



4G^{LTE}

Wi Fi

RoHS
Compliant

Product Name: MT-6B Series_ 3 in 1 LTE MIMO/WiFi Combination
Antenna, Magnetic Mount

Part Number: MT-6B-AS-2LW01

Features:

- 2*LTE MIMO, 1*WiFi Antenna Combination
- Support LTE 698-960MHz, 1710-2690MHz
- Support WiFi Dual Bands, 2400-2500MHz, 5150-5850MHz
- Cable Length & Connector are customizable
- Robust Enclosure, IP67 Waterproof Resistant
- RoHS & REACH Compliant

Applications:

- Fleet Management & Telematics
- Vehicle Navigation

3-in-1 LTE MIMO/WiFi Combination Antenna, Magnetic Mount

MODEL: MT-6B-AS-2LW01

WI-RD-D-256 V1.0

I. Specifications:

Items		Specifications					
LTE MIMO1 Electrical Characteristics							
Application Bands		LTE 700	GSM 850/900	DCS	PCS	UMTS1	LTE2600
Frequencies (MHz)		698 ~ 824	824 ~ 960	1710 ~ 1880	1850 ~ 1990	1920 ~ 2170	2300 ~ 2690
Efficiency (%)							
Free Space	30cm	34.34	37.34	43.27	58.64	59.59	56.80
	1m	32.19	34.77	39.28	53.14	53.59	49.92
	2m	29.36	31.41	34.22	46.17	46.05	41.53
	3m	26.78	28.37	29.80	40.11	39.57	34.54
	5m	22.27	23.15	22.61	30.27	29.22	23.90
On the 30*30cm Ground Plane	30cm	39.68	34.84	39.63	62.82	62.00	54.92
	1m	37.21	32.45	35.97	56.93	55.76	48.28
	2m	33.93	29.31	31.33	49.46	47.92	40.16
	3m	30.95	26.47	27.29	42.96	41.18	33.40
	5m	25.74	21.60	20.70	32.43	30.41	23.11
Average Gain (dBi)							
Free Space	30cm	-4.64	-4.28	-3.64	-2.32	-2.25	-2.46
	1m	-4.92	-4.59	-4.06	-2.75	-2.71	-3.02
	2m	-5.32	-5.03	-4.66	-3.36	-3.37	-3.82
	3m	-5.72	-5.47	-5.26	-3.97	-4.03	-4.62
	5m	-6.52	-6.35	-6.46	-5.19	-5.34	-6.22
On the 30*30cm	30cm	-4.01	-4.58	-4.02	-2.02	-2.08	-2.60
	1m	-4.29	-4.89	-4.44	-2.45	-2.54	-3.16

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Ground Plane	2m	-4.69	-5.33	-5.04	-3.06	-3.20	-3.96
	3m	-5.09	-5.77	-5.64	-3.67	-3.85	-4.76
	5m	-5.89	-6.66	-6.84	-4.89	-5.17	-6.36
Peak Gain (dBi)							
Free Space	30cm	1.32	3.03	2.58	3.91	3.91	4.42
	1m	1.04	2.68	2.16	3.49	3.49	3.86
	2m	0.64	2.18	1.56	2.89	2.89	3.06
	3m	0.24	1.68	0.96	2.29	2.29	2.26
	5m	-0.56	0.68	-0.24	1.09	1.09	0.66
On the 30*30cm Ground Plane	30cm	1.31	3.64	4.24	6.89	6.89	4.77
	1m	1.03	3.29	3.82	6.47	6.47	4.21
	2m	0.63	2.79	3.22	5.87	5.87	3.41
	3m	0.23	2.29	2.62	5.27	5.27	2.61
	5m	-0.57	1.29	1.42	4.07	4.07	1.01
V.S.W.R	Free Space	< 3		< 2.5			< 2.5
	On the 30*30cm Ground Plane	< 3.5		< 3			< 3
Return Loss (dB)	Free Space	< -6		< -7			< -7
	On the 30*30cm Ground Plane	< -5		< -6			< -6
Polarization		Linear					
Impedance (Ω)		50					
Cable / Length		H100 / 2 meters					
Connector		SMA (Male)					

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Items		Specifications					
LTE MIMO2 Electrical Characteristics							
Application Bands		LTE 700	GSM 850/900	DCS	PCS	UMTS1	LTE2600
Frequencies (MHz)		698 ~ 824	824 ~ 960	1710 ~ 1880	1850 ~ 1990	1920 ~ 2170	2300 ~ 2690
Efficiency (%)							
Free Space	30cm	35.56	39.47	44.19	59.66	57.39	62.82
	1m	33.34	36.76	40.12	54.06	51.61	55.22
	2m	30.40	33.20	34.94	46.97	44.35	45.93
	3m	27.73	29.99	30.43	40.80	38.11	38.21
	5m	23.06	24.47	23.09	30.79	28.15	26.43
On the 30*30cm Ground Plane	30cm	40.42	37.93	39.80	61.82	58.63	60.05
	1m	37.90	35.33	36.13	56.02	52.72	52.78
	2m	34.56	31.91	31.47	48.67	45.31	43.90
	3m	31.52	28.82	27.41	42.28	38.93	36.52
	5m	26.22	23.52	20.79	31.91	28.75	25.26
Average Gain (dBi)							
Free Space	30cm	-4.49	-4.04	-3.55	-2.24	-2.41	-2.02
	1m	-4.77	-4.35	-3.97	-2.67	-2.87	-2.58
	2m	-5.17	-4.79	-4.57	-3.28	-3.53	-3.38
	3m	-5.57	-5.23	-5.17	-3.89	-4.19	-4.18
	5m	-6.37	-6.11	-6.37	-5.12	-5.51	-5.78
On the 30*30cm Ground Plane	30cm	-3.93	-4.21	-4.00	-2.09	-2.32	-2.22
	1m	-4.21	-4.52	-4.42	-2.52	-2.78	-2.78
	2m	-4.61	-4.96	-5.02	-3.13	-3.44	-3.58
	3m	-5.01	-5.40	-5.62	-3.74	-4.10	-4.38
	5m	-5.81	-6.29	-6.82	-4.96	-5.41	-5.98
Peak Gain (dBi)							
Free Space	30cm	1.47	3.44	2.55	4.70	4.70	6.20
	1m	1.19	3.09	2.13	4.21	4.21	5.64

	2m	0.79	2.59	1.53	3.52	3.52	4.84
	3m	0.39	2.09	0.93	2.92	2.92	4.04
	5m	-0.41	1.09	-0.27	1.72	1.72	2.44
On the 30*30cm Ground Plane	30cm	1.33	3.22	2.93	5.04	5.04	6.65
	1m	1.05	2.87	2.51	4.62	4.62	6.09
	2m	0.65	2.37	1.91	4.02	4.02	5.29
	3m	0.25	1.87	1.31	3.42	3.42	4.49
	5m	-0.55	0.87	0.11	2.22	2.22	2.89
V.S.W.R	Free Space	< 3		< 2.5			< 2.5
	On the 30*30cm Ground Plane	< 3.5		< 3			< 3
Return Loss (dB)	Free Space	< -6		< -7			< -7
	On the 30*30cm Ground Plane	< -5		< -6			< -6
Polarization		Linear					
Impedance (Ω)		50					
Cable / Length		H100 / 2 meters					
Connector		SMA (Male)					

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Items		Specifications						
WiFi Electrical Characteristics								
Frequencies (MHz)		2400	2450	2500	5150	5350	5750	5850
Efficiency (%)								
Free Space	30cm	59.29	65.16	66.22	51.17	51.64	64.42	50.12
	1m	47.10	51.76	52.60	36.22	36.56	44.57	34.67
	2m	34.12	37.50	38.11	22.34	22.54	25.64	19.95
	3m	24.15	26.55	26.98	13.77	13.90	15.10	11.75
	5m	12.68	13.93	14.16	5.12	5.16	5.12	3.98
On the 30*30cm Ground Plane	30cm	56.49	59.29	59.43	53.09	52.60	60.81	45.50
	1m	44.87	47.10	47.21	37.58	37.24	42.07	31.48
	2m	32.51	34.12	34.20	23.17	22.96	24.21	18.11
	3m	23.01	24.15	24.21	14.29	14.16	14.26	10.67
	5m	12.08	12.68	12.71	5.31	5.26	4.83	3.61
Average Gain (dBi)								
Free Space	30cm	-2.27	-1.86	-1.79	-2.91	-2.87	-1.91	-3.00
	1m	-3.27	-2.86	-2.79	-4.41	-4.37	-3.51	-4.60
	2m	-4.67	-4.26	-4.19	-6.51	-6.47	-5.91	-7.00
	3m	-6.17	-5.76	-5.69	-8.61	-8.57	-8.21	-9.30
	5m	-8.97	-8.56	-8.49	-12.91	-12.87	-12.91	-14.00
On the 30*30cm Ground Plane	30cm	-2.48	-2.27	-2.26	-2.75	-2.79	-2.16	-3.42
	1m	-3.48	-3.27	-3.26	-4.25	-4.29	-3.76	-5.02
	2m	-4.88	-4.67	-4.66	-6.35	-6.39	-6.16	-7.42
	3m	-6.38	-6.17	-6.16	-8.45	-8.49	-8.46	-9.72
	5m	-9.18	-8.97	-8.96	-12.75	-12.79	-13.16	-14.42
Peak Gain (dBi)								
Free Space	30cm	4.22	4.31	4.54	5.03	5.55	5.00	2.86
	1m	3.22	3.31	3.54	3.53	4.05	3.40	1.26
	2m	1.82	1.91	2.14	1.43	1.95	1.00	-1.14
	3m	0.32	0.41	0.64	-0.67	-0.15	-1.30	-3.44
	5m	-2.48	-2.39	-2.16	-4.97	-4.45	-6.00	-8.14
On the 30*30cm	30cm	5.29	5.00	4.87	5.72	5.41	6.33	4.79

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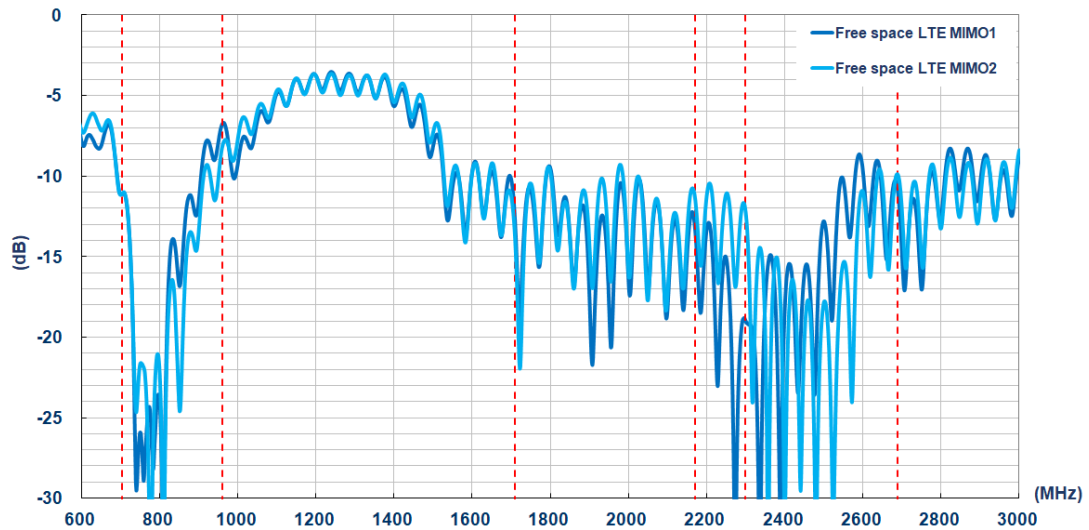
Ground Plane	1m	4.29	4.00	3.87	4.22	3.91	4.73	3.19
	2m	2.89	2.60	2.47	2.12	1.81	2.33	0.79
	3m	1.39	1.10	0.97	0.02	-0.29	0.03	-1.51
	5m	-1.41	-1.70	-1.83	-4.28	-4.59	-4.67	-6.21
V.S.W.R		< 2						
Return Loss (dB)		< -10						
Polarization		Linear						
Impedance (Ω)		50						
Cable / Length		H100 / 2 meters						
Connector		RSMA (Male)						
Dimension (mm)		φ80(D) x 25.4(H)						
Environmental Conditions								
Operation Temperature		-40 ~ +85 °C						
Storage Temperature		-40 ~ +85 °C						
Waterproof Resistant		IP67						
Relative Humidity		95% non-condensing						

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II. Antenna Technical Parameters:

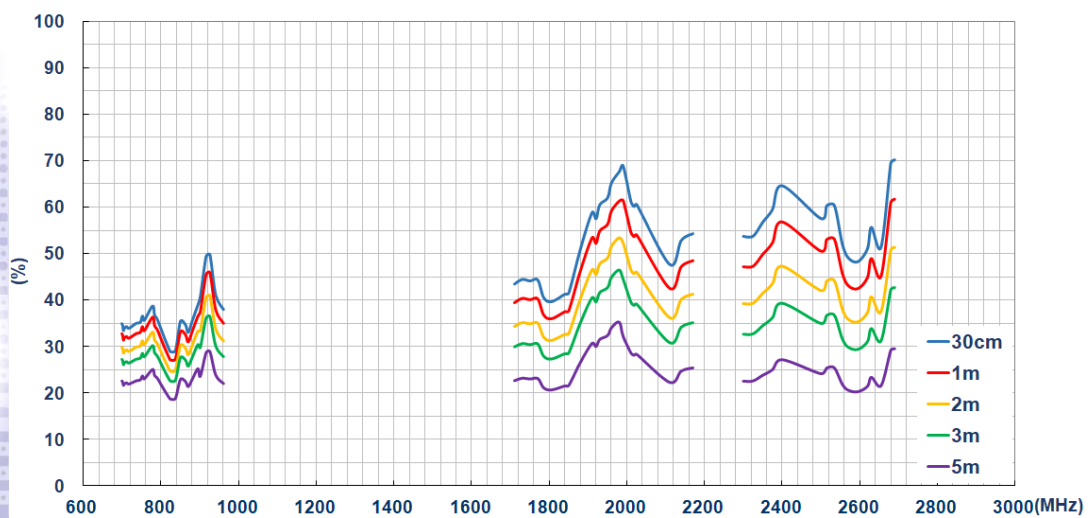
Free Space

S11 (dB) – LTE MIMO1 / LTE MIMO2

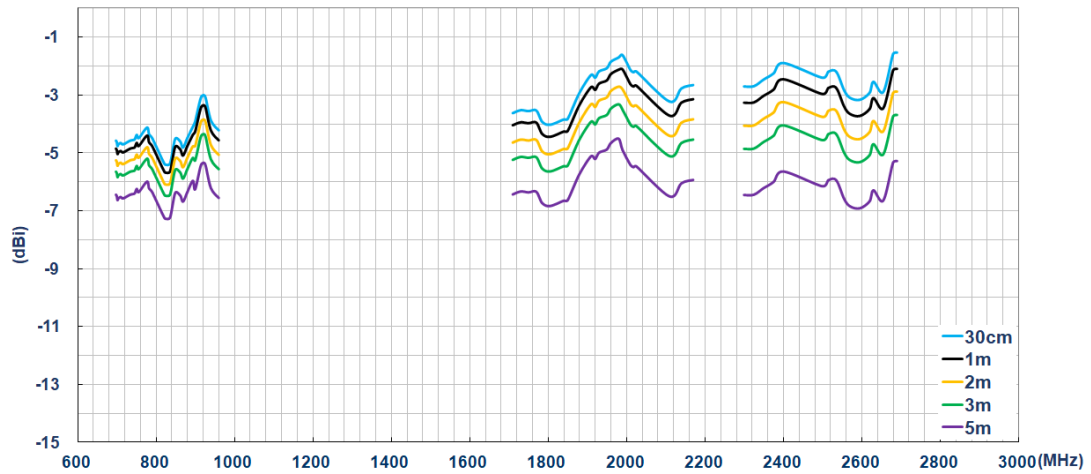


Free Space

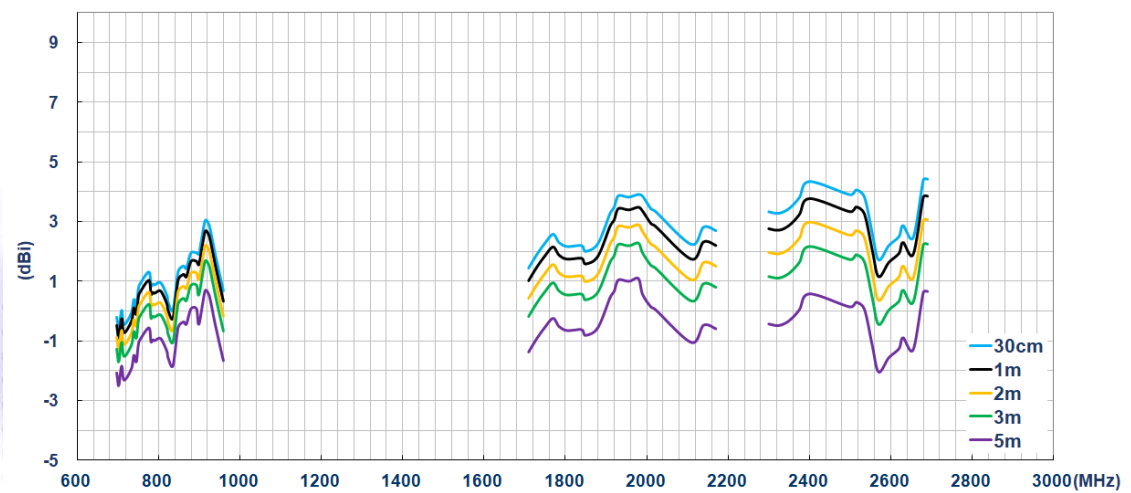
Efficiency (%) – LTE MIMO1



Average Gain (dBi) - LTE MIMO1

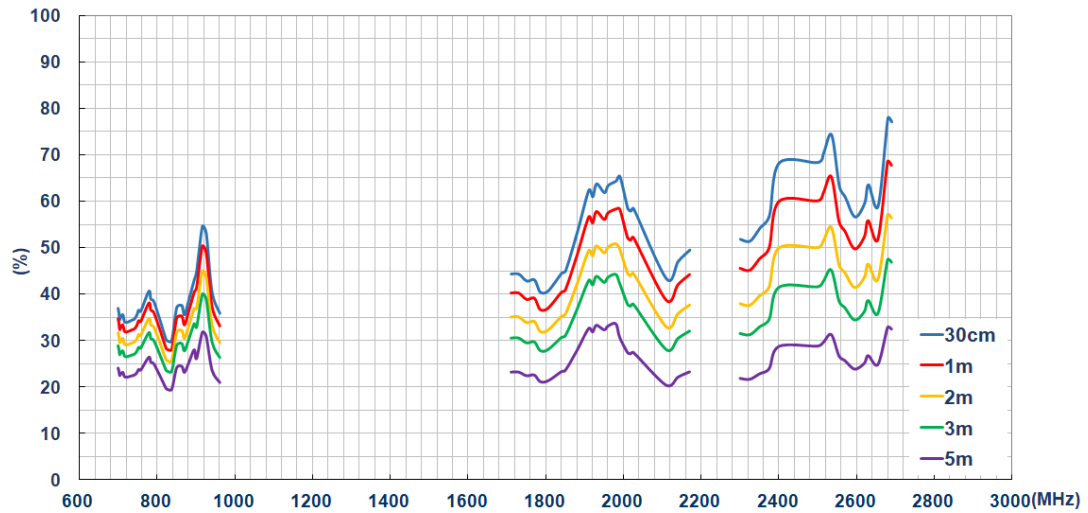


Peak Gain (dBi) -LTE MIMO1

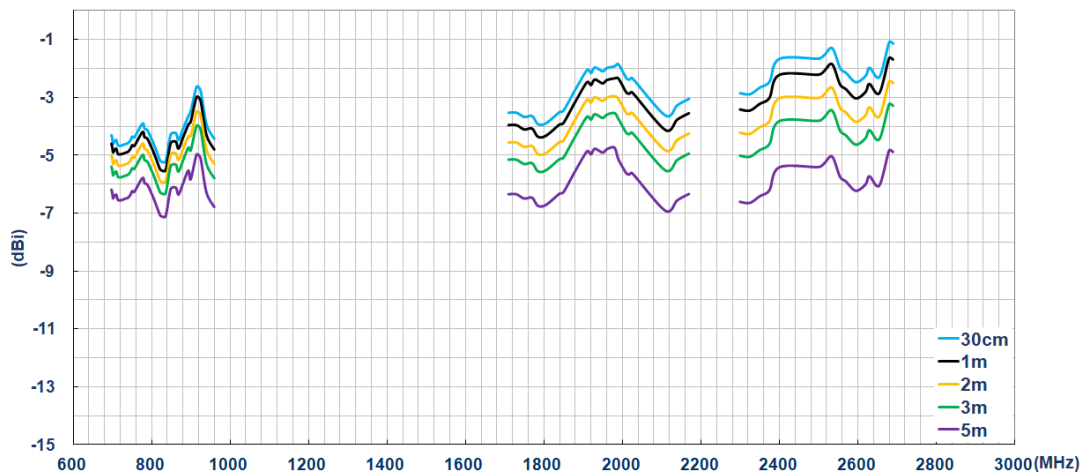


Free Space

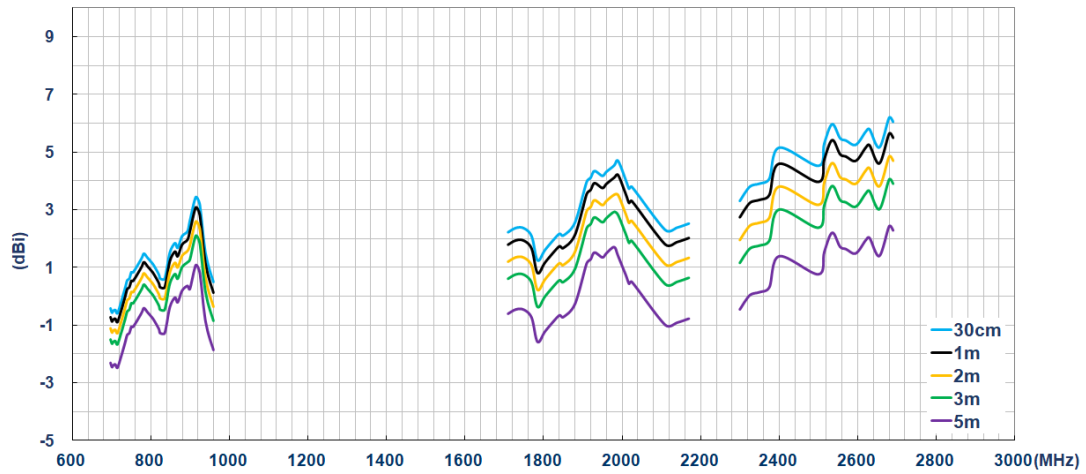
Efficiency (%) – LTE MIMO2



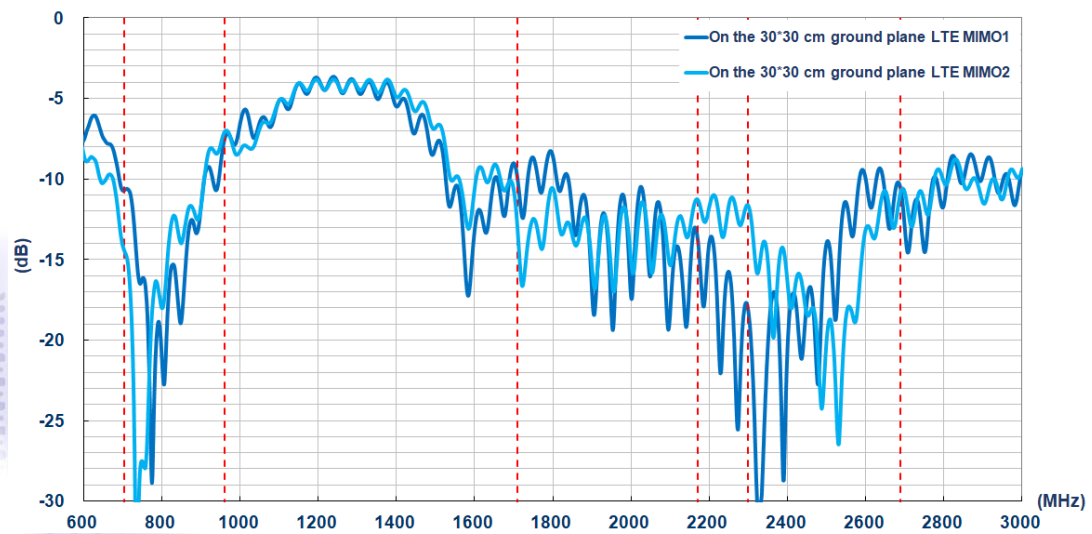
Average Gain (dBi) – LTE MIMO2



Peak Gain (dBi) -LTE MIMO2



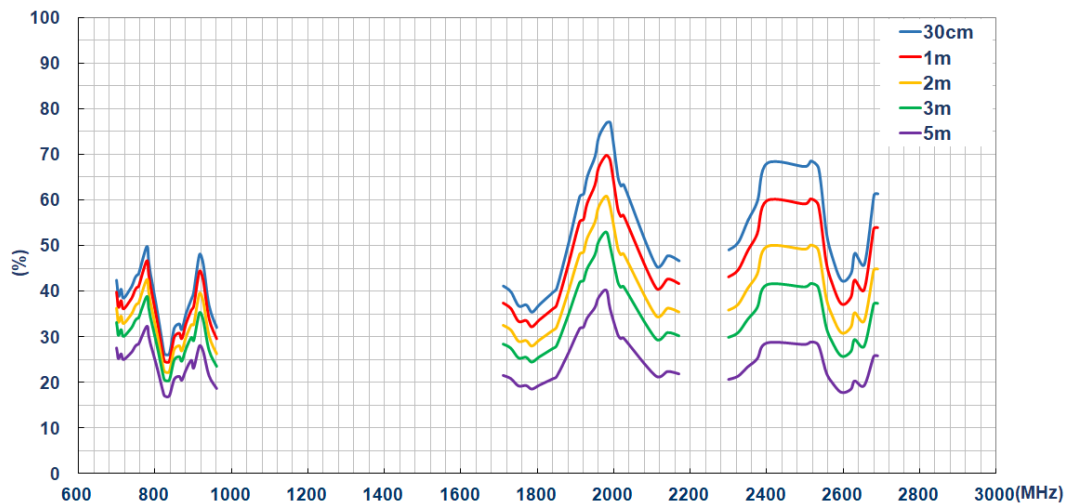
On the 30*30cm Ground Plane S11 (dB) - LTE MIMO1 / LTE MIMO2



