

Antenna test data

Antenna type: Five-band high-gain fiberglass omnidirectional antenna

Antenna model: TQ20809152458AG5

Test type: Sample measurement (1 sample)

Sample measurement (1 pair) Measurement date: January 2022

Measurement date: October 14, 2022

Test personnel on October 14th: Test Center (3D Darkroom)

Testers: Testing Center (3D Darkroom)

Antenna dimensions: $\varnothing 37.2 \times \varnothing 1200 \pm 5$

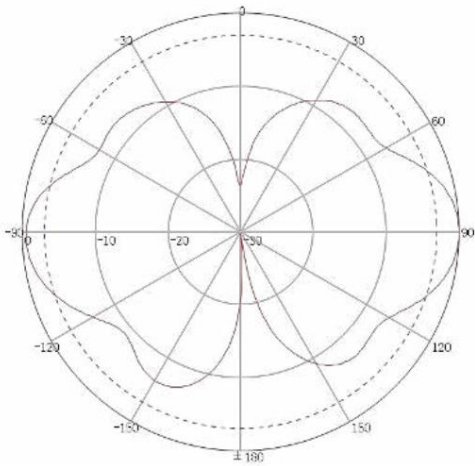
Antenna dimensions: $\varnothing 37.2 \times \varnothing 1200 \pm 5$

Sequence Number	Measurement items	Indicator Requirements	Unit	Measurement results	
1.	Frequency range: 832~86 MHz, 2900~930 MHz, 1420~1450 MHz, 2400~2500 MHz, 5100~5900 MHz.	832~862	MHz	832~862	
		900~930		900~930	
		1420~1450		1420~1450	
		2400~2500		2400~2500	
		5100~5900		5100~5900	
2.	Voltage Standing Wave Ratio (VSWR): 832~862@ $\varnothing 1.6$; 2900~930@ $\varnothing 1.6$; 1420~1450@ $\varnothing 1.6$; 2400~2500@ $\varnothing 1.6$; 5100~5900@ $\varnothing 1.6$.	832~862@ $\varnothing 1.6$	/	832~862@ $\varnothing 1.6$	
		900~930@ $\varnothing 1.89$		900~930@ $\varnothing 1.89$	
		1420~1450@ $\varnothing 2.0496$		1420~1450@ $\varnothing 2.0496$	
		2400~2500@ $\varnothing 1.49$		2400~2500@ $\varnothing 1.49$	
		5100~5900@ $\varnothing$ Reference		5100~5900@ $\varnothing$ Reference	
3	Gain 5 dBi 832 MHz	5	dBi	832 MHz	4.6
				847 MHz	5.1
				862 MHz	4.89
				900MHz	4.5
				915MHz	4.6
				930MHz	4.66
				1420 MHz	4.56
				1440 MHz	4.68
				1450 MHz	4.6
				2400MHz	4.01
				2450MHz	4.63
				2500MHz	4.48
				5100MHz	4.05
				5550MHz	5.85
4.	Horizontal plane out-of-roundness: 832~862@ ± 1 ; 2900~930@ ± 1 ; 1410~1470@ ± 1.524 ; 2400~2500@ ± 1 ; 5100~5900@ ± 4 dB	832~862@ ± 1 900~930@ ± 1 1410~1470@ ± 1.5 2400~2500@ ± 2 5100~5900@ ± 4	dB	832 MHz	0.42
				847 MHz	0.46
				862 MHz	0.12
				900MHz	0.35
				915MHz	0.35
				930MHz	0.55
				1420 MHz	1.4
				1440 MHz	1.44

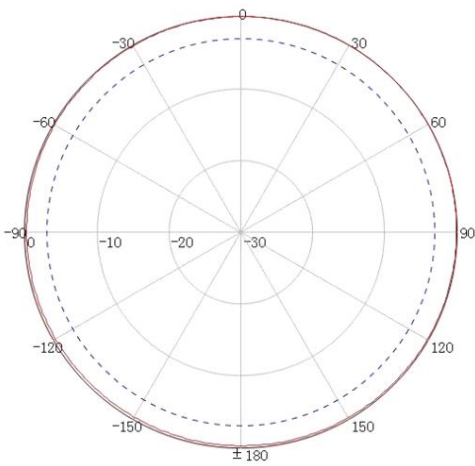
				1450 MHz	1.42
				2400MHz	1.98
				2450MHz	2
				2500MHz	1.46
				5100MHz 4 (for reference)	(reference)
				5550MHz 3.8 (for reference)	(reference)
				5900MHz 4.5 (for reference)	(reference)
5 H-plane beamwidth	360	°		832 MHz 360	
				847 MHz 360	
				862 MHz 360	
				900MHz 360	
				915MHz 360	
				930MHz 360	
				1420 MHz 360	
				1440 MHz 360	
				1450 MHz	360
				2400MHz	360
				2450MHz	360
				2500MHz	360
				5100MHz	360
				5550MHz	360
6 E-plane beamwidth	38±8 25±8@5100~5900	°		5900MHz	360
				832 MHz	37.04
				847 MHz	33.8
				862 MHz	35.53
				900MHz	32.3
				915MHz	35.22
				930MHz	38.24
				1420 MHz	42.62
				1440 MHz	42.93
				1450 MHz	44.24
				2400MHz	34.7
				2450MHz	34.3
				2500MHz	35.52
				5100MHz	23.77
				5550MHz	22.41
				5900MHz	20.54

