

## 5GHz 8x8 Sector Antenna of ePMP 4500 Access Point Radio

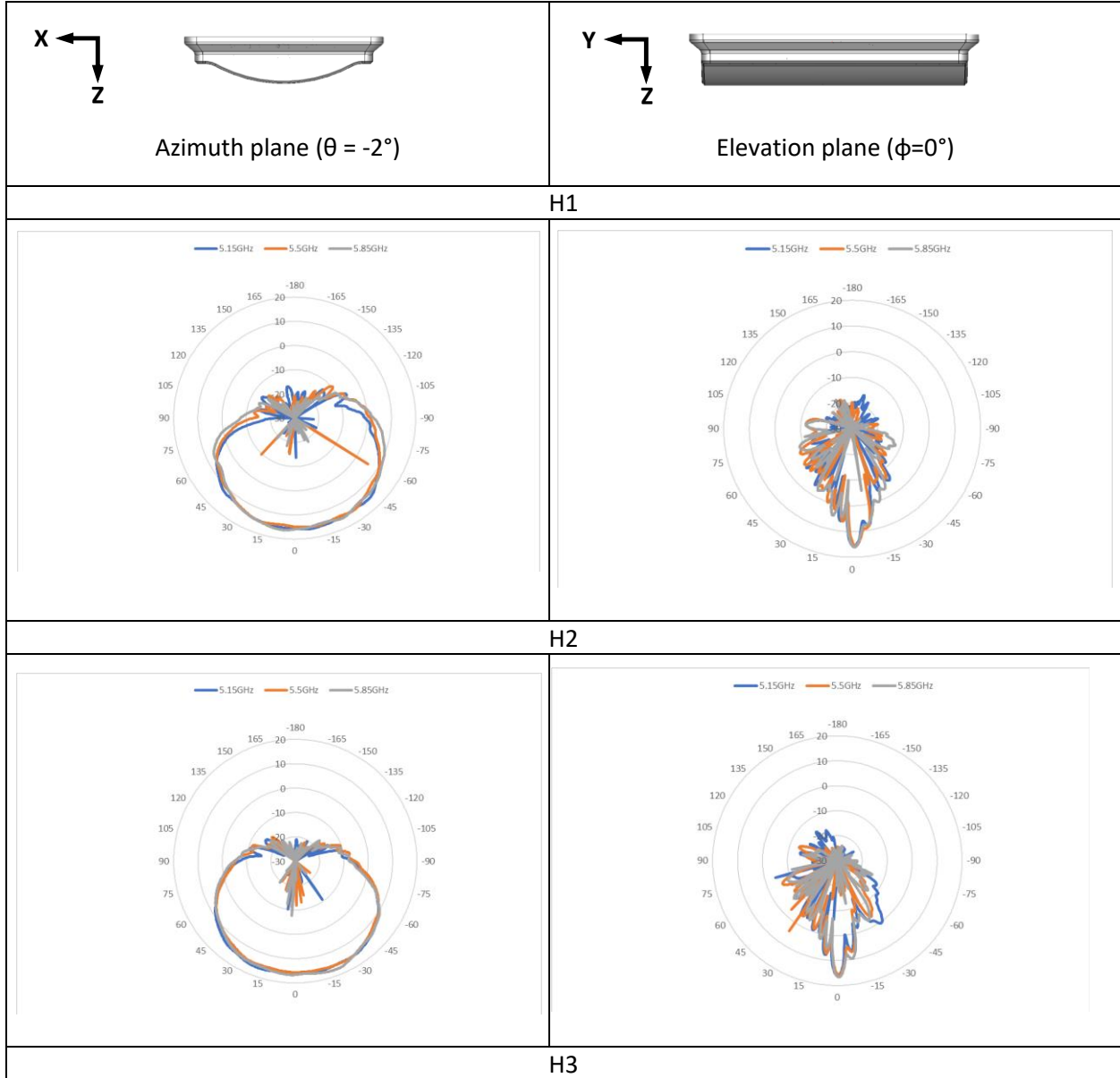
## Gain Chart

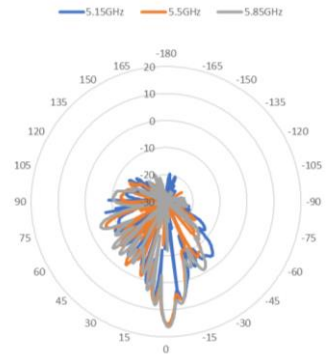
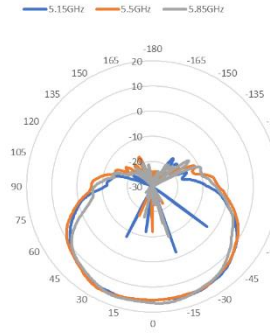
ePMP4500 8x8 Antenna Summary Gain Vertical			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	17+-1 dBi	17+-1 dBi	17+-1 dBi
ePMP4500 8x8 Antenna Summary Gain Horizontal			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	17+-1 dBi	17+-1 dBi	17+-1 dBi

ePMP4500 8x8 Antenna: V1			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	16.58 dBi	16.61 dBi	17 dBi
Peak Gain at polarization	( $\phi$ )9° ( $\theta$ )-2°	( $\phi$ )11° ( $\theta$ )-2°	( $\phi$ )4° ( $\theta$ )-2°
ePMP4500 8x8 Antenna: V2			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	16.80 dBi	16.32 dBi	16.76 dBi
Peak Gain at polarization	( $\phi$ )-10° ( $\theta$ )-2°	( $\phi$ )2° ( $\theta$ )-2°	( $\phi$ )-20° ( $\theta$ )-2°
ePMP4500 8x8 Antenna: V3			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	16.76 dBi	16.19 dBi	16.59 dBi
Peak Gain at polarization	( $\phi$ )-10° ( $\theta$ )-2°	( $\phi$ )-2.5° ( $\theta$ )-2°	( $\phi$ )-5.5° ( $\theta$ )-2°
