TECHNICAL SPECIFICATIONS

5G Horn Antenna

Quad Ridged Dual Polarization High Gain

23 GHz – 55 GHz

LITEPOINT

Overview

LitePoint's quad ridged dual polarization high gain horn antenna is truly designed to perform Over-the-air (OTA) test at 5G mmWave frequencies. The antenna supports entire 23 GHz - 55 GHz frequency range covering operation over 3GPP defined bands n257 (28GHz), n258 (26GHz), n259 (42GHz), n260 (39GHz), n261 (28GHz) & n262 (47GHz).

Designed to deliver typical gain of 13-17 dBi, the antenna is ideal for design validation and antenna pattern measurements in an OTA chamber and can be used with LitePoint's IQgig-5G to perform RF measurements.

Technical Specifications

Specification	Value
Frequency Range	23 GHz - 55 GHz
Antenna Gain 23 GHz 55 GHz	 13.5 dBi (Typical) 17.5 dBi (Typical)
Polarization	Dual Polarization
3 dB Beamwidth 23 GHz, E Plane 23 GHz, H Plane 55 GHz, E Plane 55 GHz, H Plane	 29° (Typical) 37° (Typical) 16.5° (Typical) 19° (Typical)
Cross Polarization Isolation	22 dB
Port to Port Isolation	25 dB
VSWR 23 - 27.5 GHz 27.5 - 55 GHz	 2.2 (Typical) 1.9 (Typical)

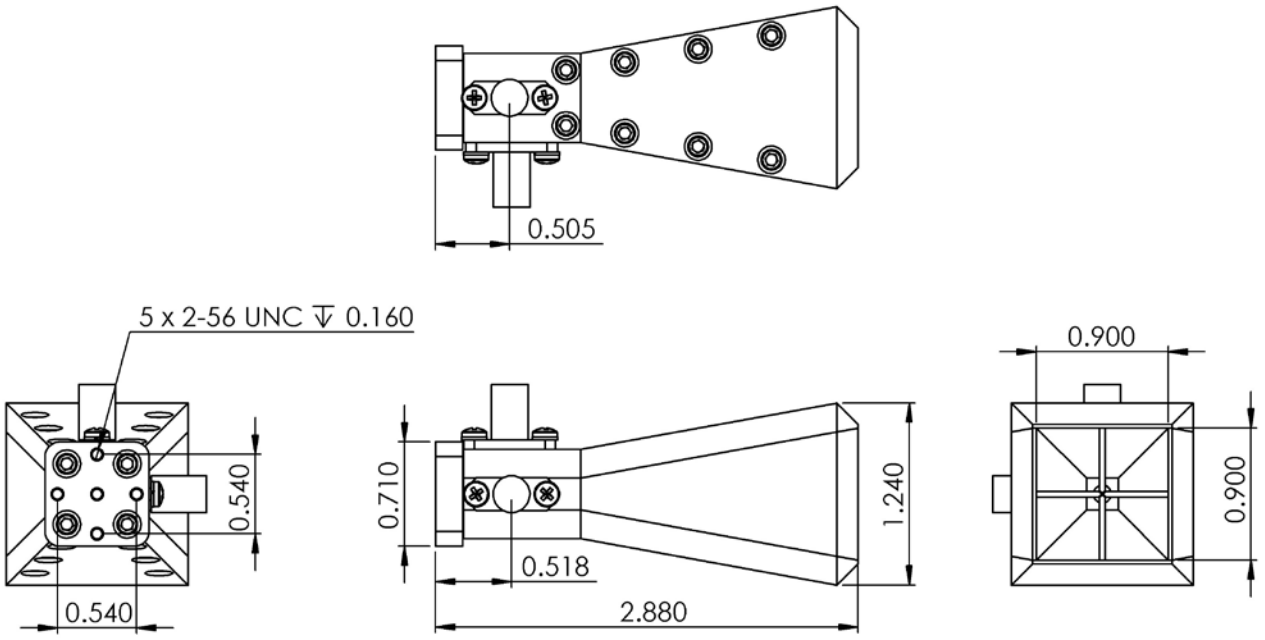
Electrical Specifications

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

Mechanical Specifications

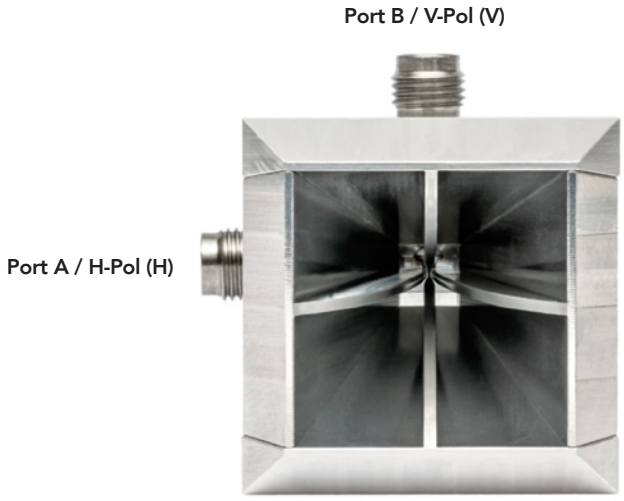
Specification	Value
Antenna Ports	1.85 mm Female
Material	Aluminum
Finish	Metal
Size	73.15 mm (L) x 31.5 mm (W) x 31.5 mm (H)
Net Weight	70 gm