Attached is a direction map:

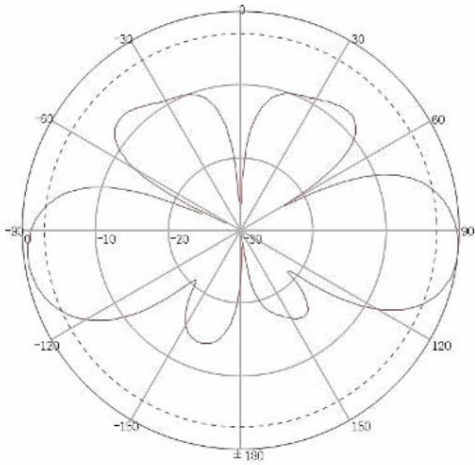
1) 840MHz band:



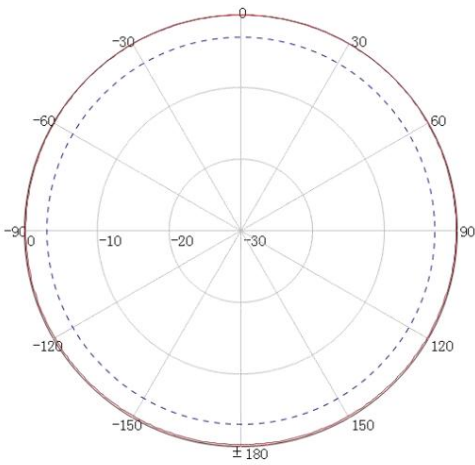
E-plane (832MHz)



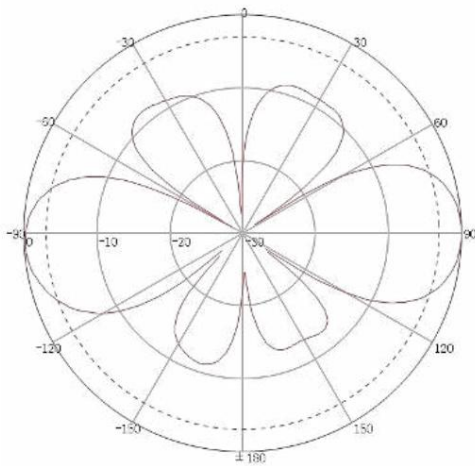
H-plane (832MHz)



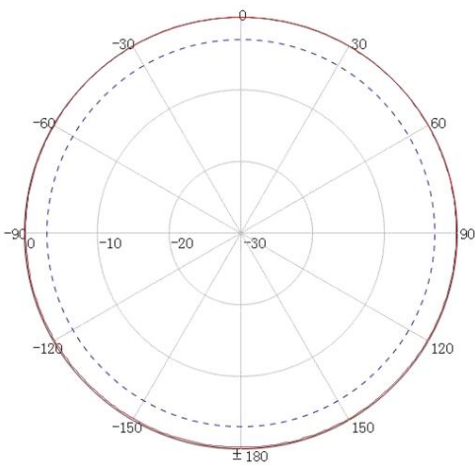
E-plane (847MHz)



H-plane (847MHz)

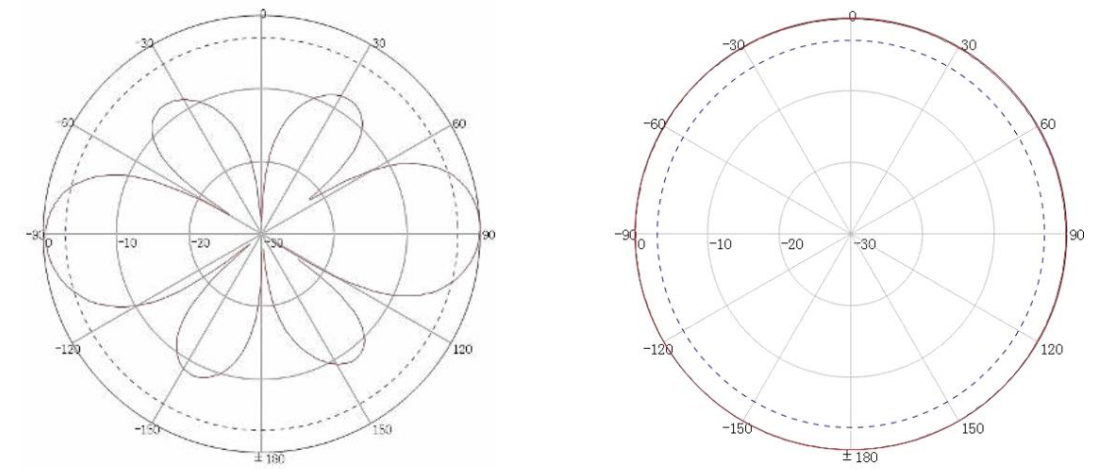


E-plane (862MHz)