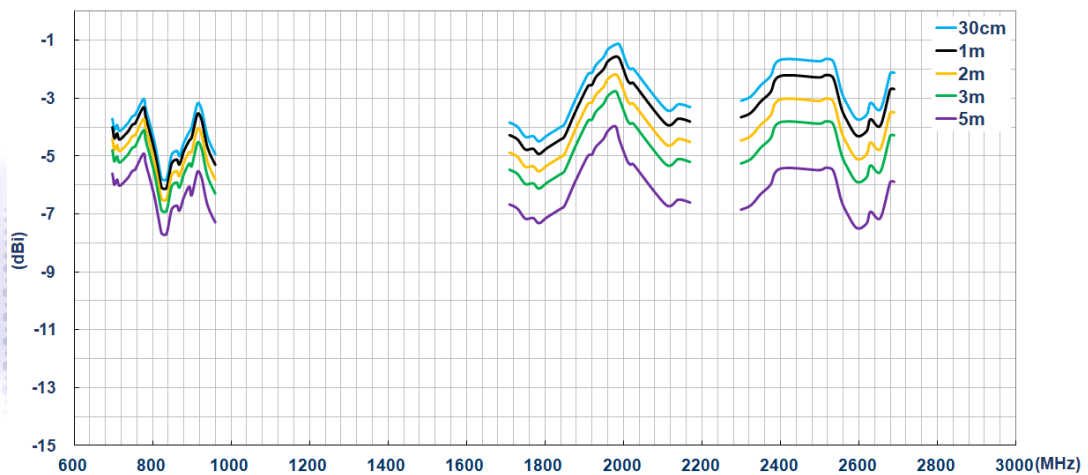
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On the 30*30cm Ground Plane

Efficiency (%) -LTE MIMO1

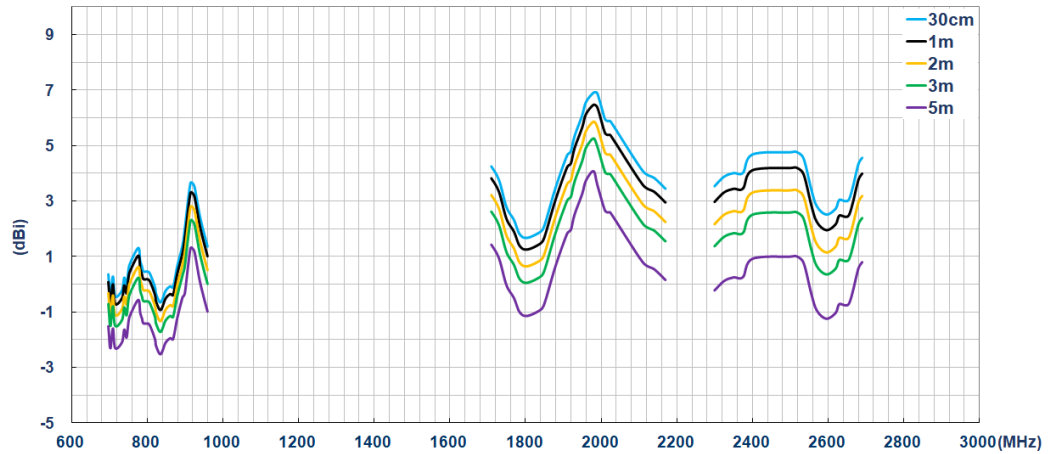


Average Gain (dBi) - LTE MIMO1

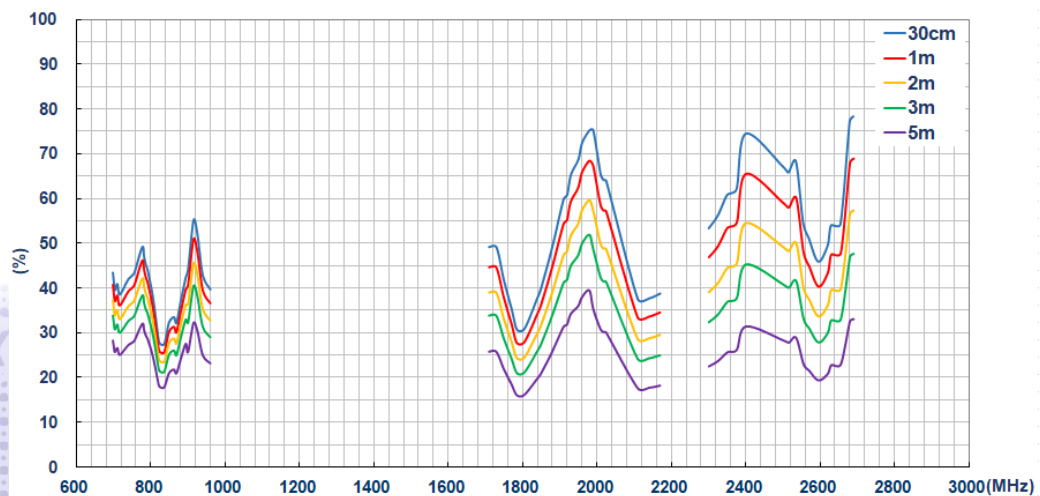


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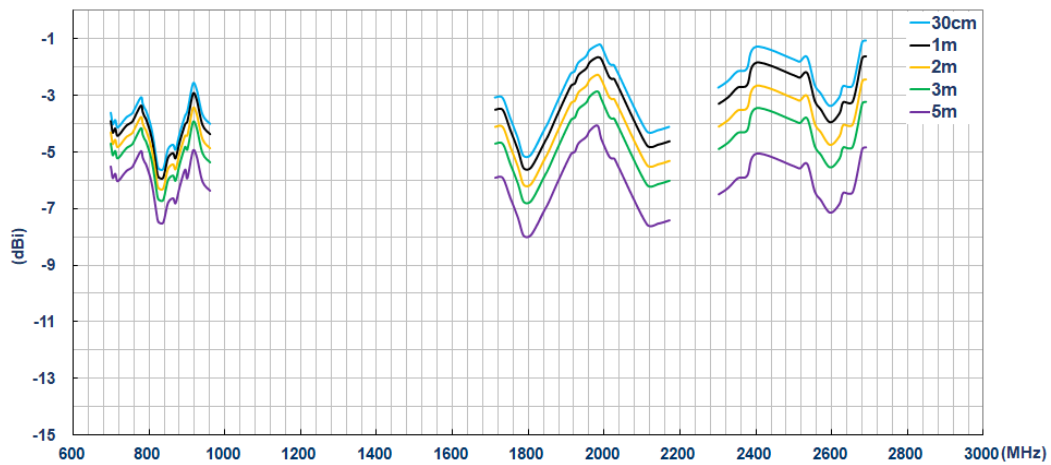
Peak Gain (dBi) –LTE MIMO1



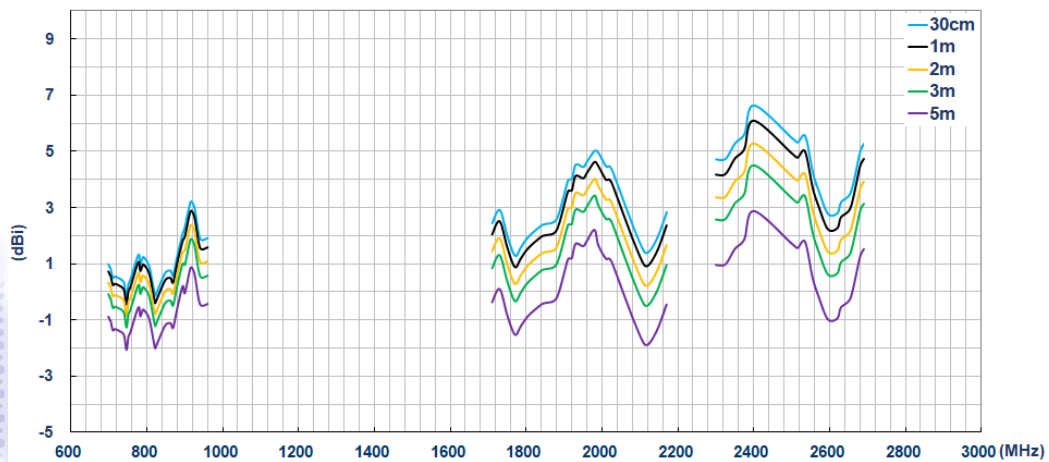
On the 30*30cm Ground Plane
Efficiency (%) –LTE MIMO2



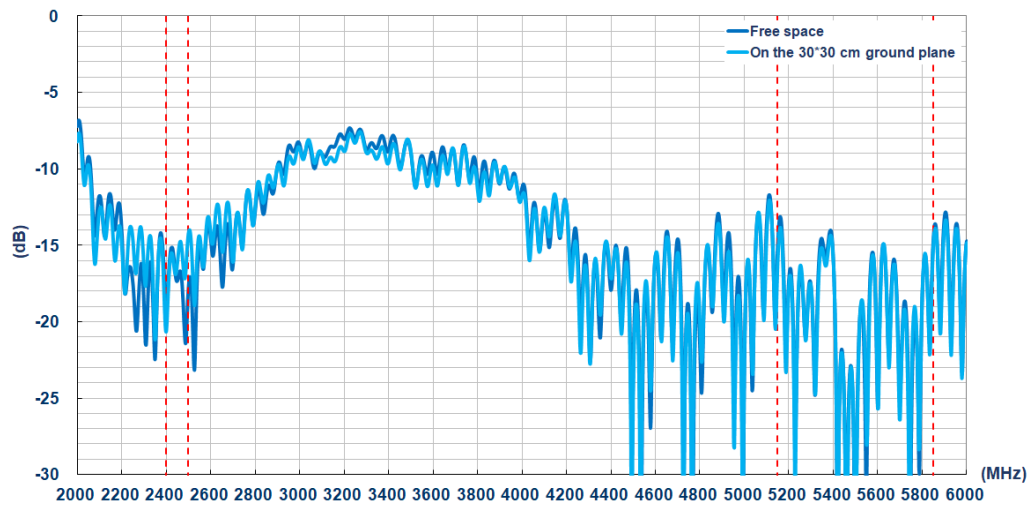
Average Gain (dBi) - LTE MIMO2



Peak Gain (dBi) -LTE MIMO2



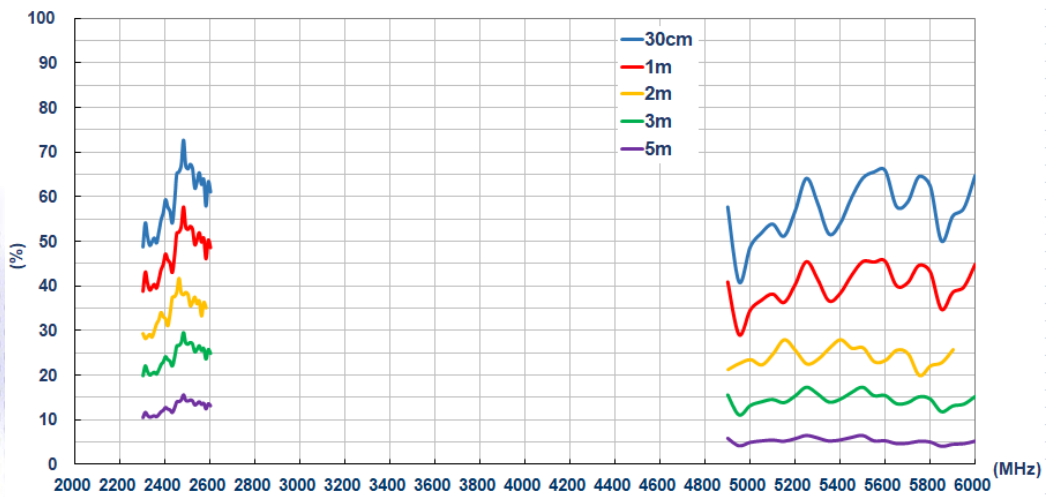
S11 (dB) - WiFi



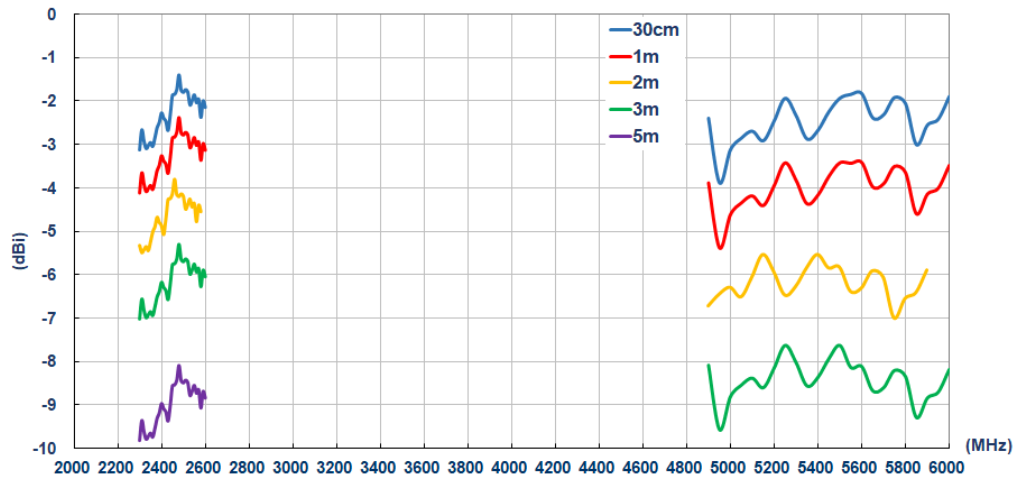
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Free Space