ePMP4500 8x8 Antenna: V4			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	17 dBi	17 dBi	17 dBi
Peak Gain at polarization	( $\phi$ )-7.5° ( $\theta$ )-2°	( $\phi$ )-12° ( $\theta$ )-2°	( $\phi$ )-4° ( $\theta$ )-2°
ePMP4500 8x8 Antenna: H1			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	16.25 dBi	15.46 dBi	16.27 dBi
Peak Gain at polarization	( $\phi$ )-13° ( $\theta$ )-2°	( $\phi$ )-11° ( $\theta$ )-2°	( $\phi$ )11° ( $\theta$ )-2°
ePMP4500 8x8 Antenna: H2			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	16.14 dBi	15.77 dBi	16.92 dBi
Peak Gain at polarization	( $\phi$ )-11° ( $\theta$ )-2°	( $\phi$ )-20° ( $\theta$ )-2°	( $\phi$ )-20° ( $\theta$ )-2°
ePMP4500 8x8 Antenna: H3			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	15.91 dBi	15.94 dBi	16.61 dBi
Peak Gain at polarization	( $\phi$ )10° ( $\theta$ )-2°	( $\phi$ )20° ( $\theta$ )-2°	( $\phi$ )-6° ( $\theta$ )-2°
ePMP4500 8x8 Antenna: H4			
Frequency	5.15 GHz	5.5 GHz	5.85 GHz
Peak Gain	16.95 dBi	16.20 dBi	16.74 dBi
Peak Gain at polarization	( $\phi$ )12° ( $\theta$ )-2°	( $\phi$ )10° ( $\theta$ )-2°	( $\phi$ )-6° ( $\theta$ )-2°

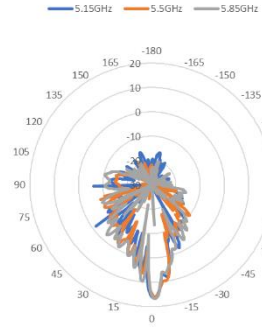
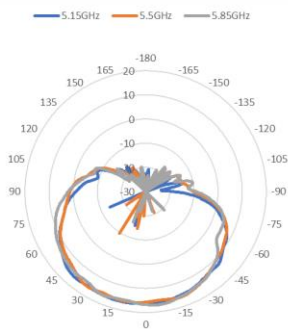
2D peak Gain