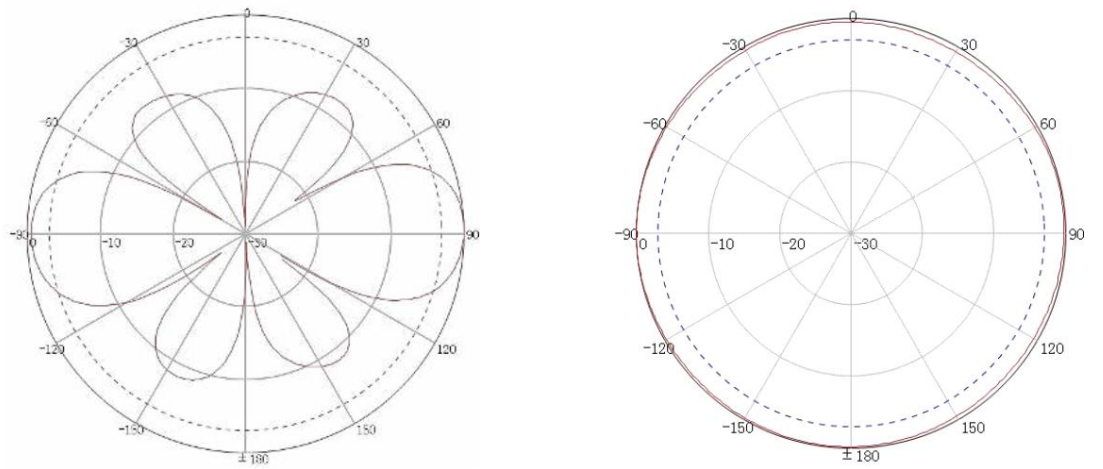


H-plane (862MHz)

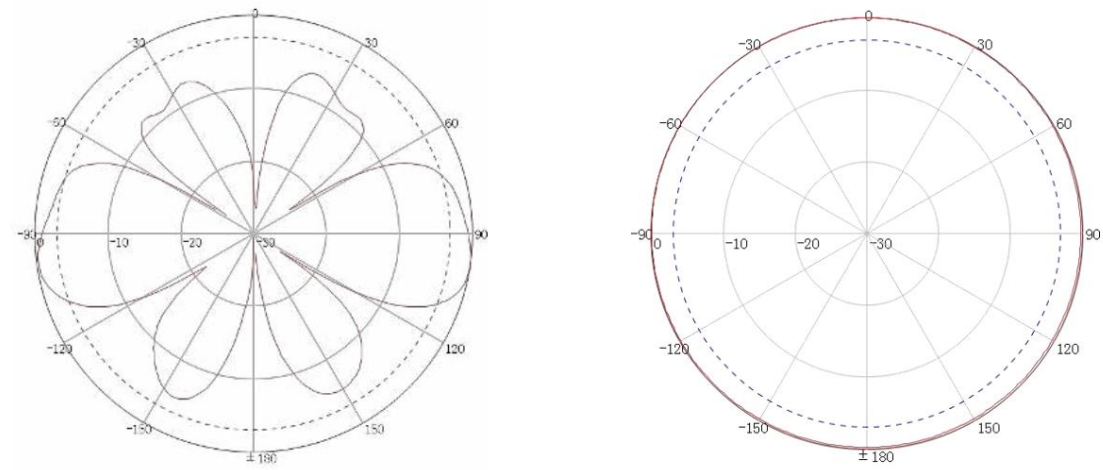
2) 900MHz band:



E-side (900MHz) E-plane (900MHz) H-plane (900MHz) H-plane (900MHz)