Mechanical Drawings



*Size = inch

Performance Characteristics



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

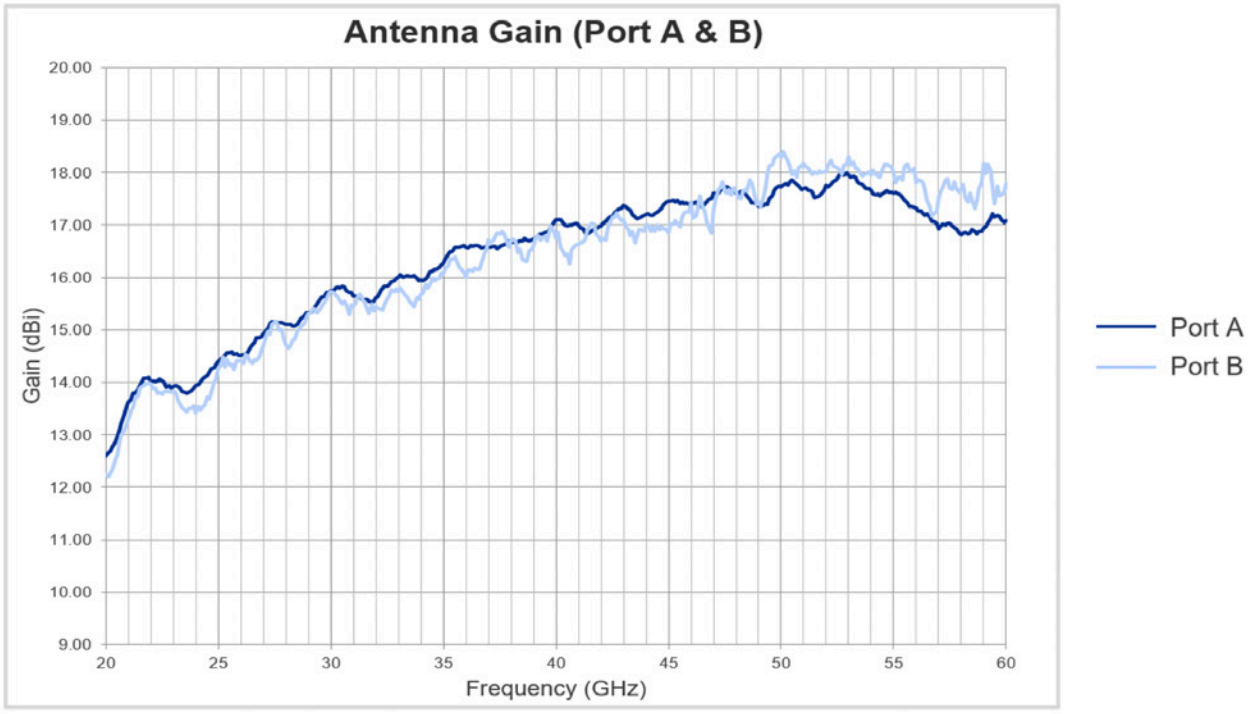