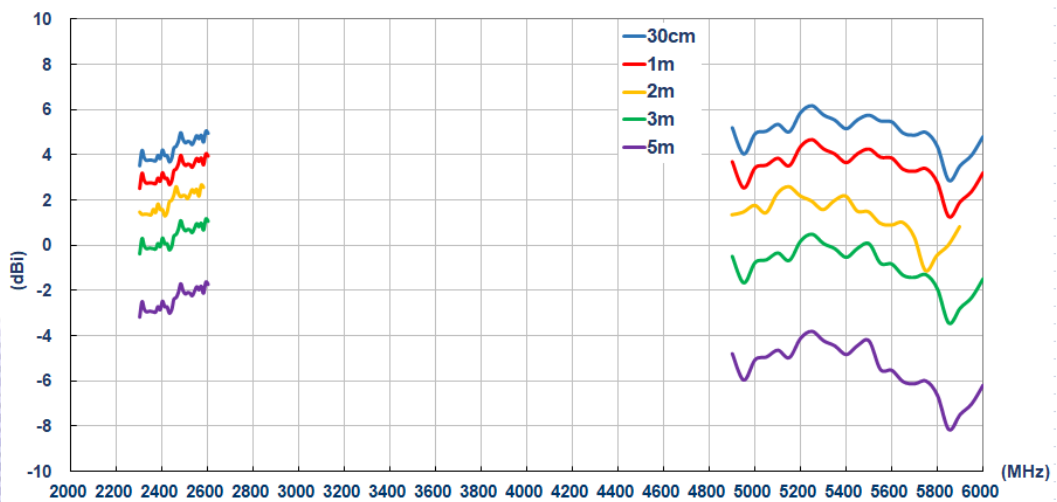
Efficiency (%) - WiFi



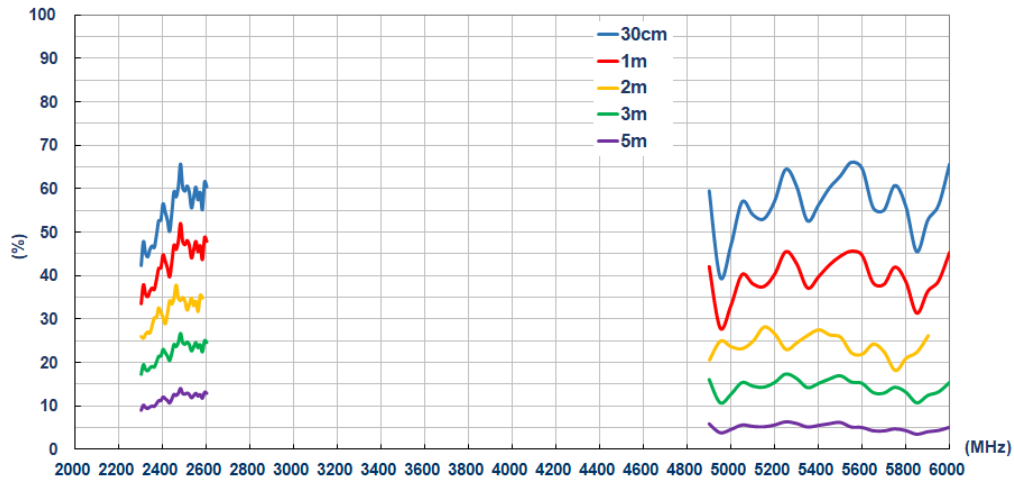
Average Gain (dBi) – WiFi



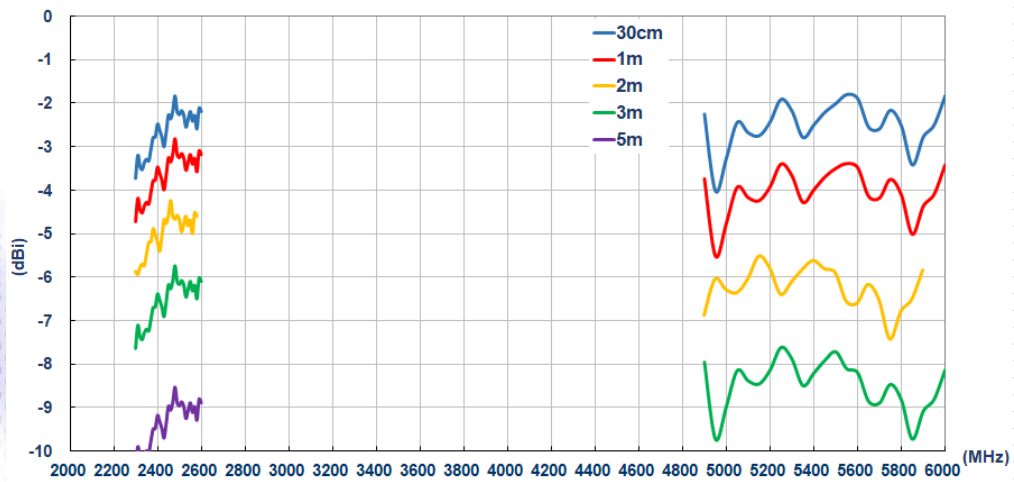
Peak Gain (dBi) – WiFi



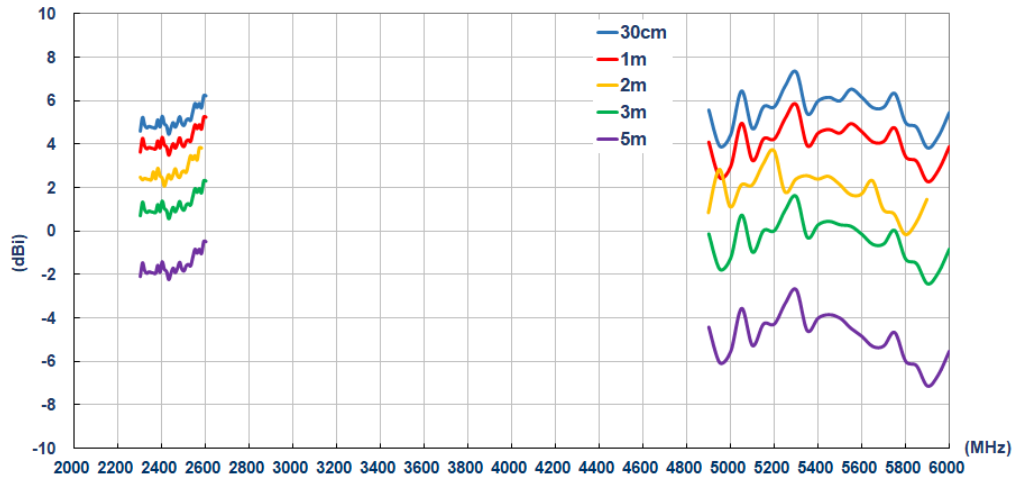
On the 30*30cm Ground Plane
Efficiency (%) – WiFi



Average Gain (dBi) – WiFi



Peak Gain (dBi) – WiFi

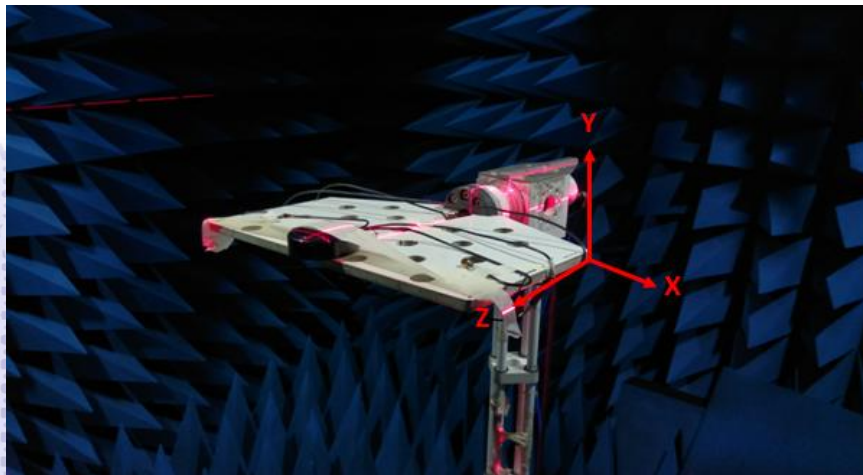


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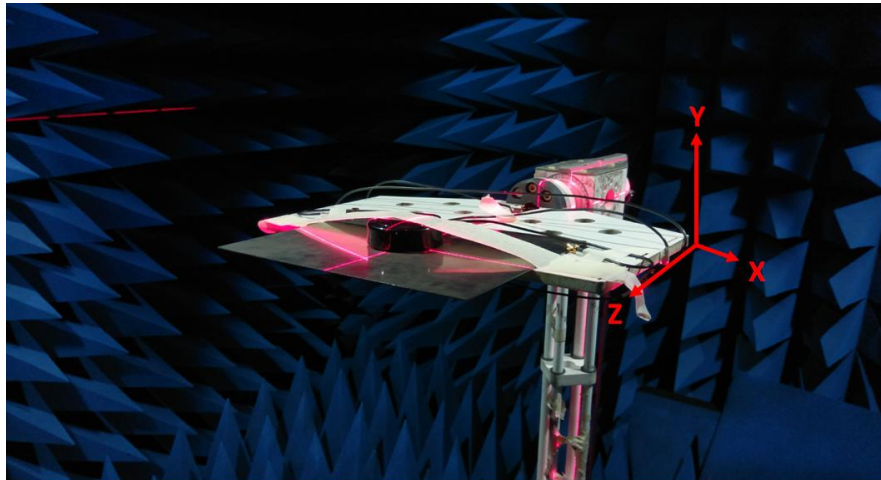
III. Antenna Radiation Pattern Measurement:

The antenna radiation patterns were measured in Anechoic Chamber.
The measurement setup as below,

Free Space



On the 30*30cm Ground Plane

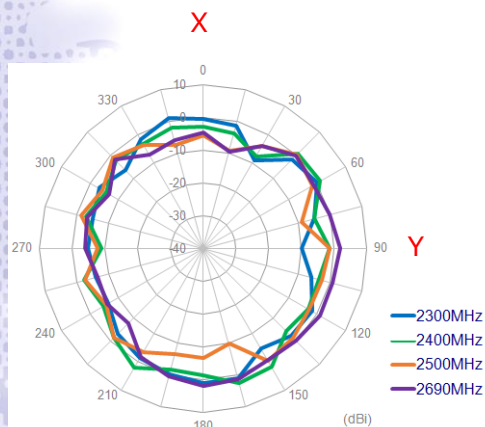
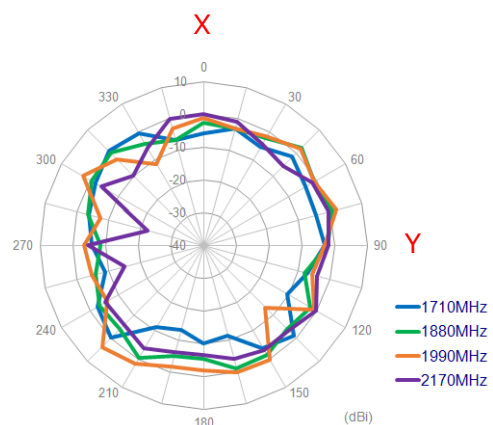
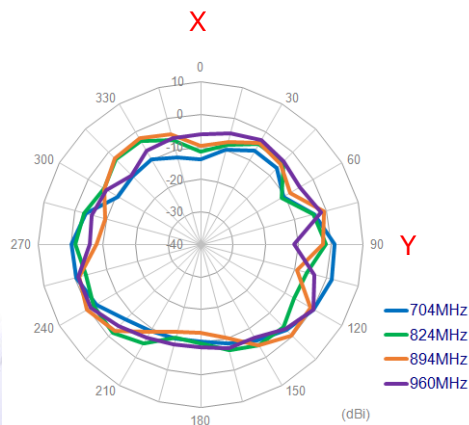


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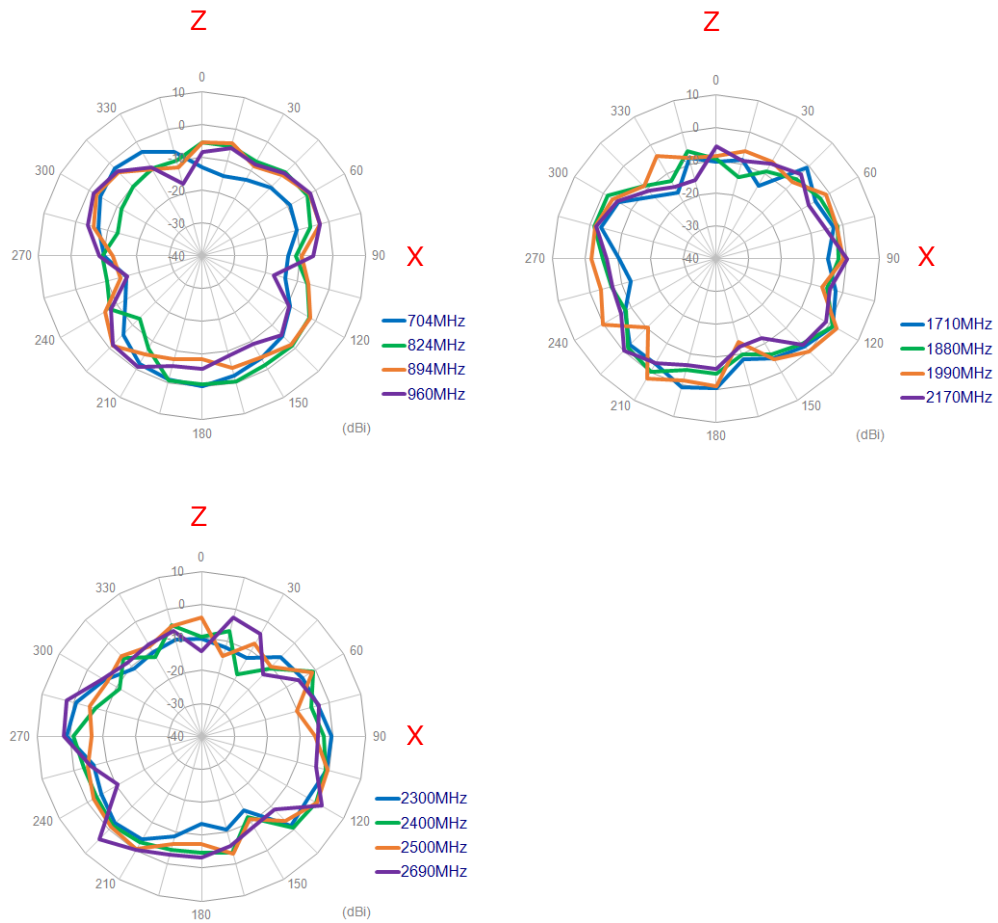
IV. 2D Radiation Pattern:

Free Space – LTE MIMO1

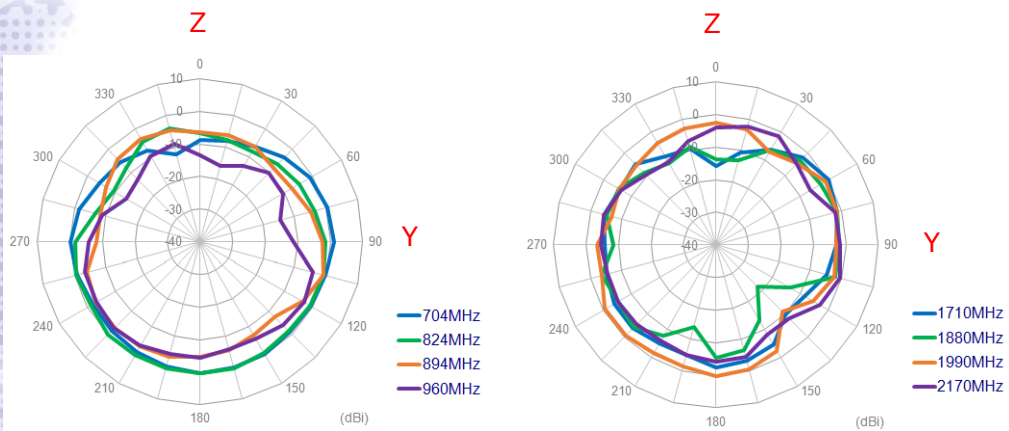
X-Y Plane



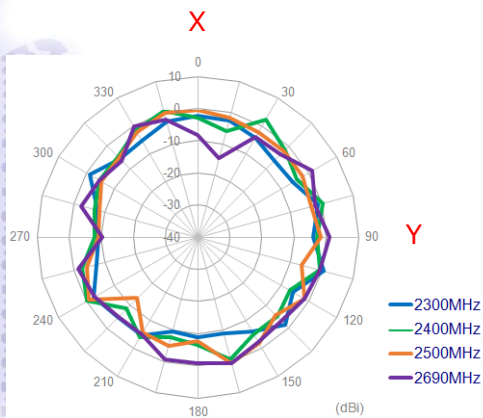
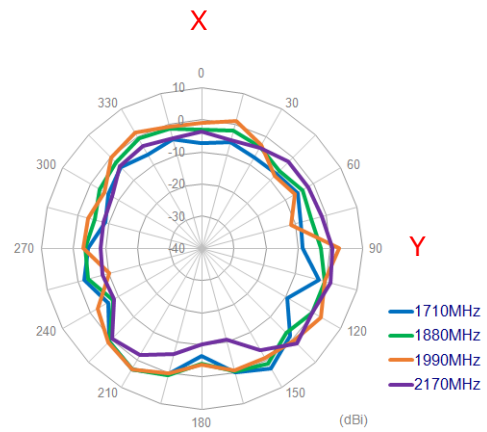
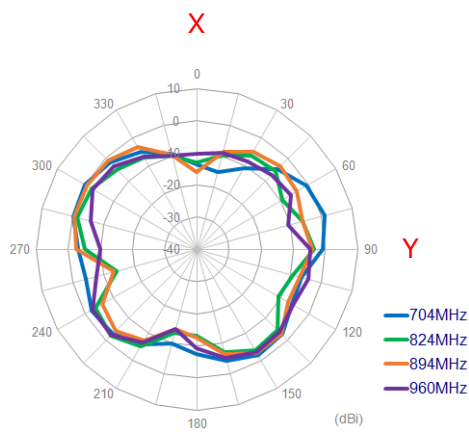
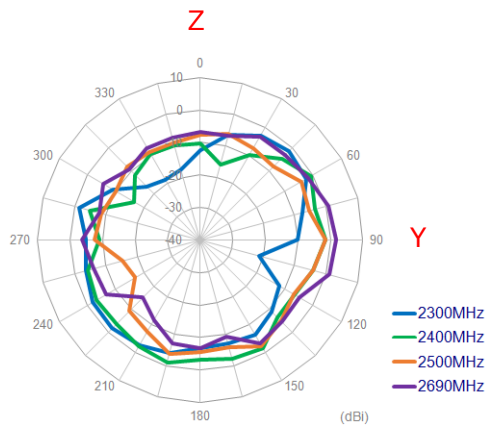
X-Z Plane



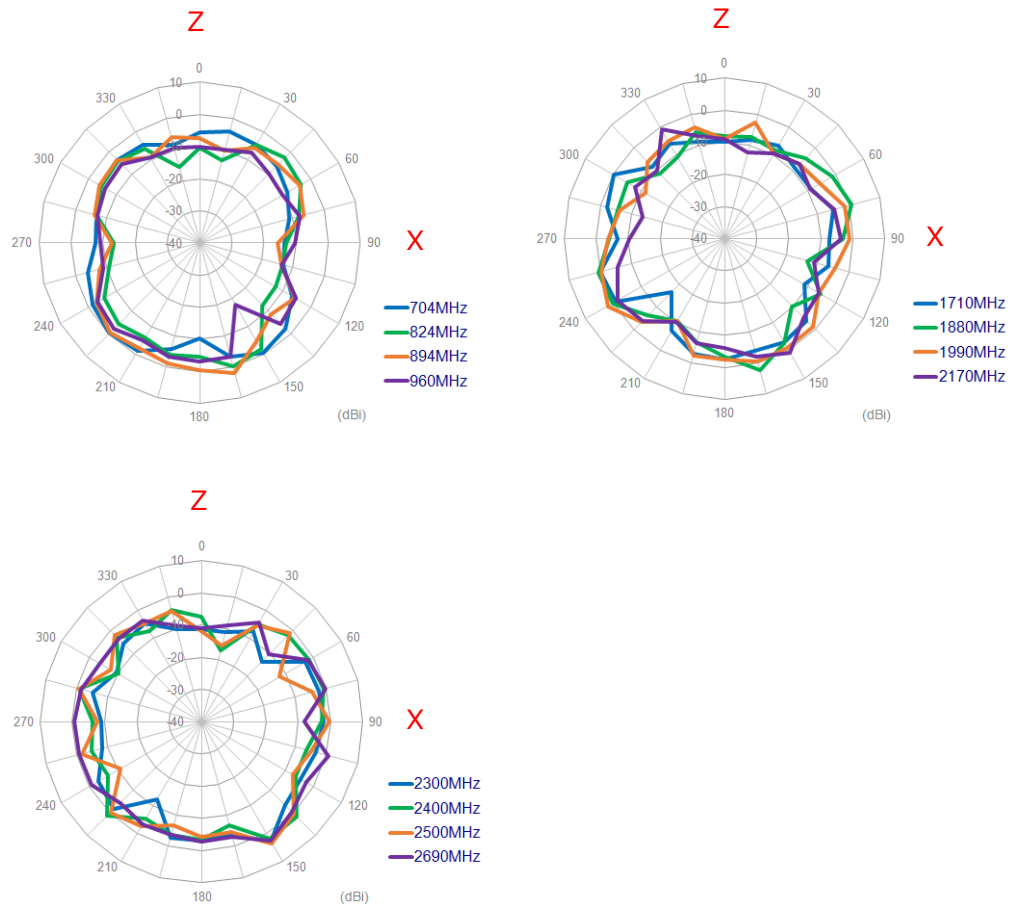
Y-Z Plane



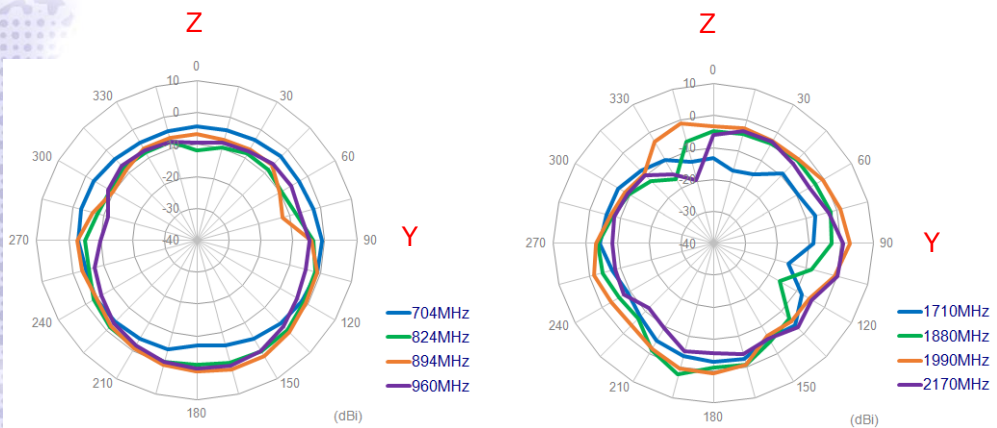
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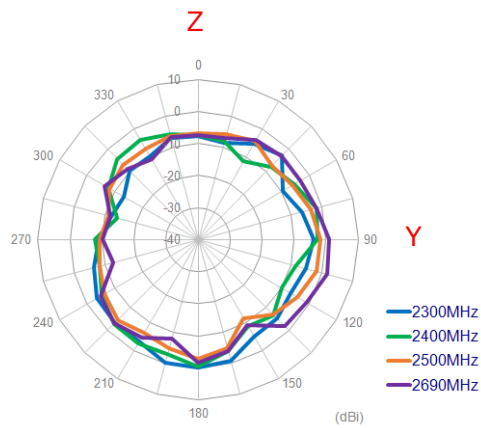
X-Z Plane



Y-Z Plane

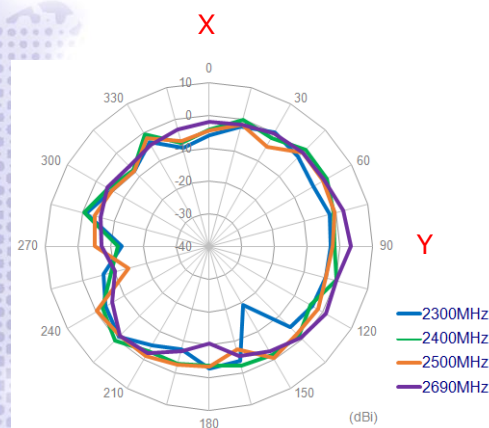
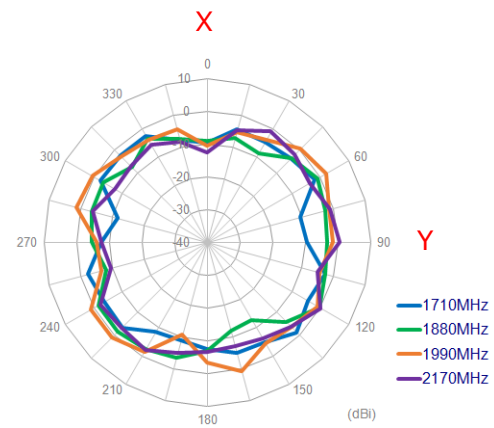
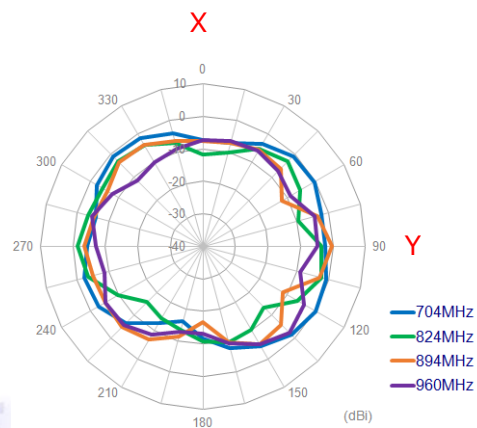


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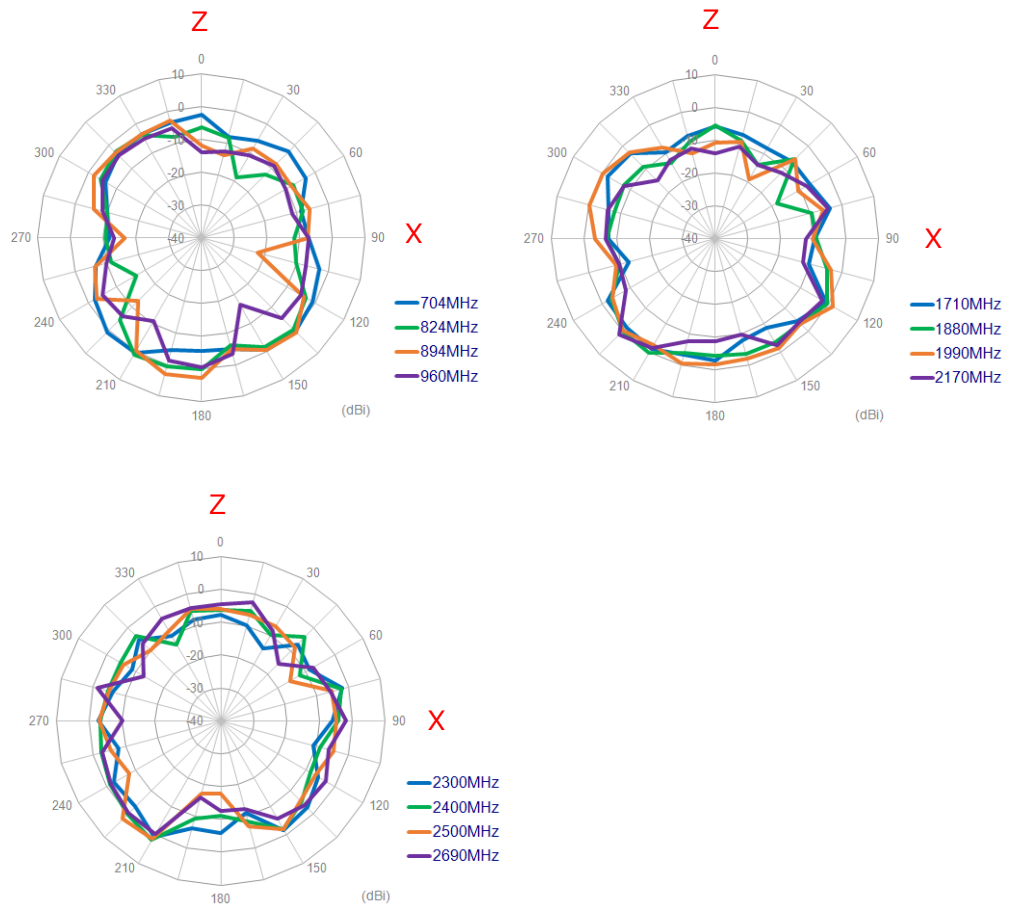