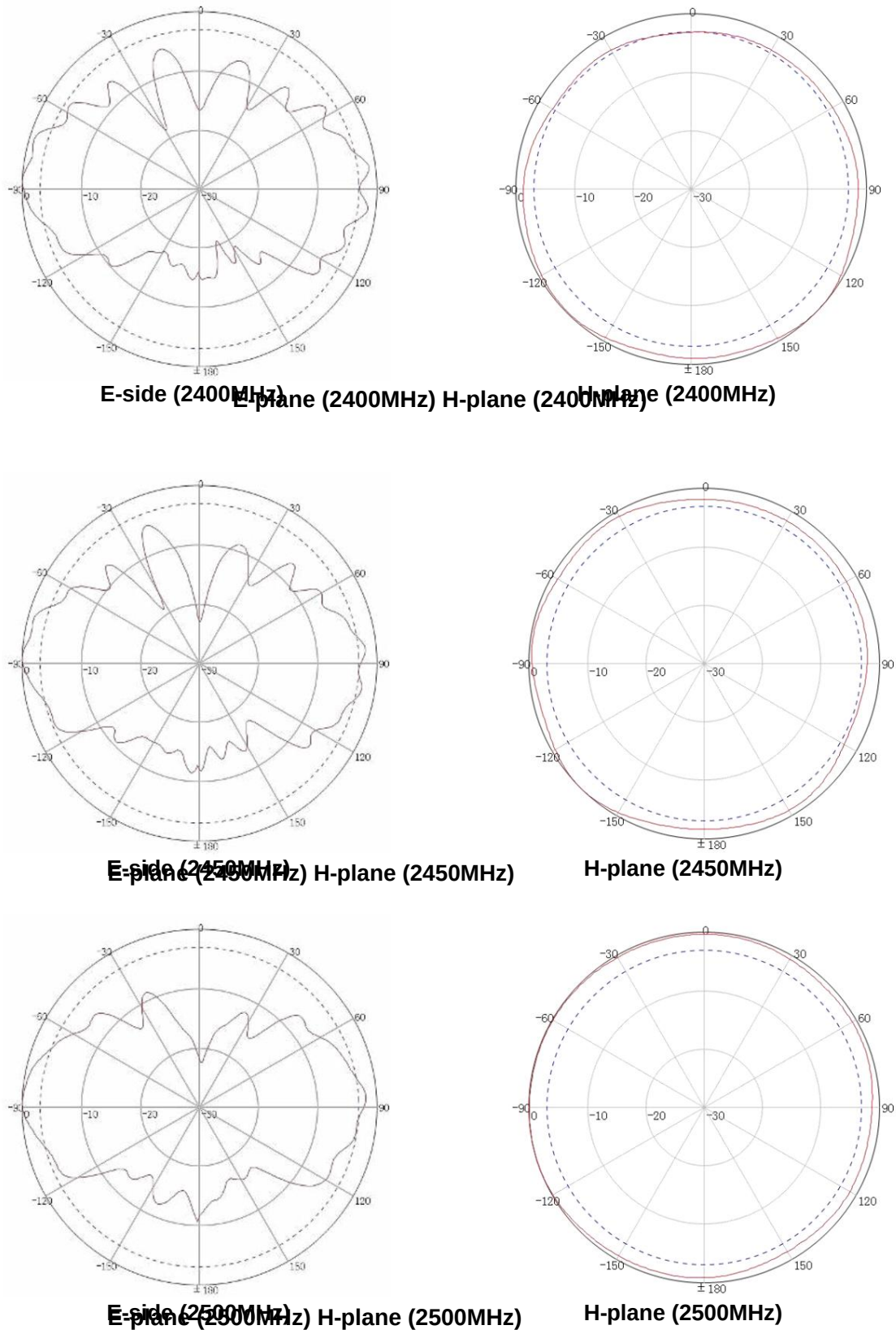


E-side (915MHz) E-plane (915MHz) H-plane (915MHz) H-plane (915MHz)

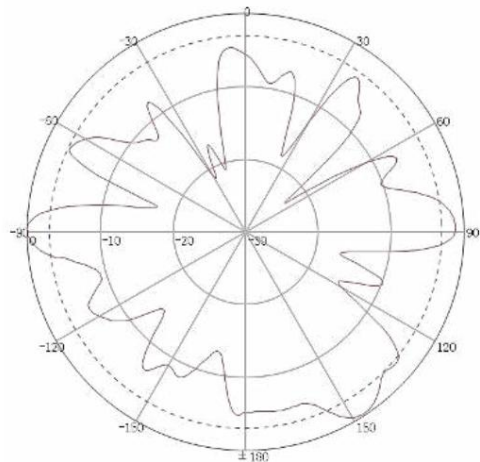


E side (930MHz) E-plane (930MHz) H-plane (930MHz) H-plane (930MHz)

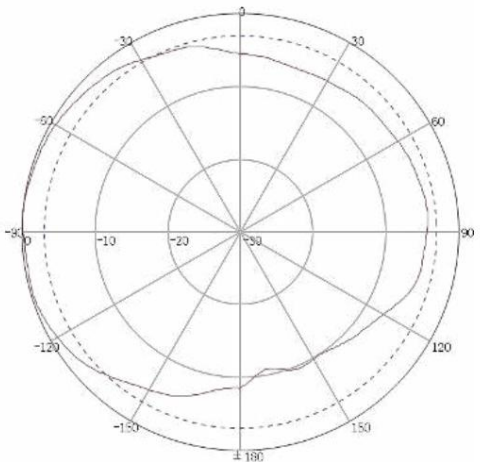
4) 2.4GHz band:



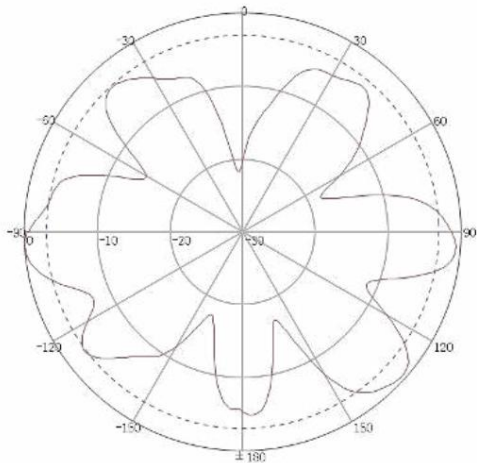
5) 5.8GHz band:



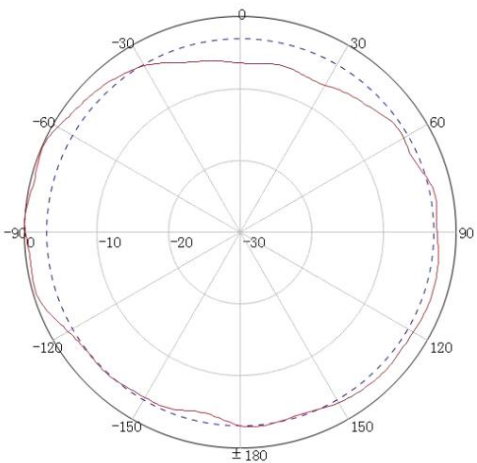
E-plane (5100MHz) H-plane (5100MHz)