Figure 1: Antenna Gain, Port A & Port B

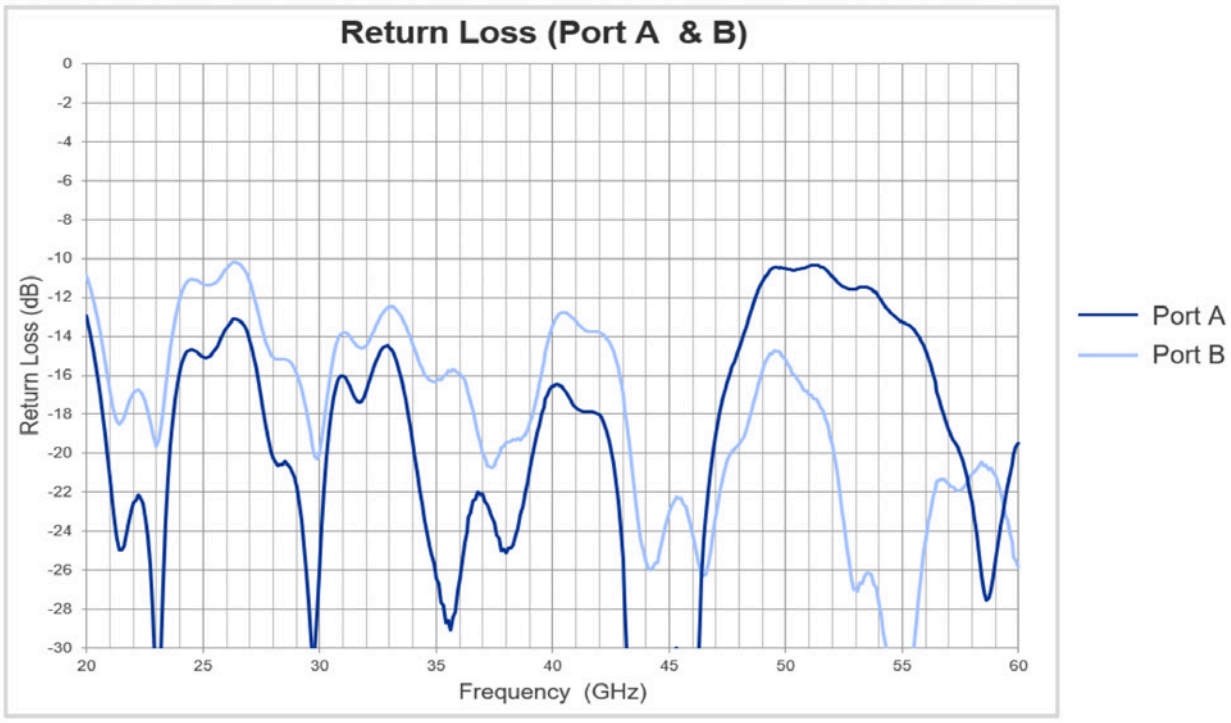


Figure 2: Return Loss

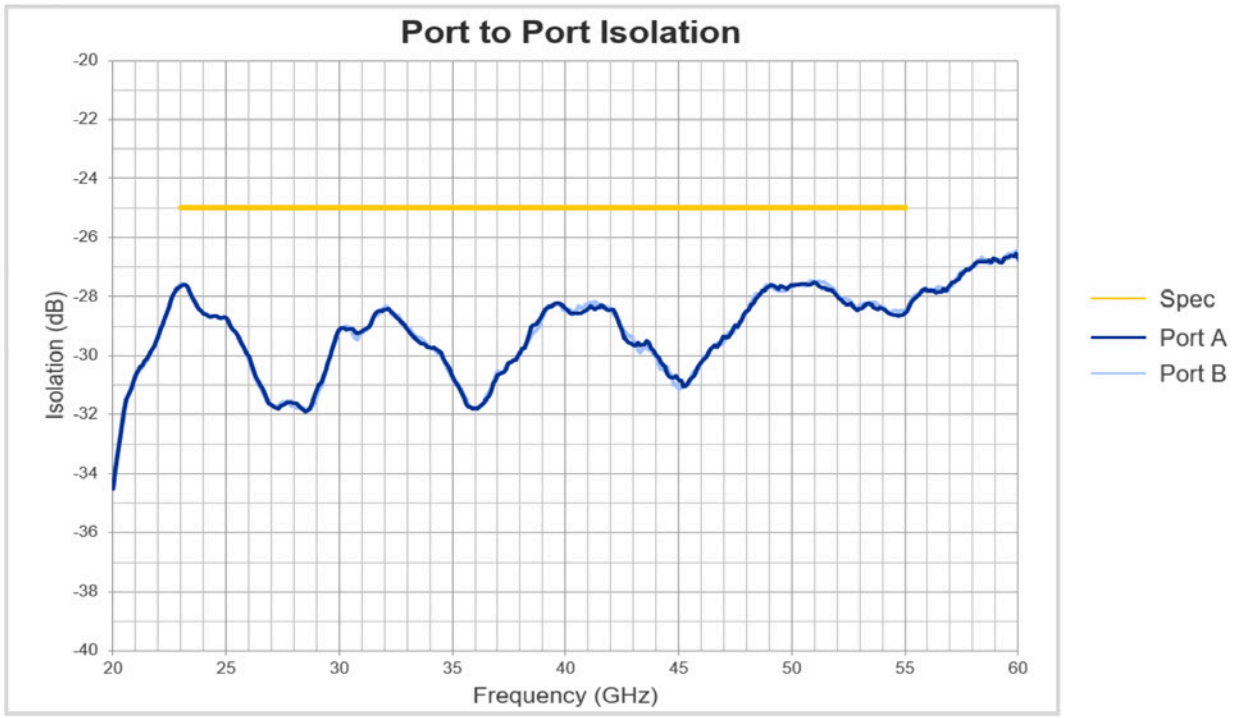


Figure 3: Port-to-Port Isolation

