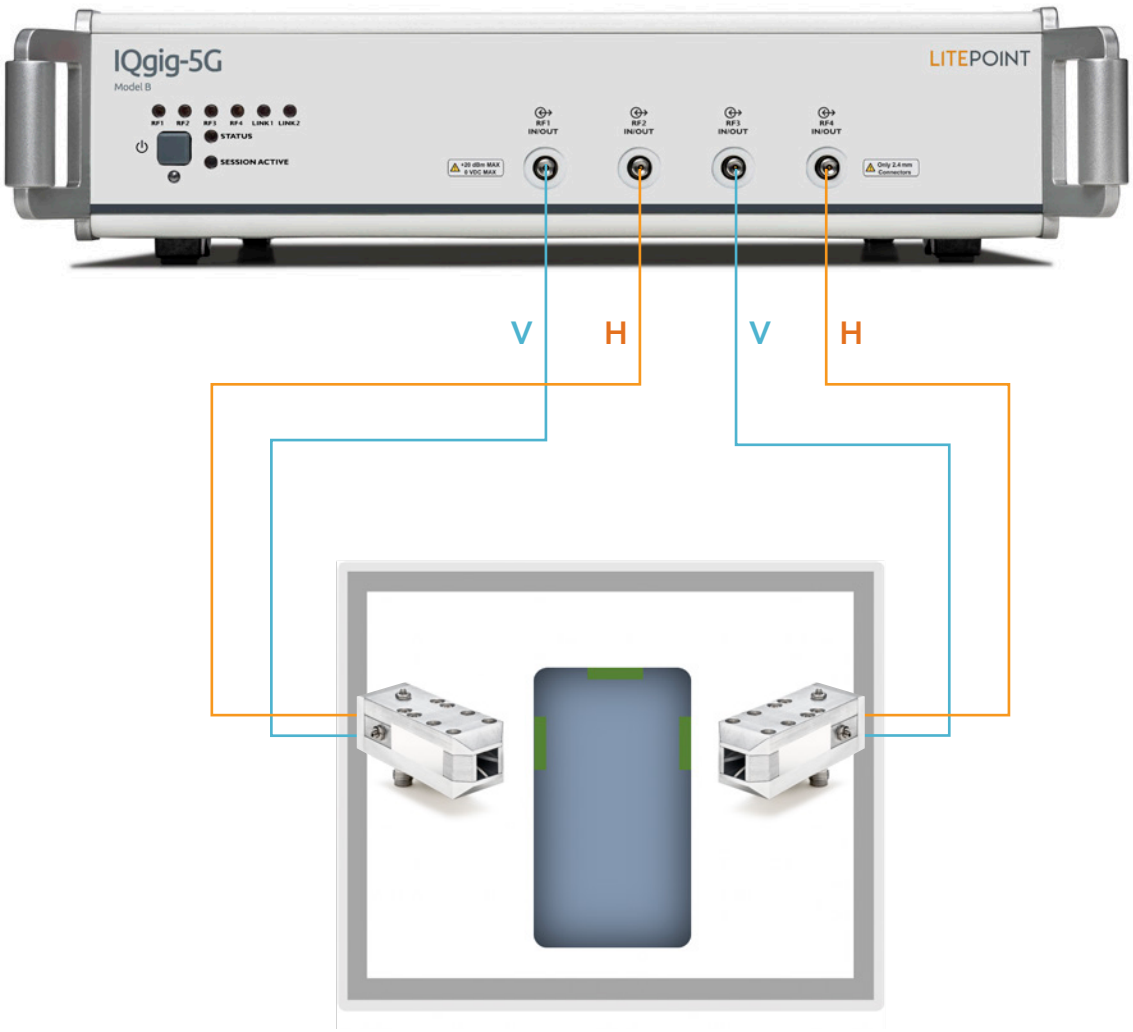


Figure 10: Typical antenna patterns at three different frequencies with Port B, E-plane

General Assembly

Final Product Testing

Shown below is a general positioning and assembly of 5G horn antennas within the OTA Chamber. To ensure accurate measurement each antenna is positioned in way that aligns with the antennas on the device under test. I/O ports outside of the OTA chamber allow LitePoints IQgig-5G to feed and receive signals on each of the antenna ports.



Code	Product
0150-IG5G-022	5G Horn Antenna - Low gain

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