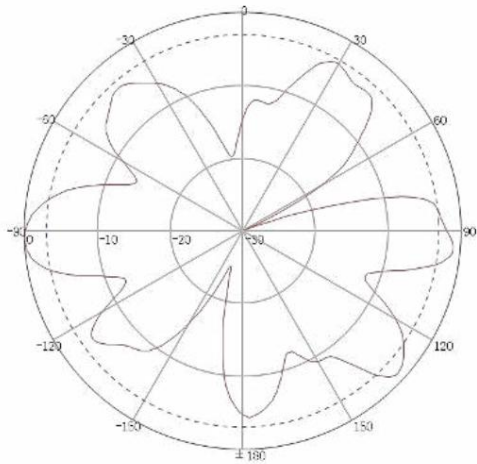
H-plane (5100MHz)



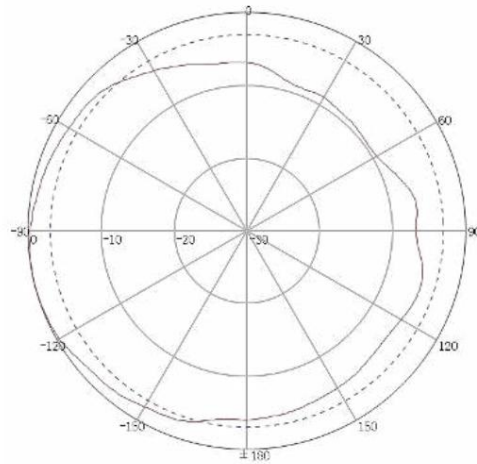
E-plane (5550MHz) H-plane (5550MHz)



H-plane (5550MHz)

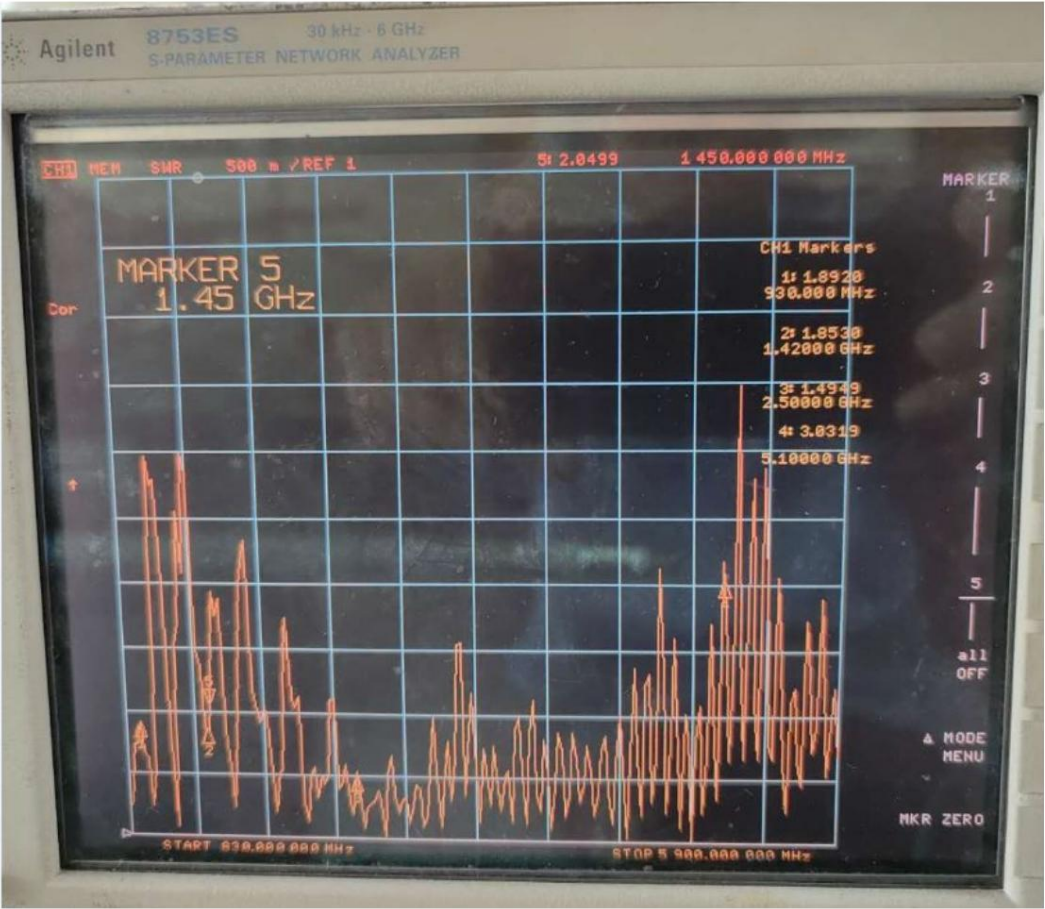


E-plane (5900MHz) H-plane (5900MHz)



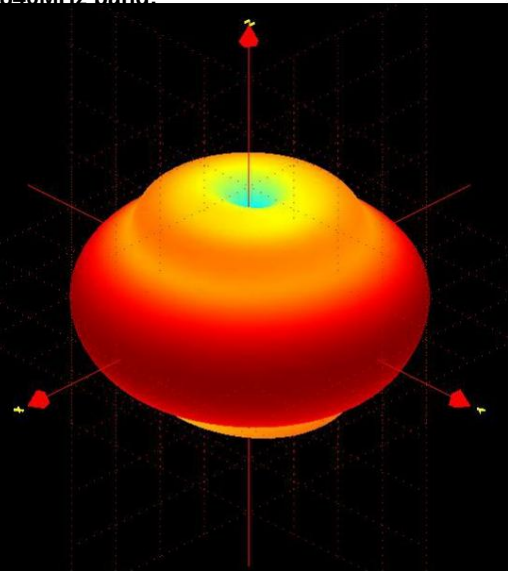
H-plane (5900MHz)

Standing wave diagram attached.