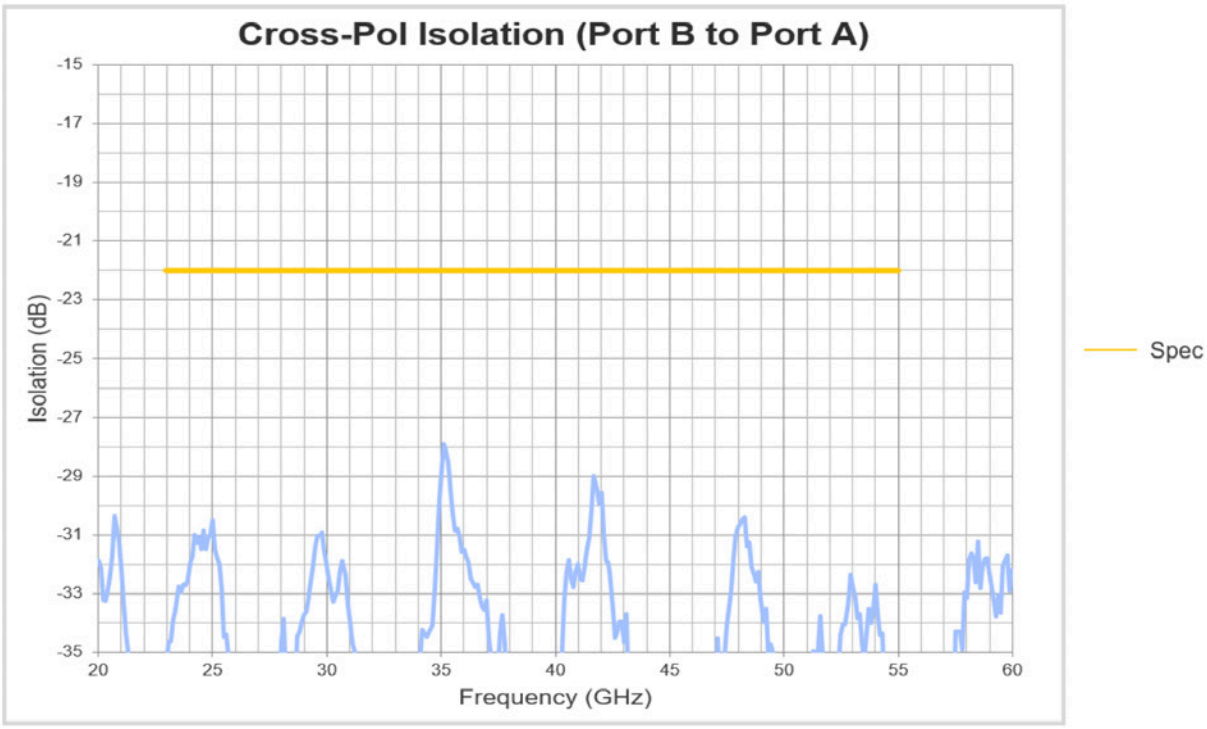


Figure 4: Cross Polarization Isolation Port B to Port A

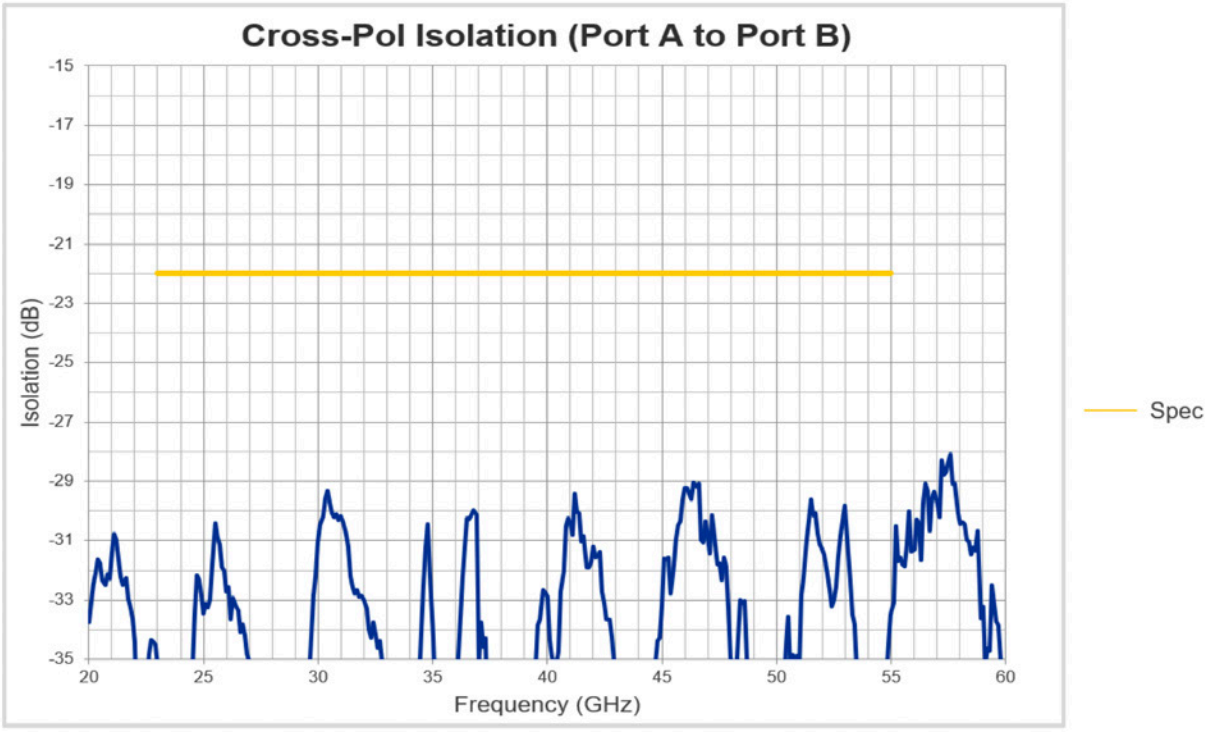
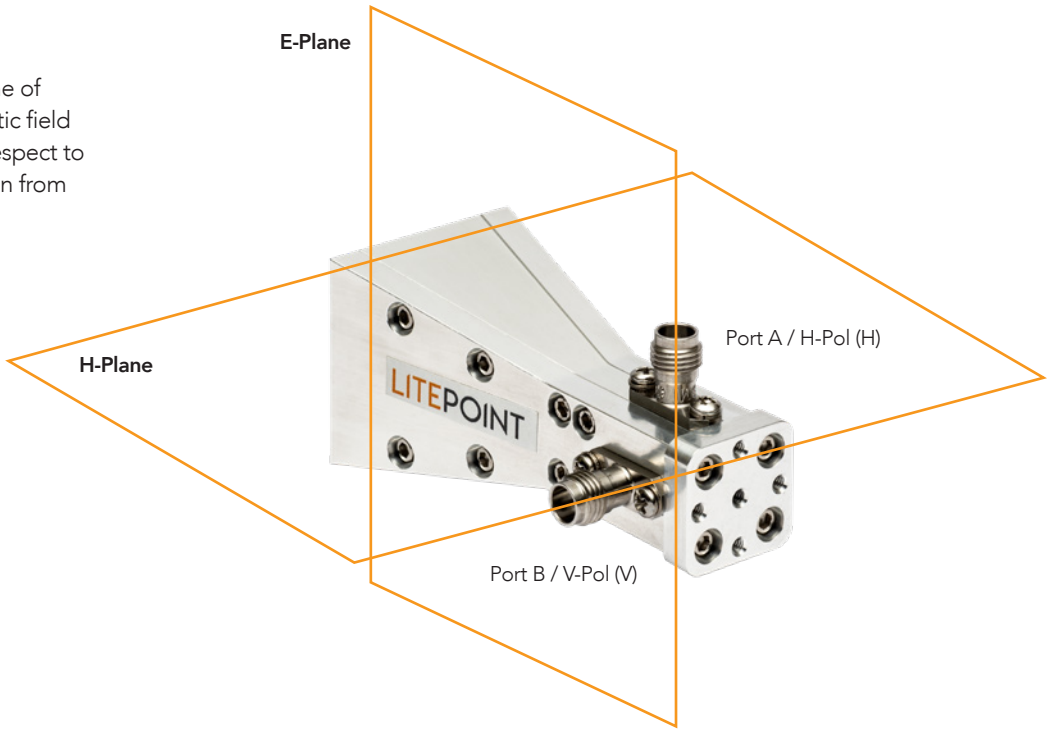