On the 30*30cm Ground Plane – LTE MIMO1

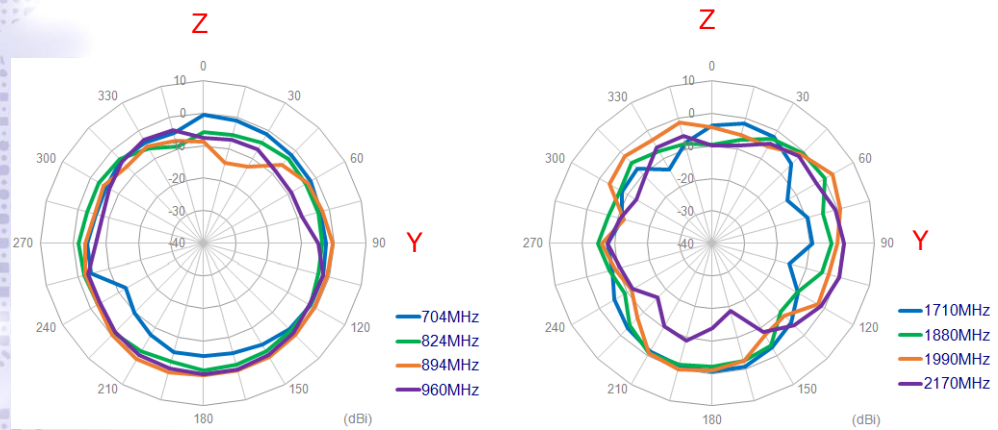
X-Y Plane



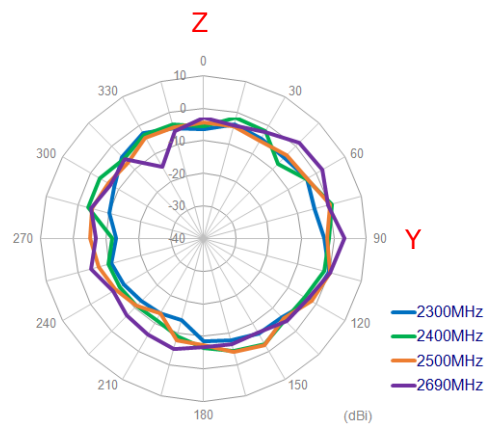
X-Z Plane



Y-Z Plane

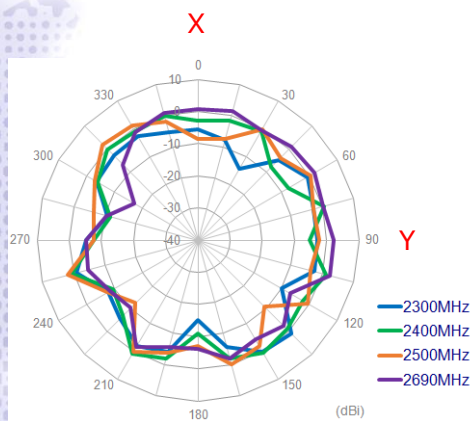
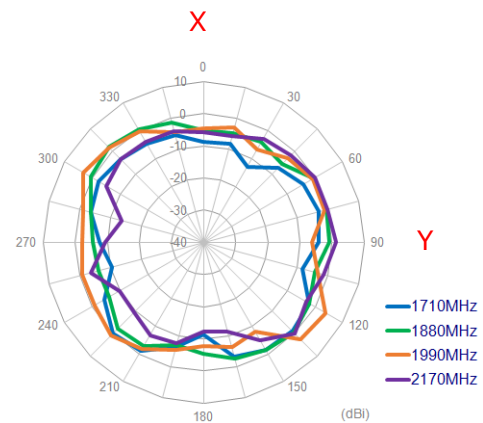
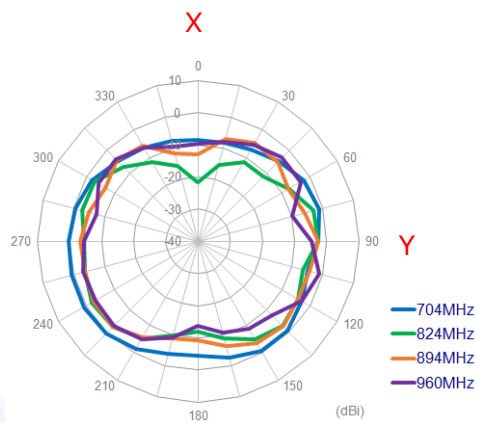


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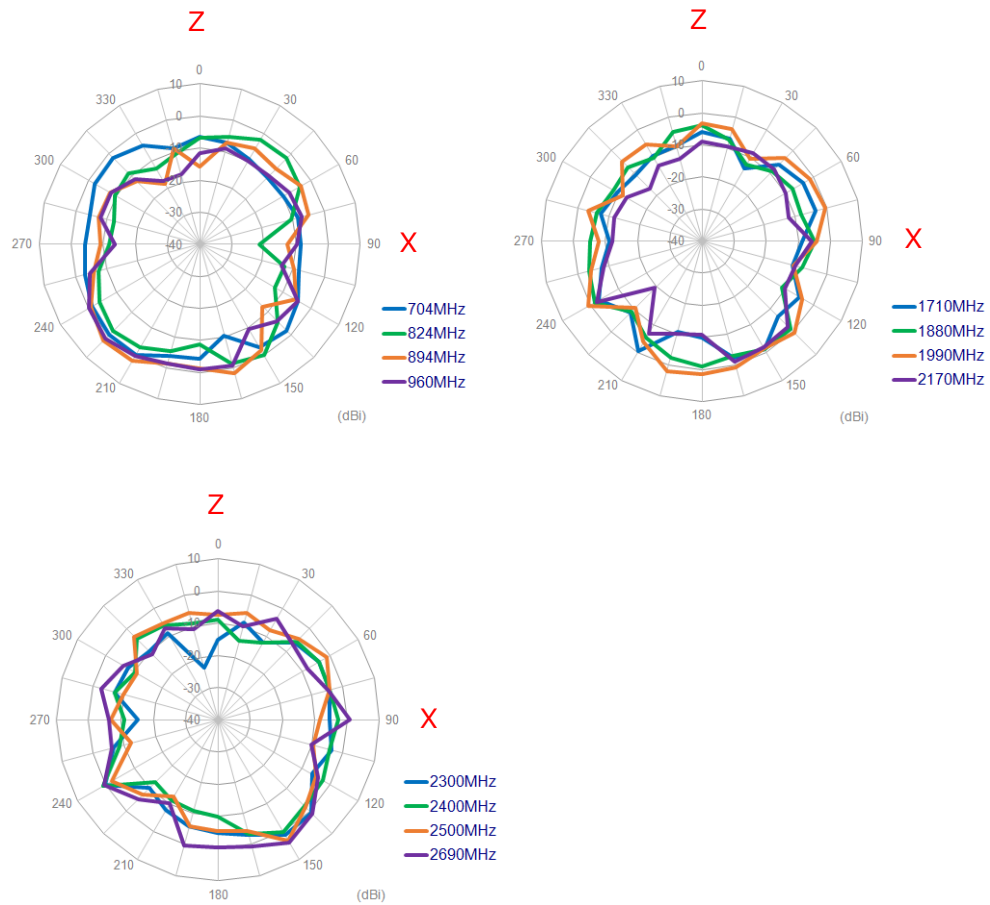


On the 30*30cm Ground Plane – LTE MIMO2

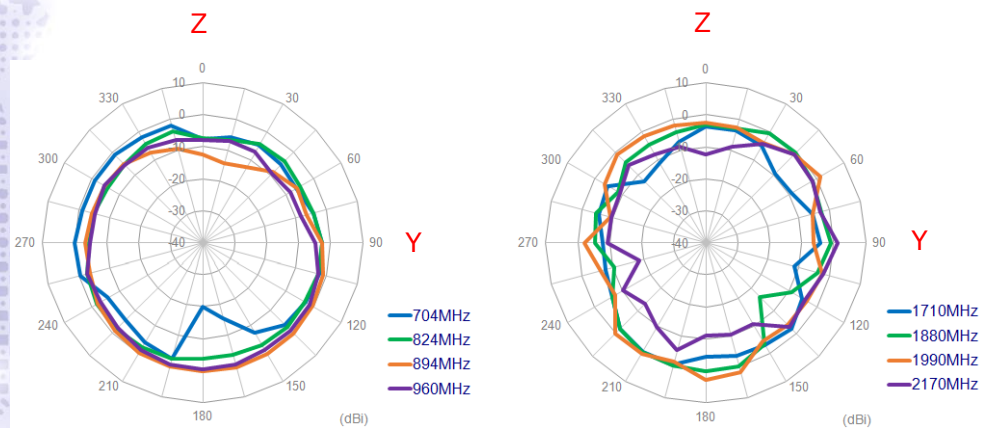
X-Y Plane



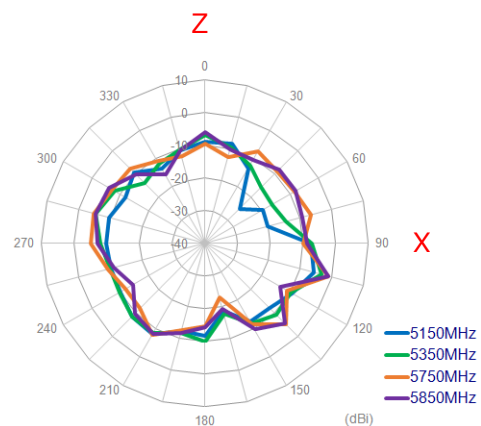
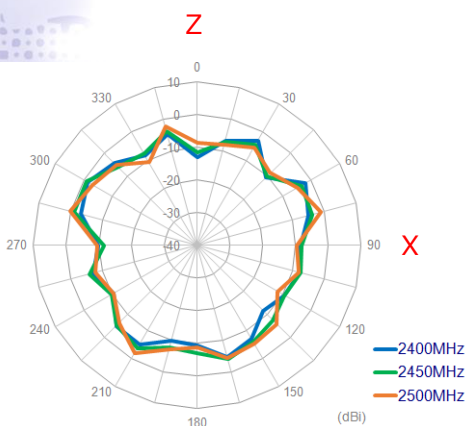
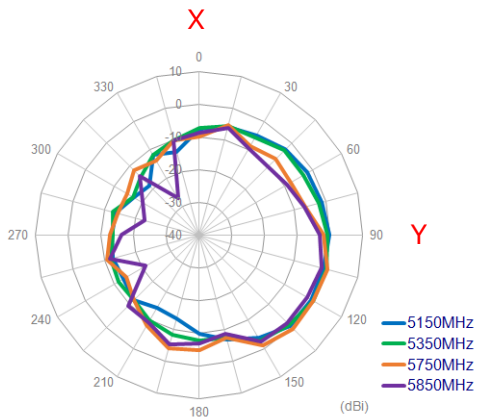
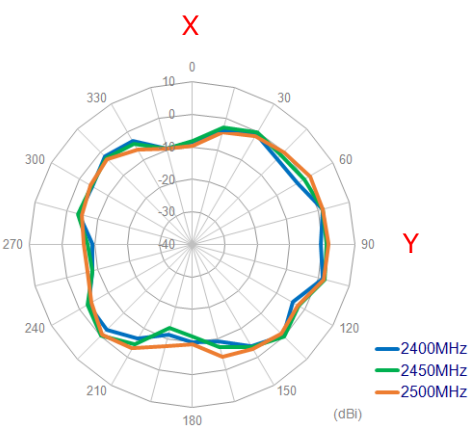
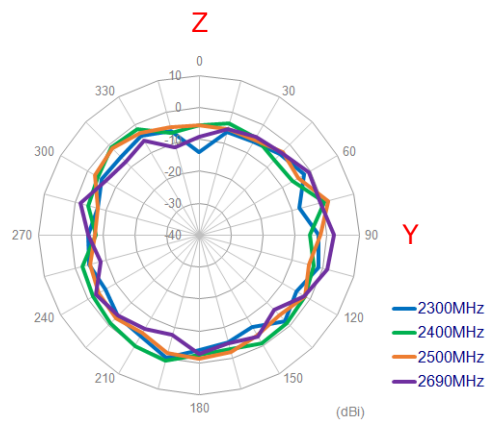
X-Z Plane