ePMP 4500 8x8 Antenna Pattern: Horizontal polarized ports

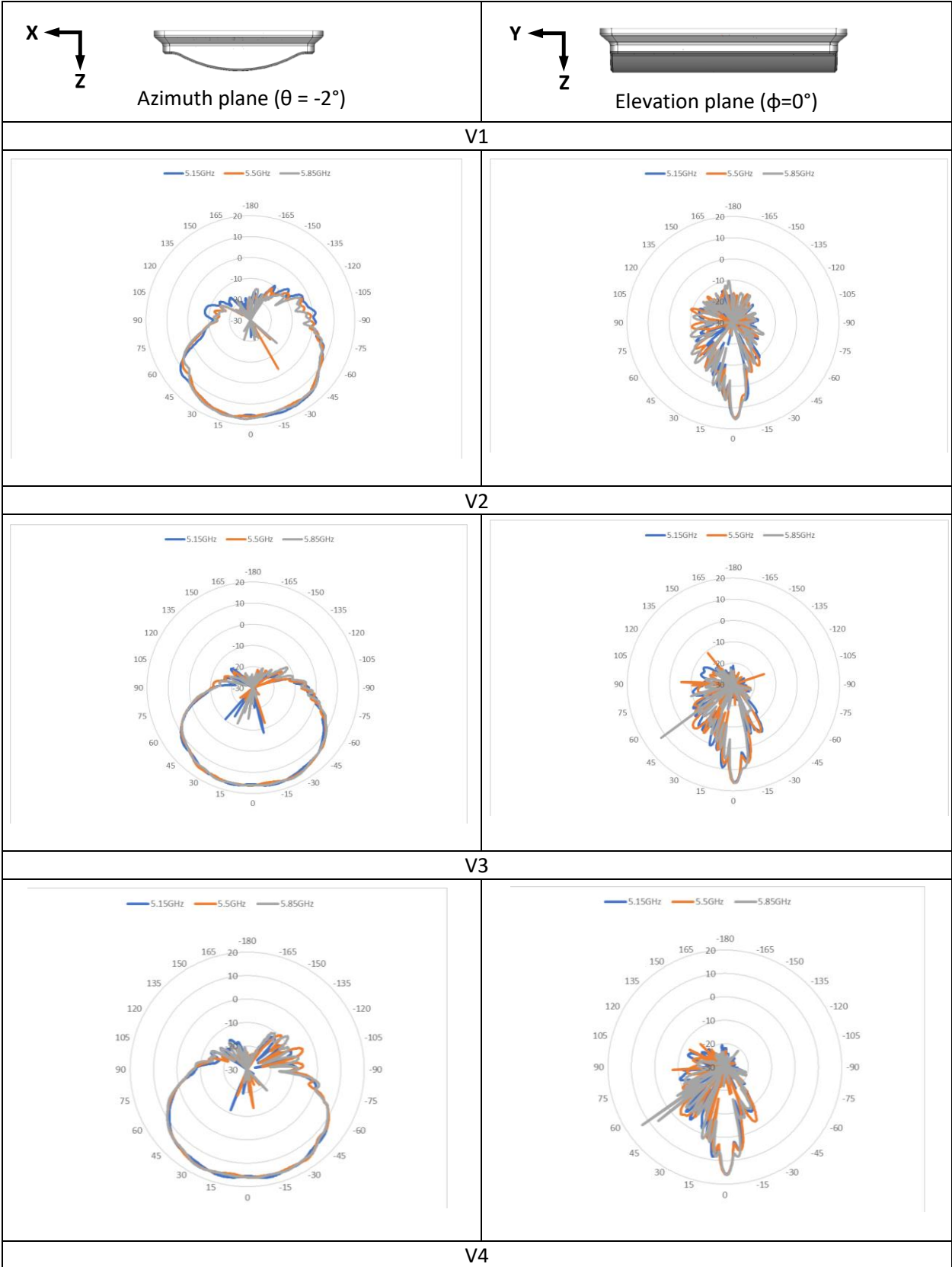


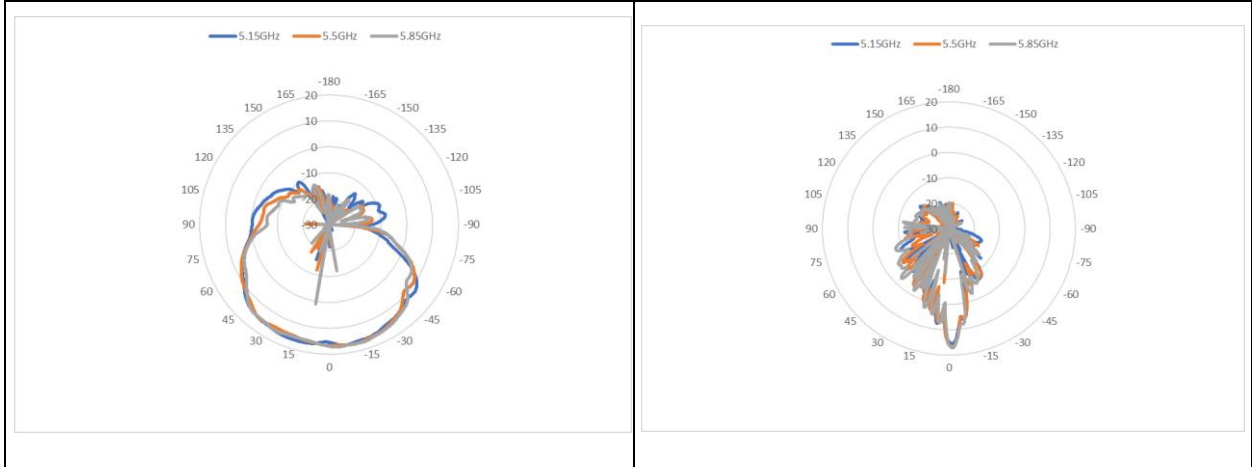


H4

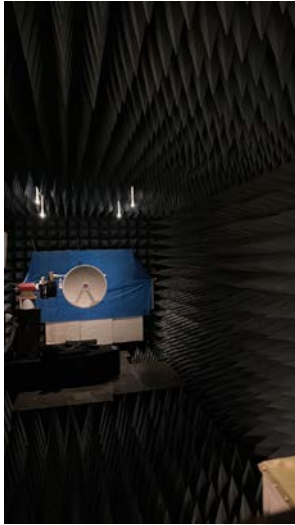


## ePMP 4500 8x8 Antenna Pattern: Vertical polarized ports

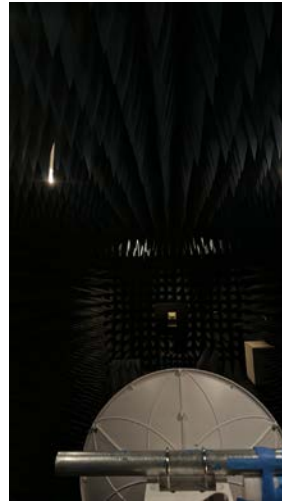




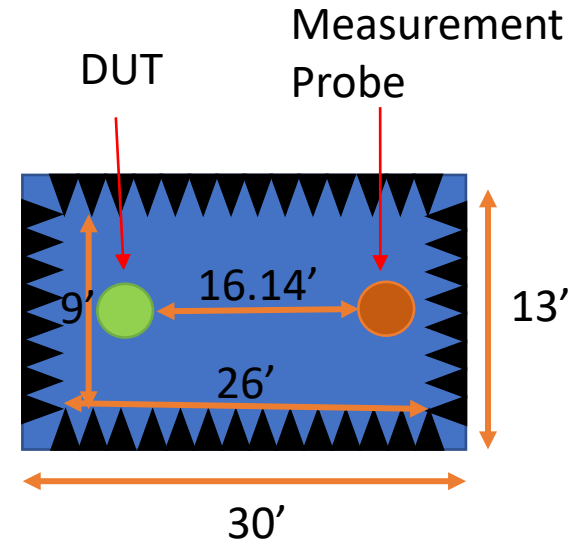
Picture from Probe



Picture from DUT



Diagram



The Cambium Networks' chamber used for measurements presented is a fully anechoic, scanning near field antenna measurement system. The dimensions of the measurement chamber are 13' wide by 30' long is 12.5' tall. The anechoic foam pyramids used on the floor and walls are 24" tall and are spaced 9" on center. The anechoic pyramids on the ceiling are 18" tall and have the same spacing. The anechoic box is 26' long by 9' wide by 9' tall. The spacing of the center of the DUT to the probe is 16.14'

This system can make accurate measurements from as low as 400 MHz to as high as 40 GHz. This chamber has been used to make absolute gain measurements presented for regulatory certification.