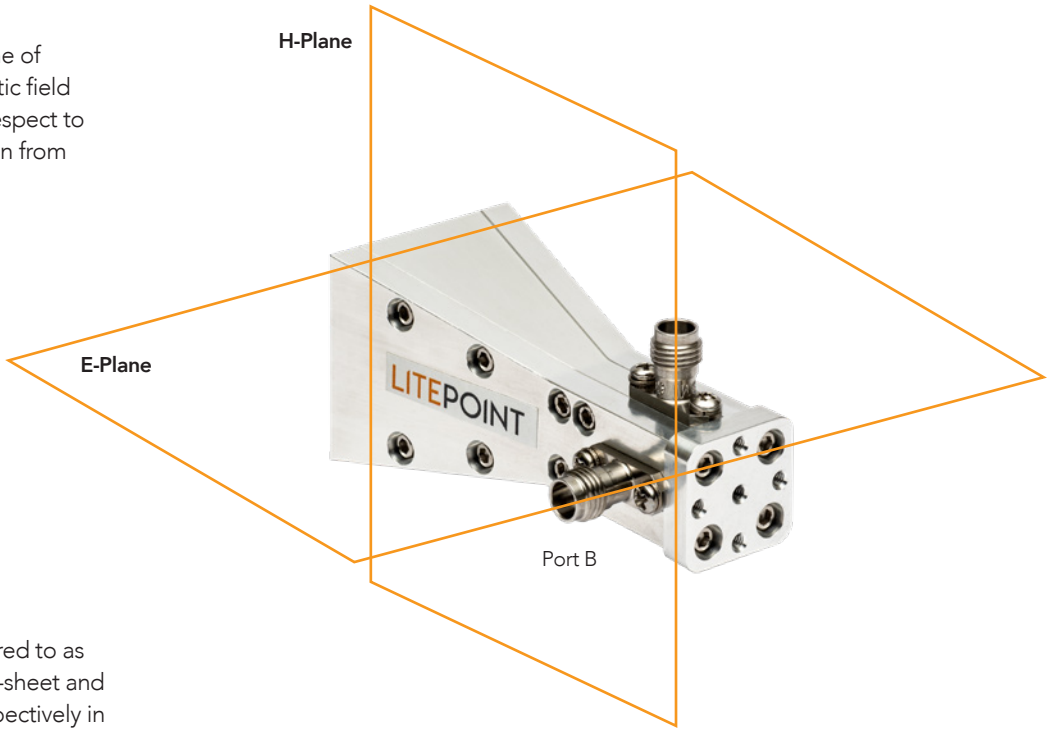
Figure 5: Cross Polarization Isolation Port B to Port A

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.



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.

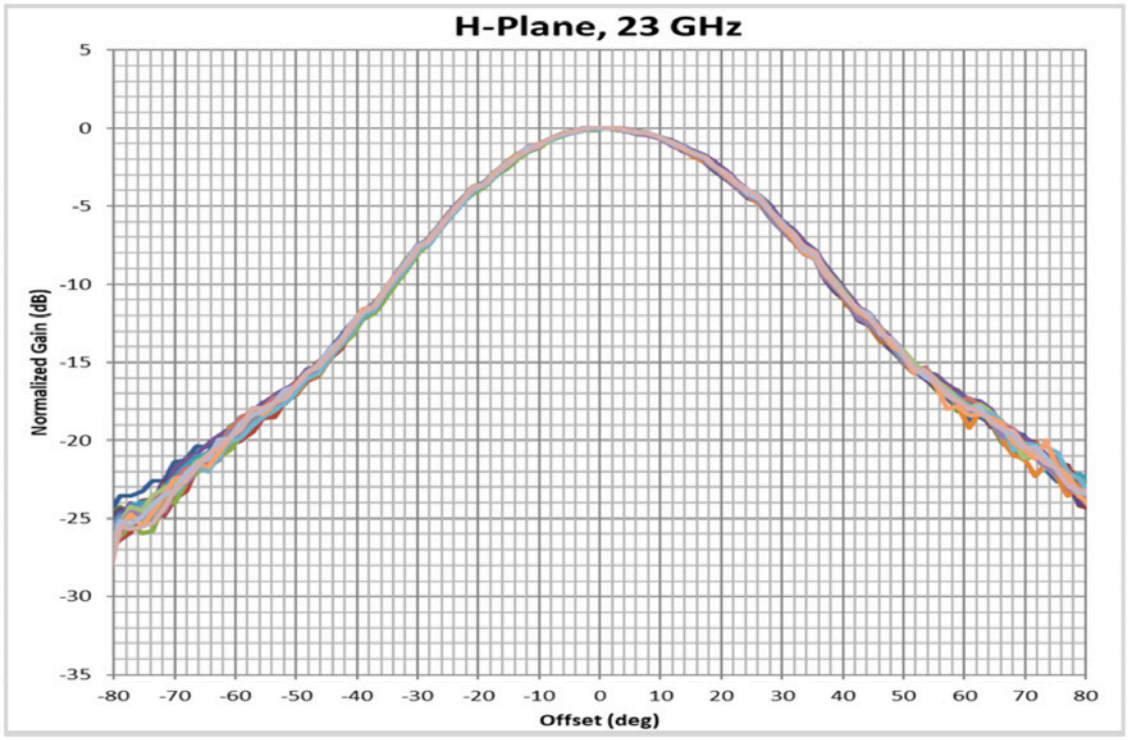


Figure 6: Typical antenna patterns at 23GHz with Port A or Port B, H-plane (data collected over multiple samples)