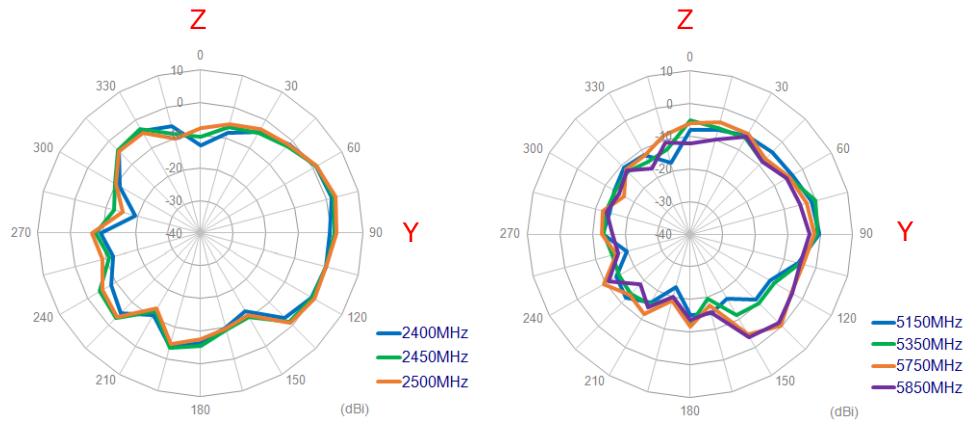
Y-Z Plane



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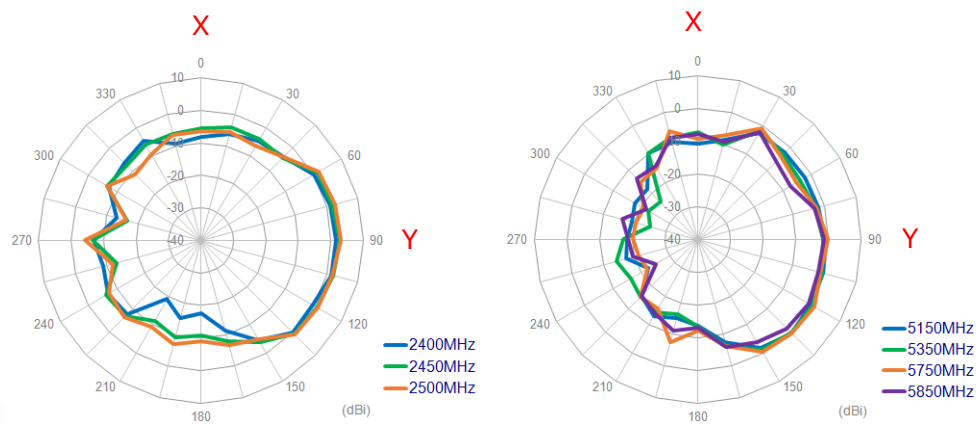


Y-Z Plane

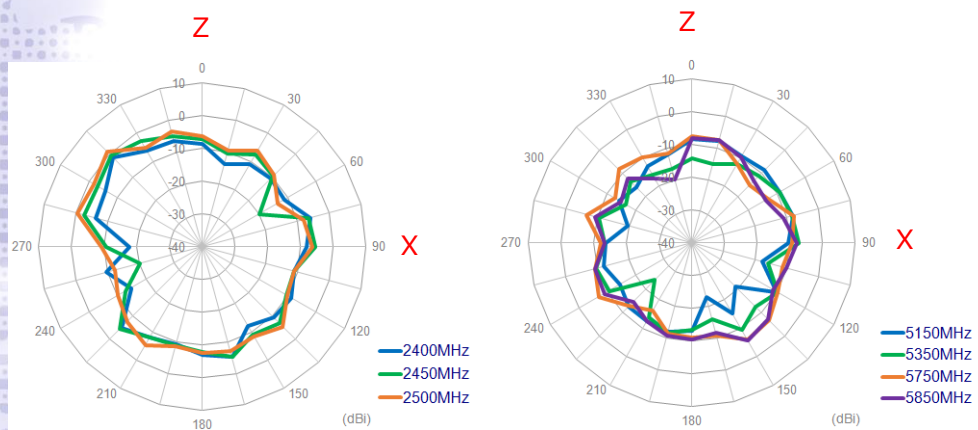


On the 30*30cm Ground Plane - WiFi

X-Y Plane

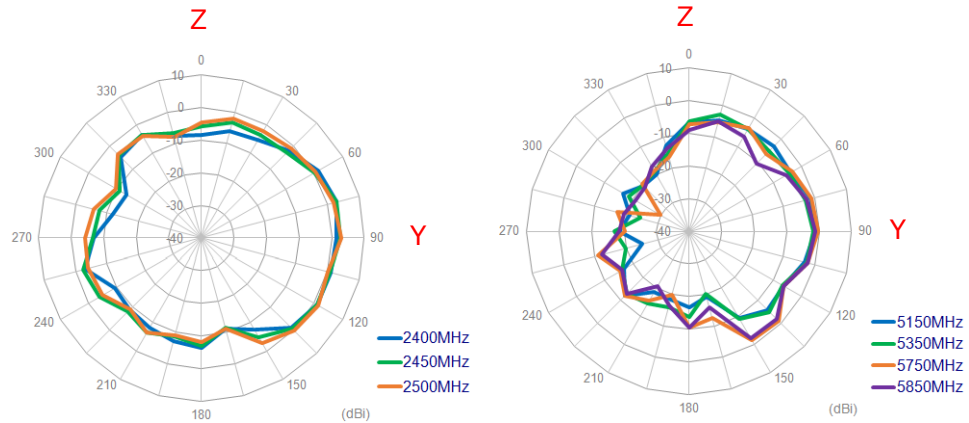


X-Z Plane



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Y-Z Plane

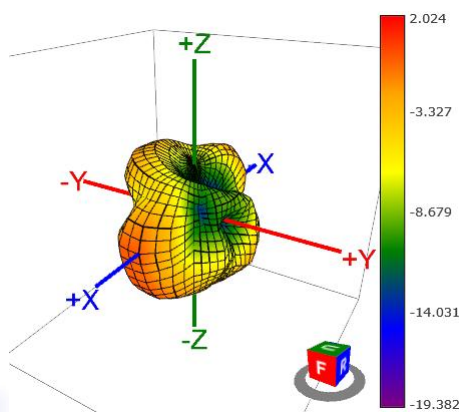


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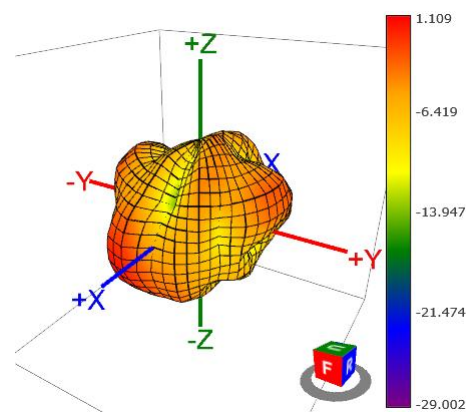
V. 3D Radiation Pattern:

Free Space – LTE MIMO1

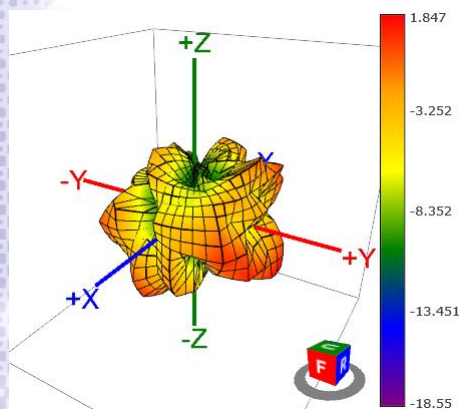
704MHz (dBi)



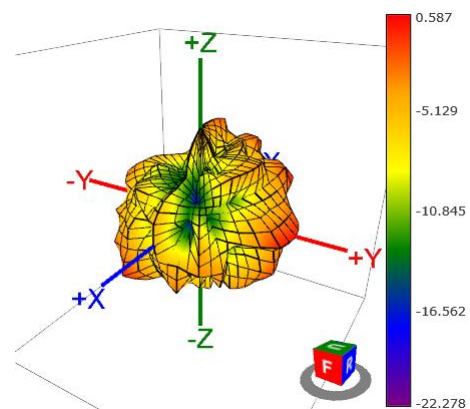
960MHz (dBi)



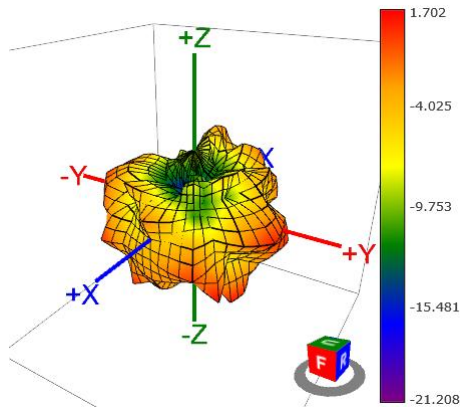
1710MHz (dBi)



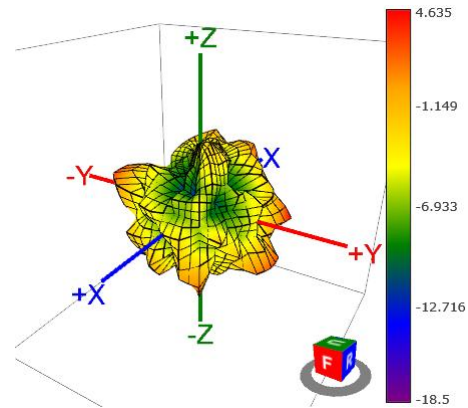
2170MHz (dBi)



2300MHz (dBi)

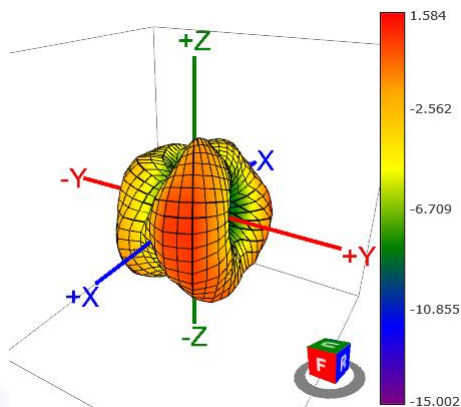


2690MHz (dBi)

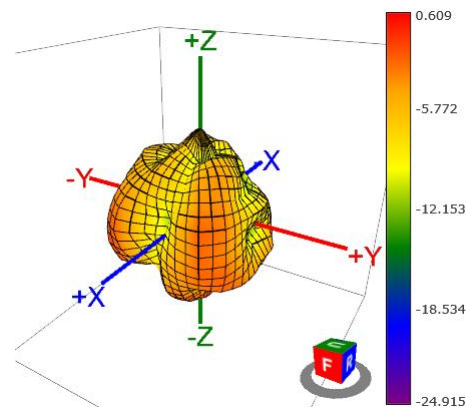


Free Space – LTE MIMO2

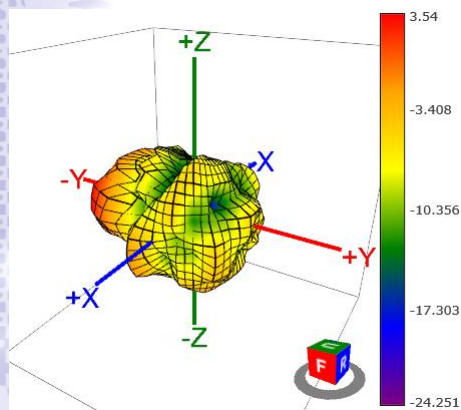
704MHz (dBi)



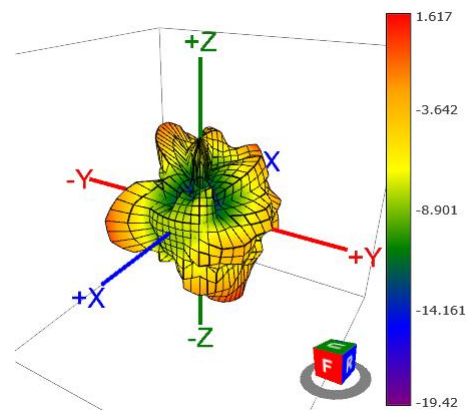
960MHz (dBi)



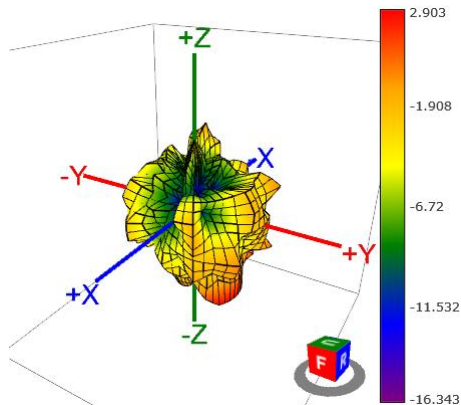
1710MHz (dBi)



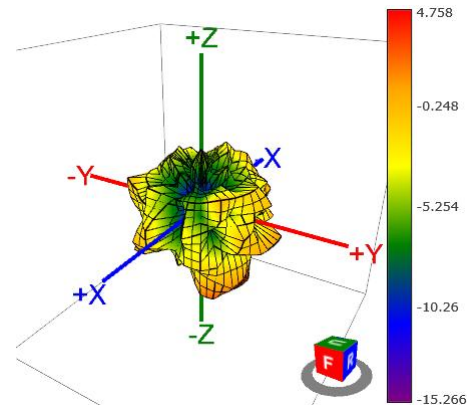
2170MHz (dBi)



2300MHz (dBi)