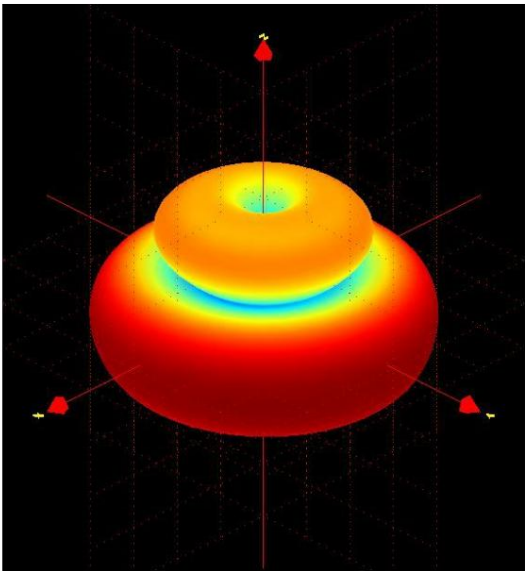


Attached are the 3D radiation pattern (1)

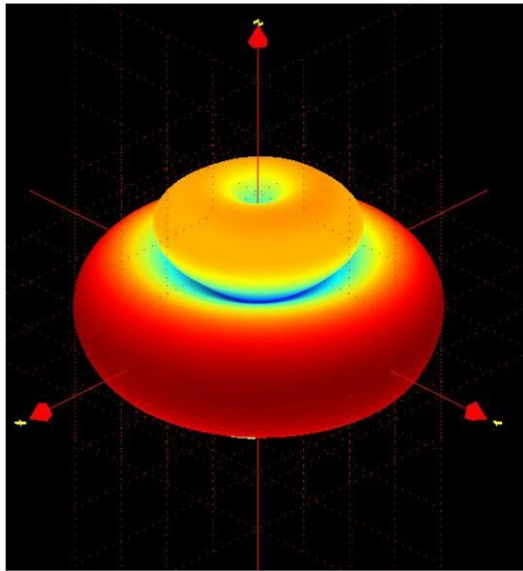
1) 840MHz band:



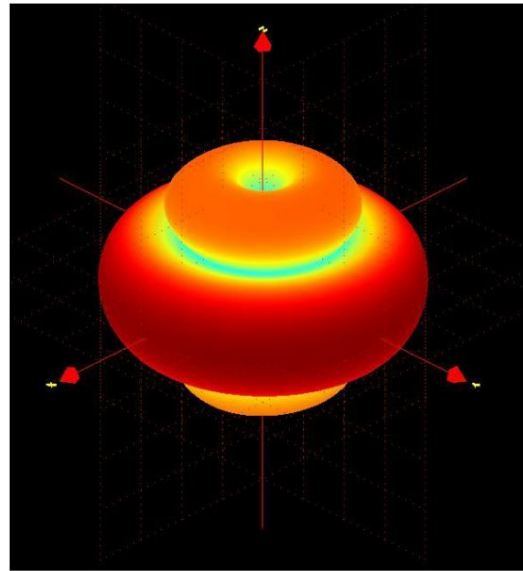
832MHz



847MHz

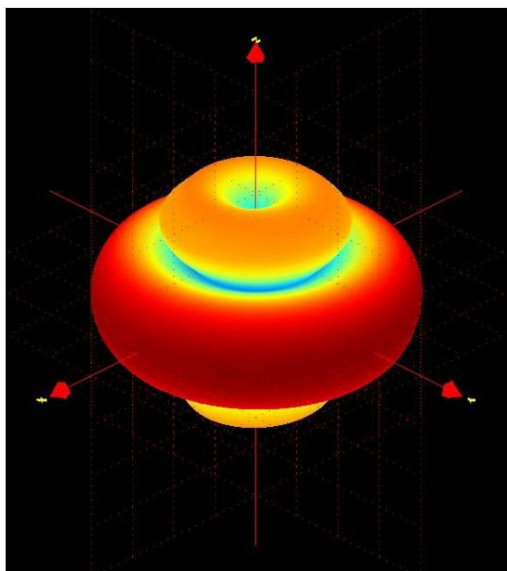


862MHz

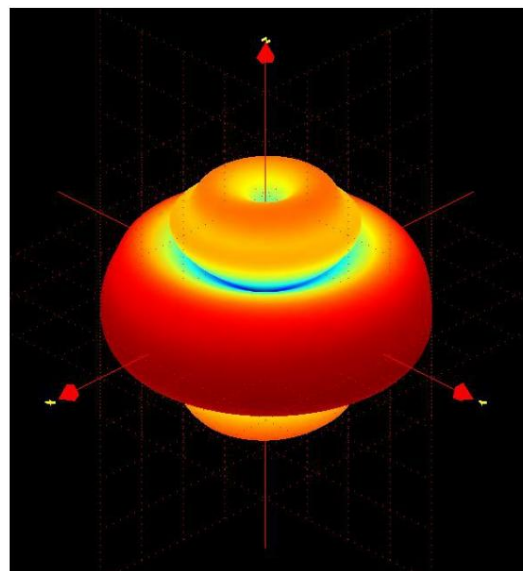


900MHz

2) 915MHz band:

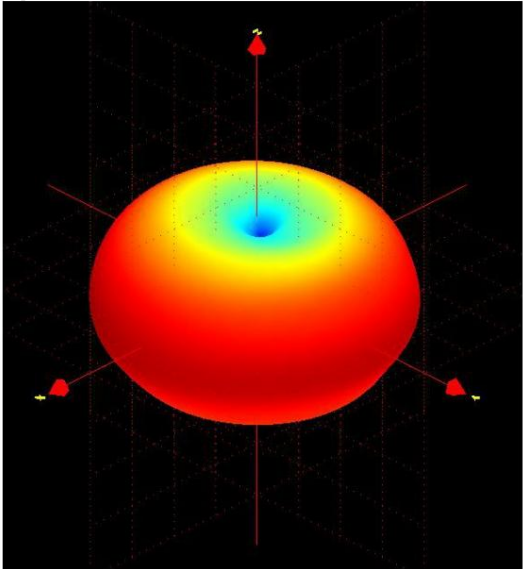


915MHz

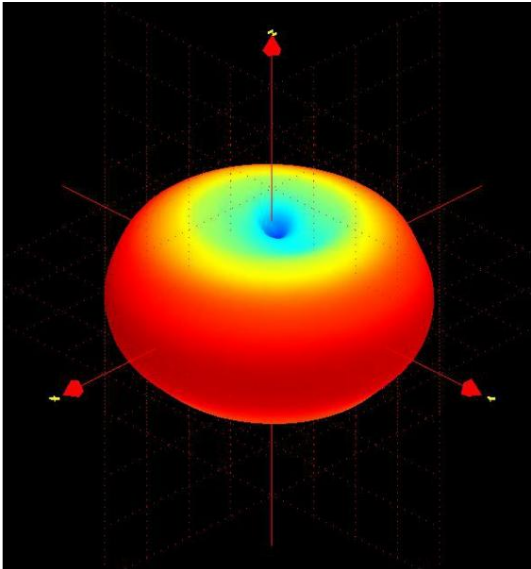


930MHz

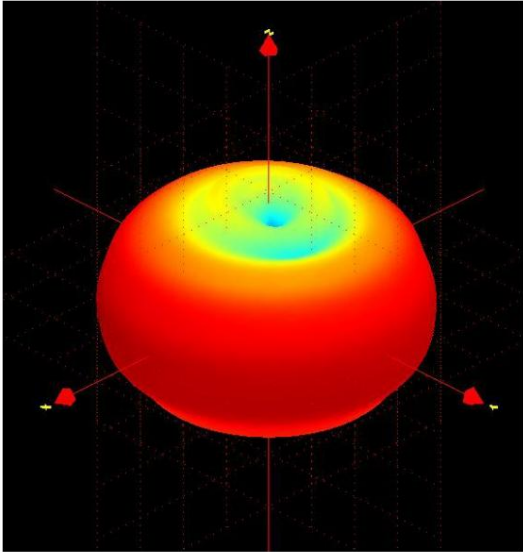
3) 1440MHz band:



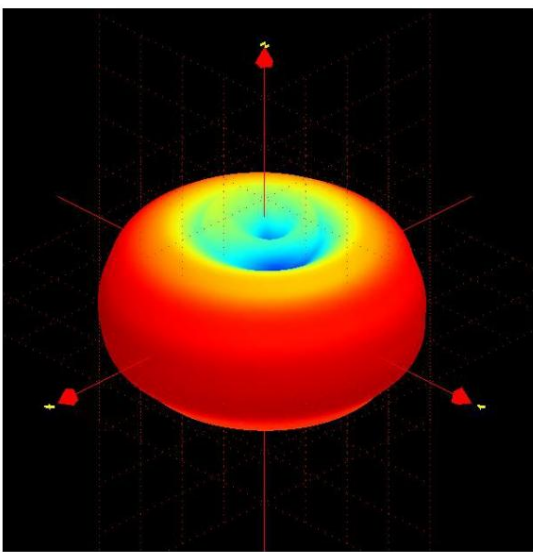
1420MHz



1430MHz

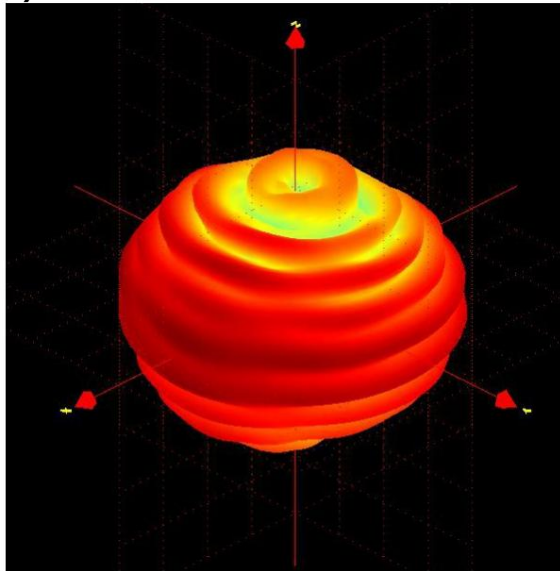


1440 MHz

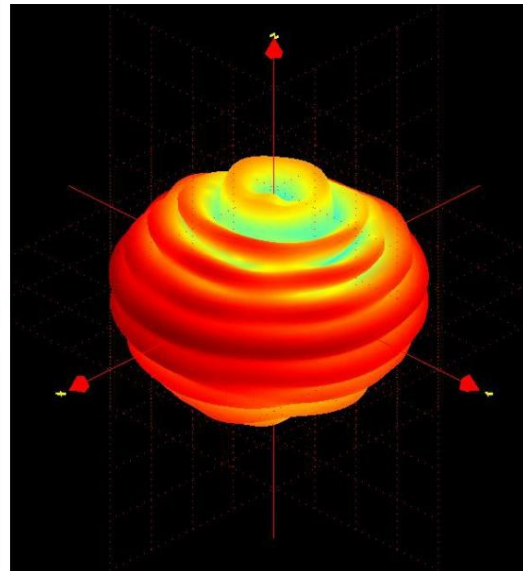


1450 MHz

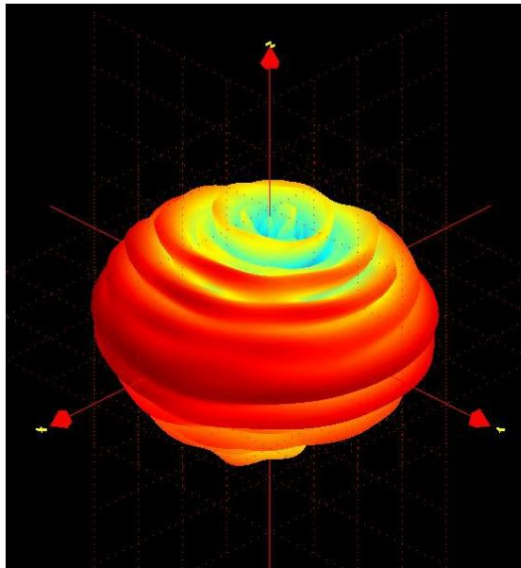
4) 2446Hz band:



2400 MHz

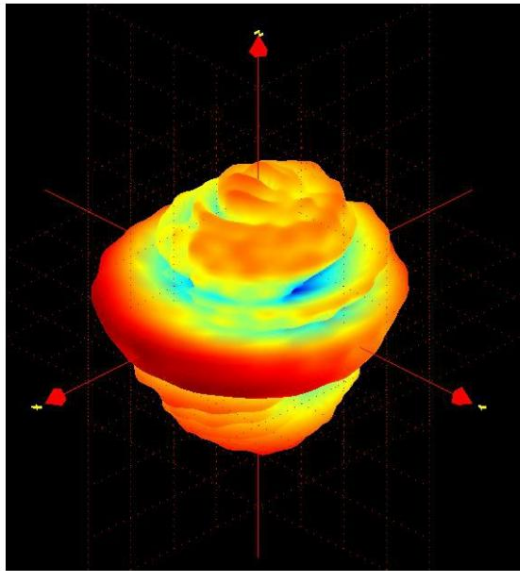


2450 MHz

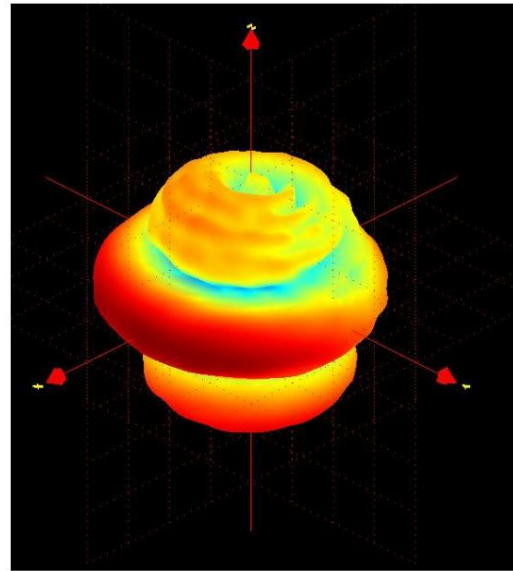


2500MHz

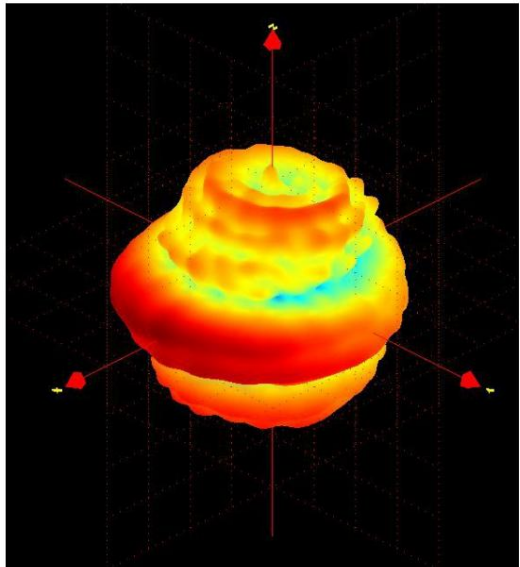
4) 5364 band:



5100MHz



5550MHz



5900MHz