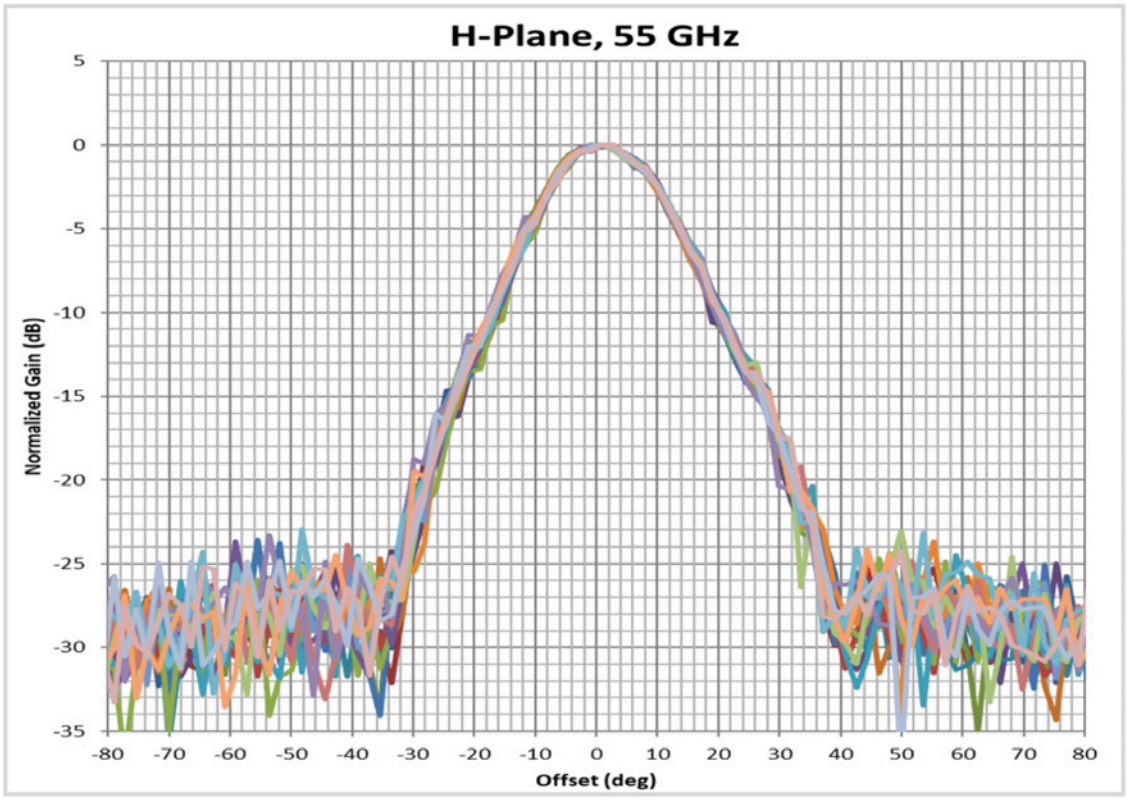


Figure 7: Typical antenna patterns at 55GHz with Port A or Port B, H-plane (data collected over multiple samples)

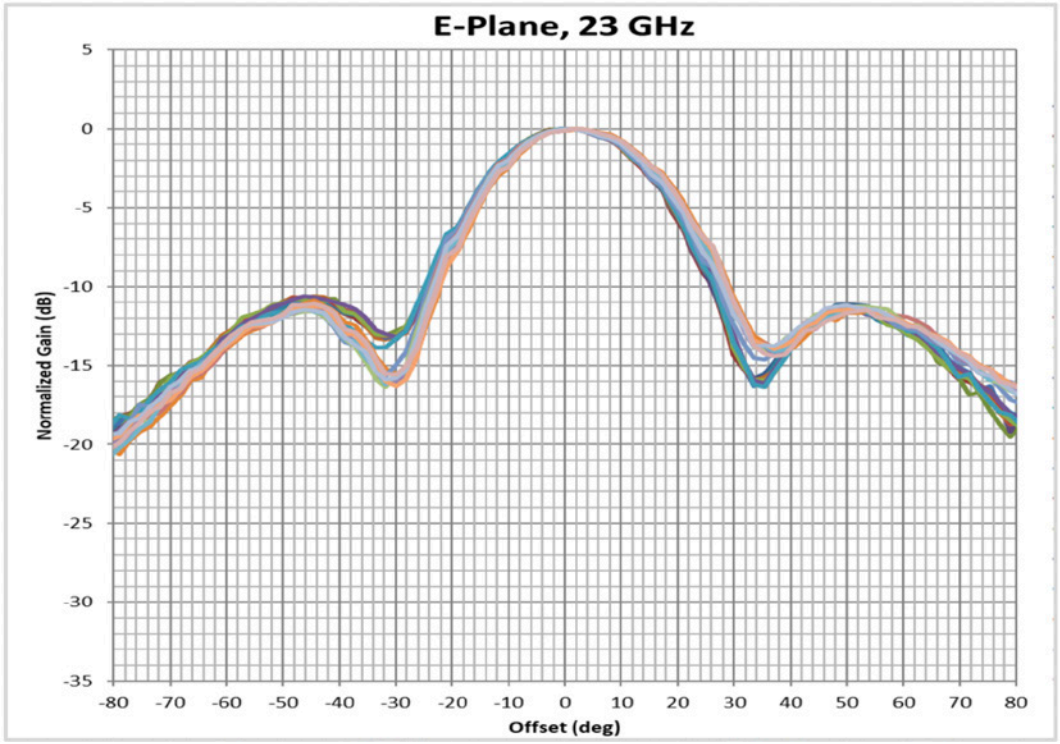


Figure 8: Typical antenna patterns at 23GHz with Port A or Port B, E-plane (data collected over multiple samples)

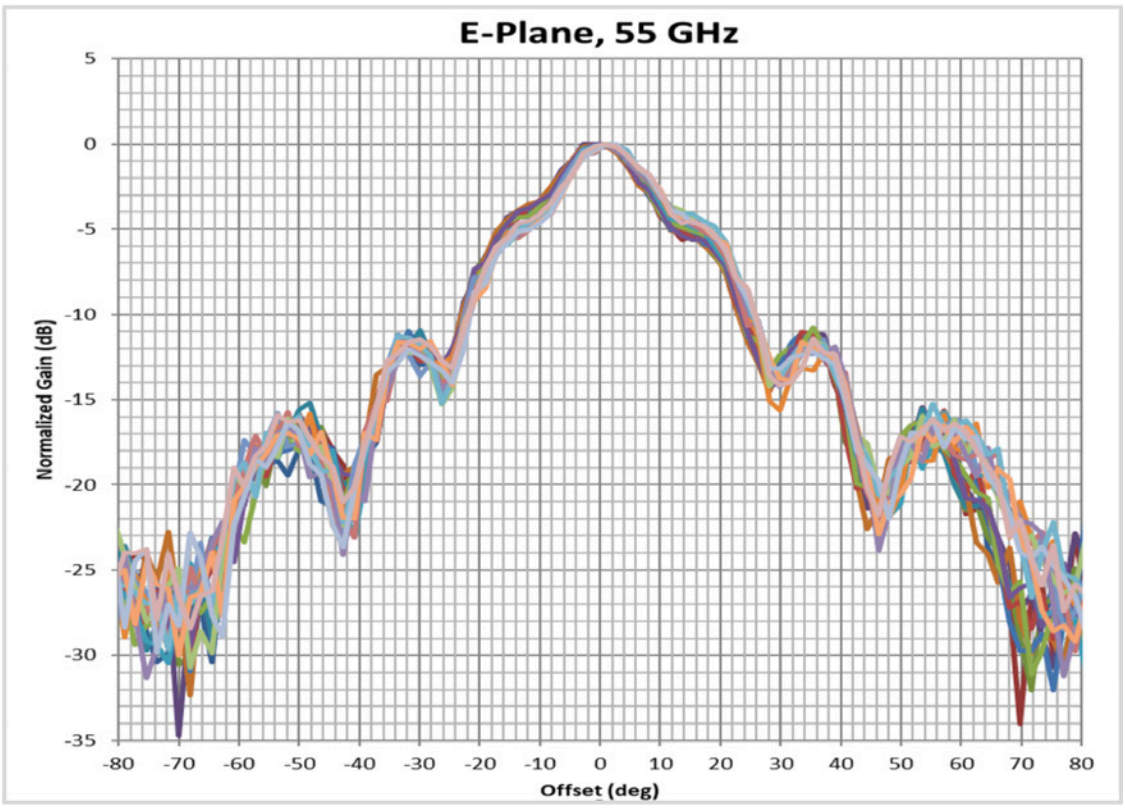


Figure 9: Typical antenna patterns at 55GHz with Port A or Port B, E-plane (data collected over multiple samples)

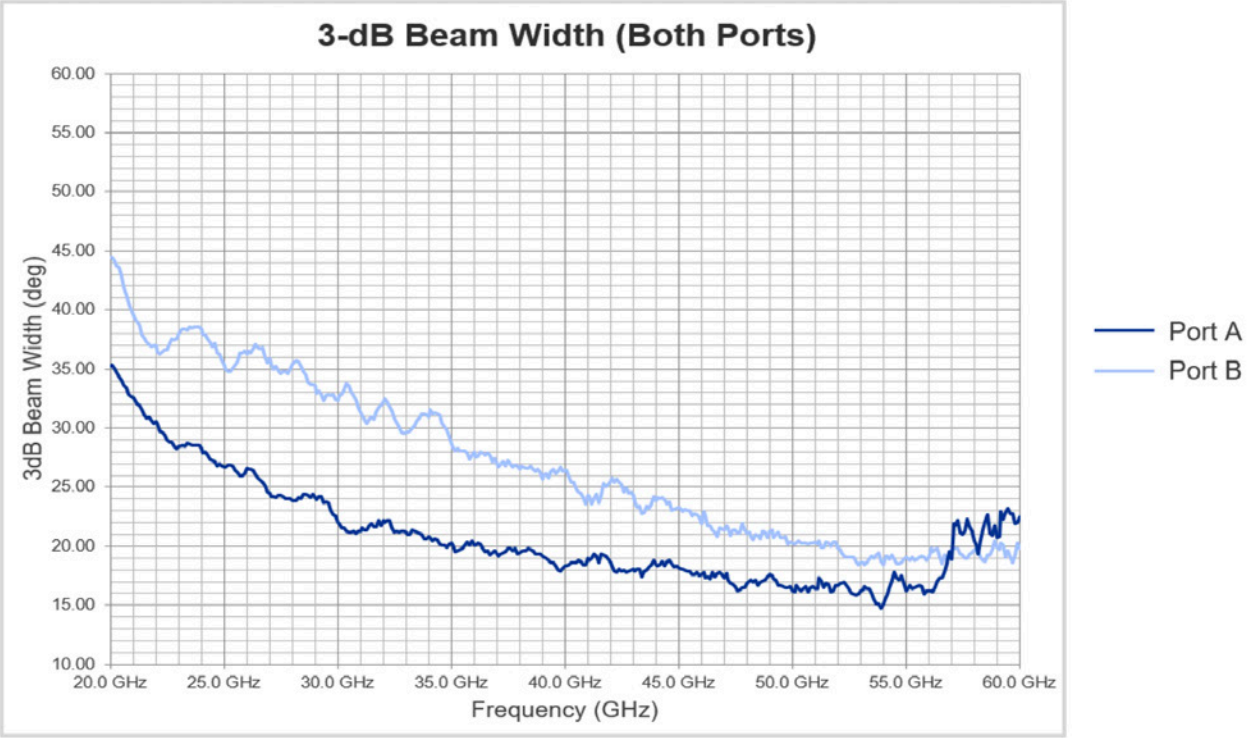
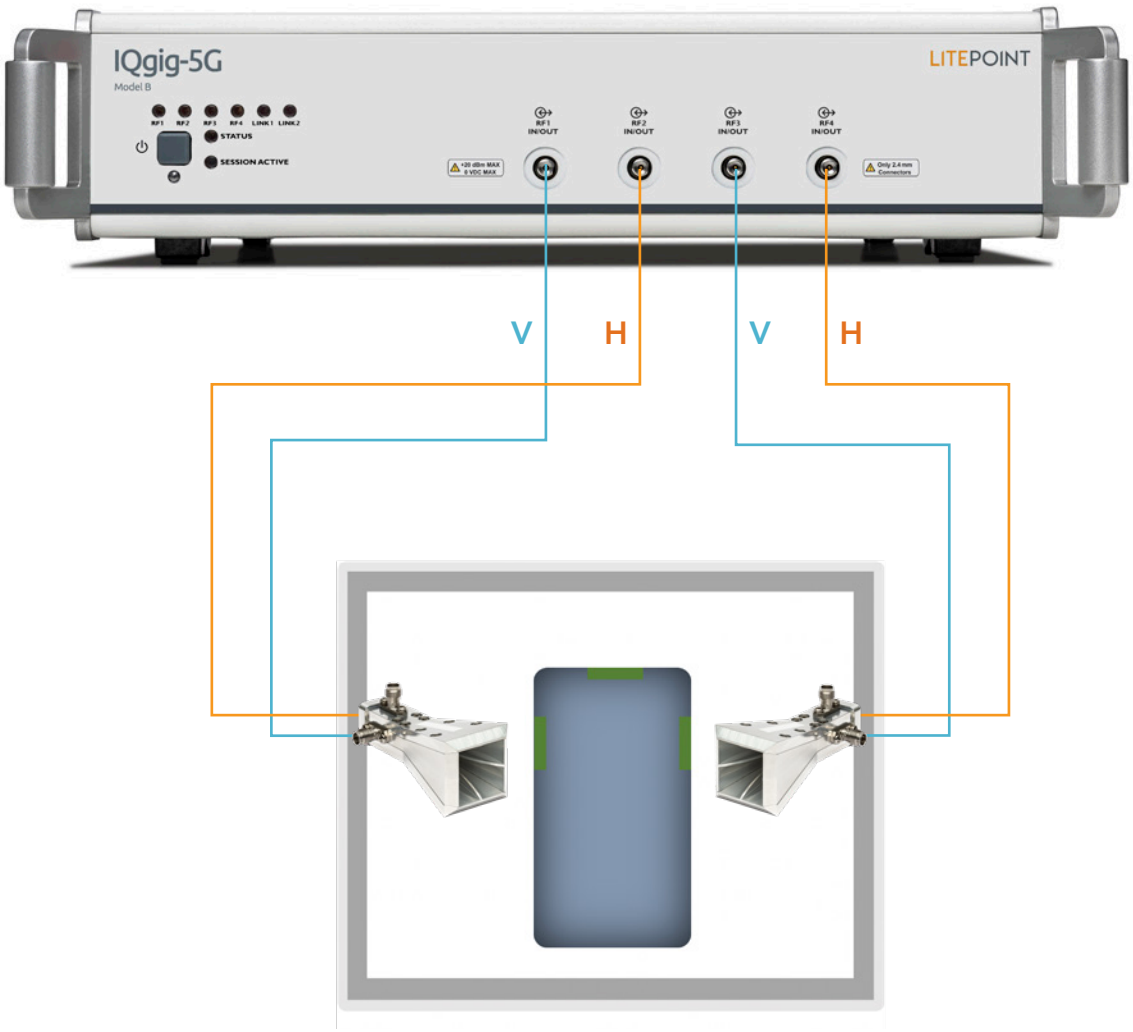


Figure 10: 3dB Beamwidth across Port A & Port B

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 LitePoint's IQgig-5G to feed and receive signals on each of the antenna ports.



Order Codes

Specification	Value
0150-IG5G-020	5G High Gain Horn Antenna 55 GHz

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