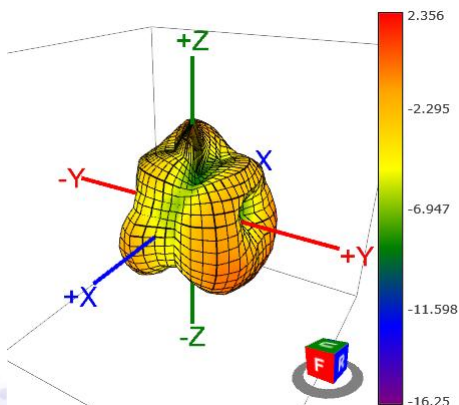


2690MHz (dBi)

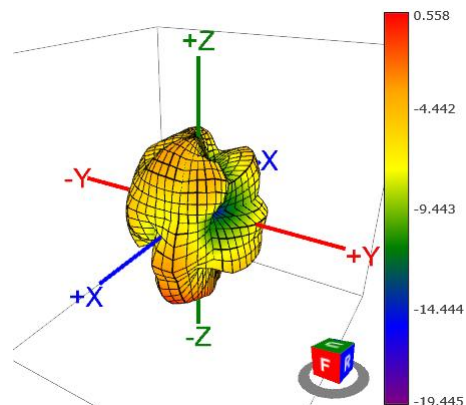


On the 30*30cm Ground Plane – LTE MIMO1

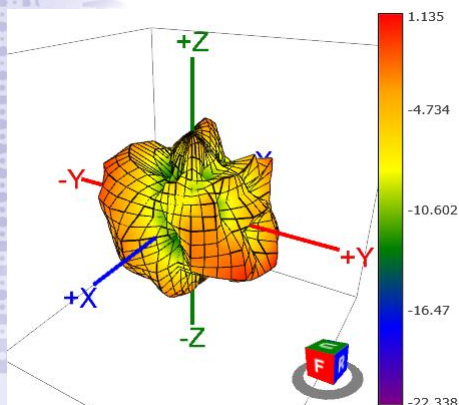
704MHz (dBi)



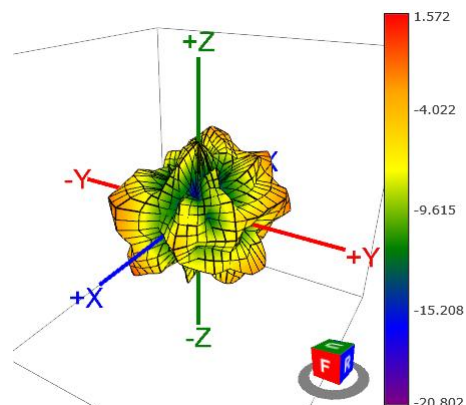
960MHz (dBi)



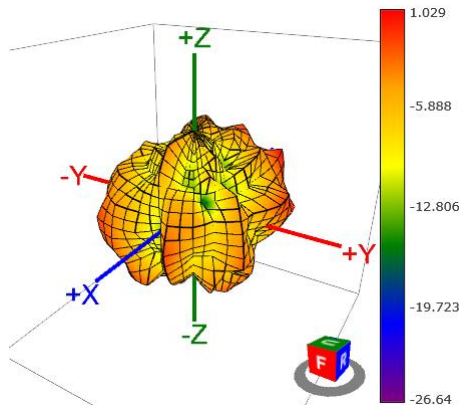
1710MHz (dBi)



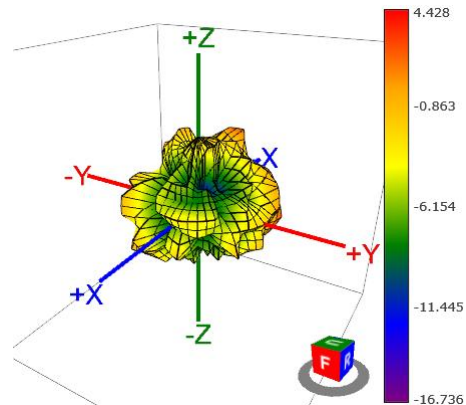
2170MHz (dBi)



2300MHz (dBi)

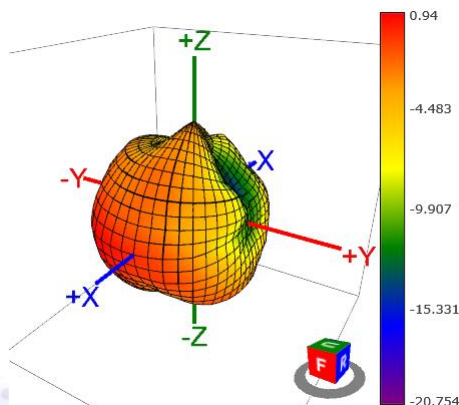


2690MHz (dBi)

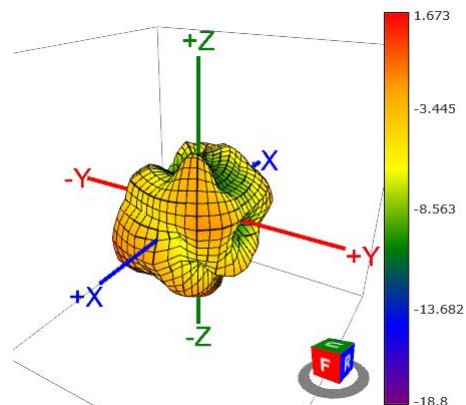


On the 30*30cm Ground Plane – LTE MIMO2

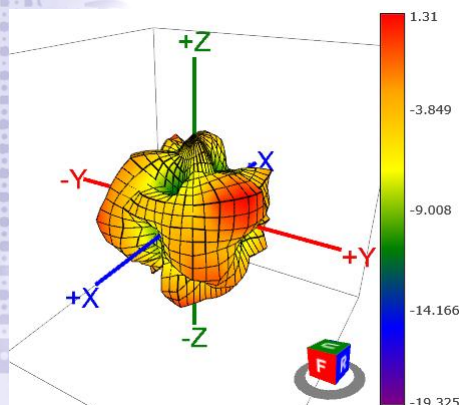
704MHz (dBi)



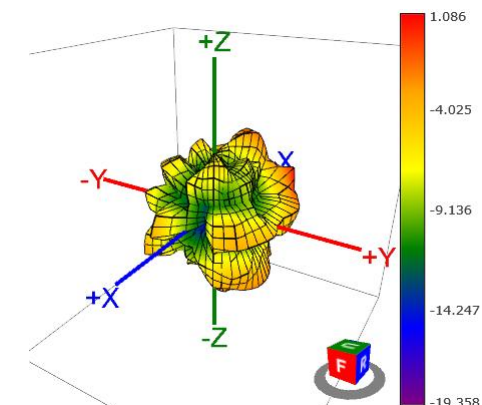
960MHz (dBi)



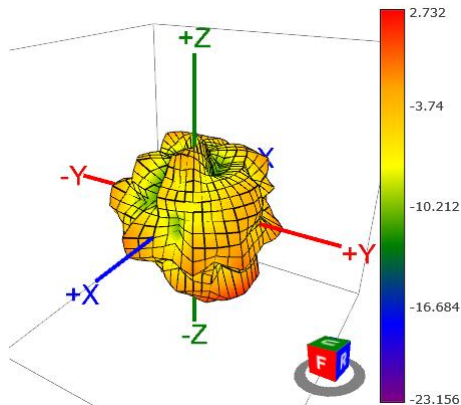
1710MHz (dBi)



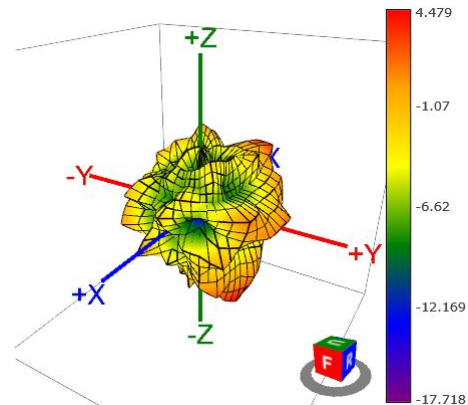
2170MHz (dBi)



2300MHz (dBi)

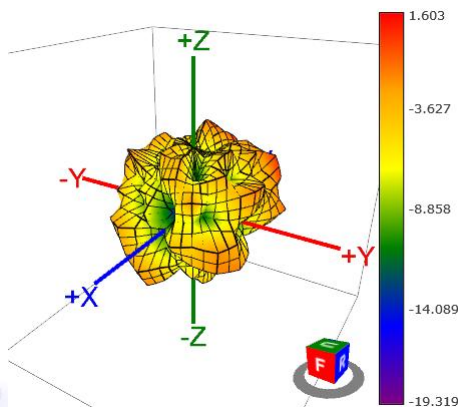


2690MHz (dBi)

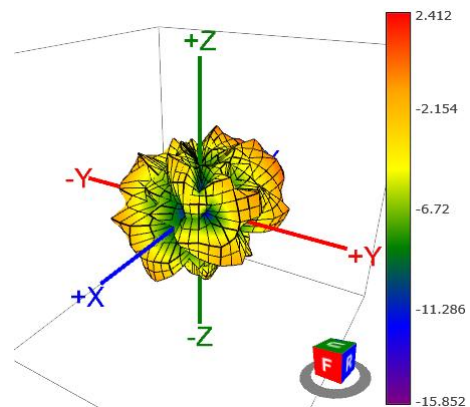


Free Space - WiFi

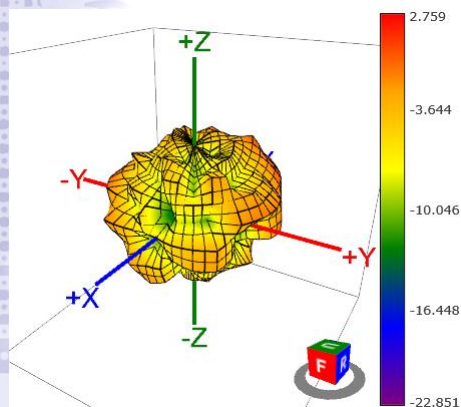
2400MHz (dBi)



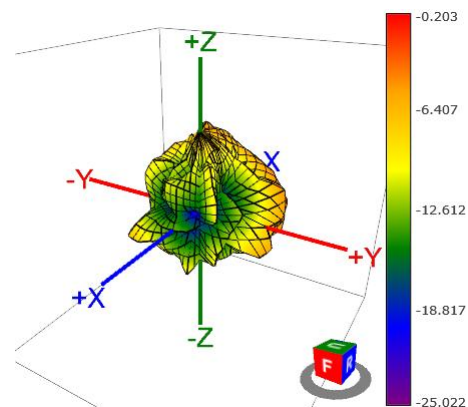
2450MHz (dBi)



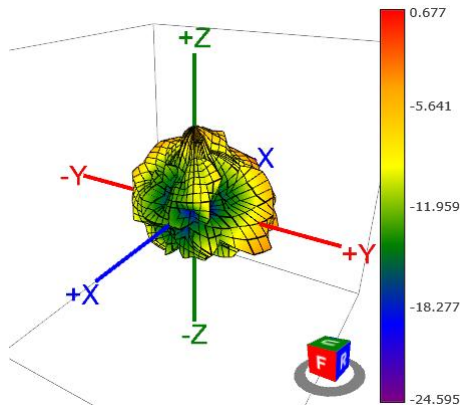
2500MHz (dBi)



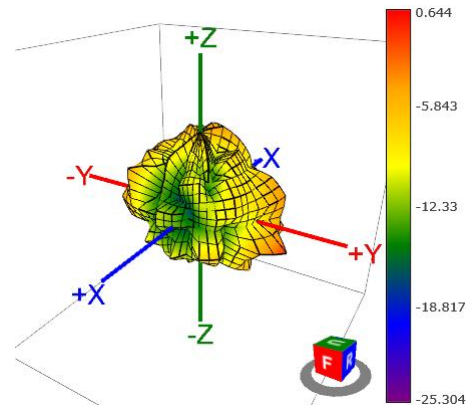
5150MHz (dBi)



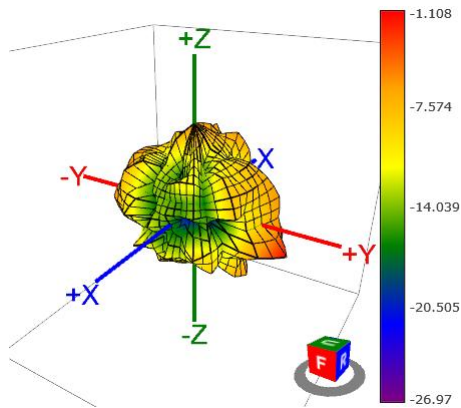
5350MHz (dBi)



5750MHz (dBi)

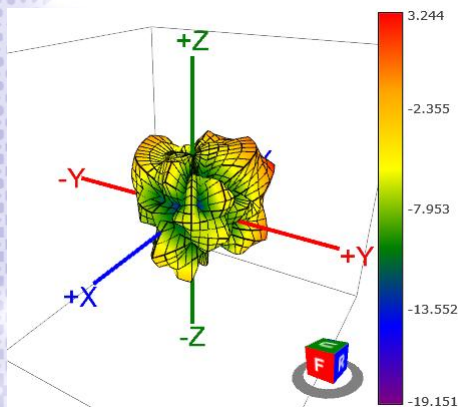


5850MHz (dBi)

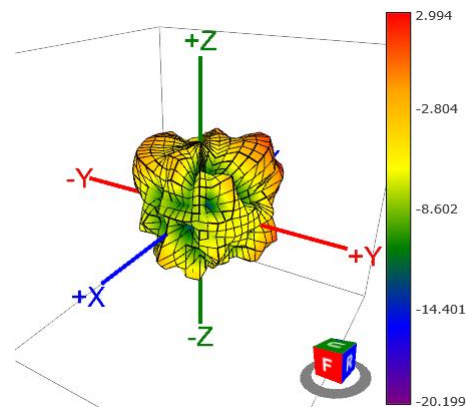


On the 30*30cm Ground Plane - WiFi

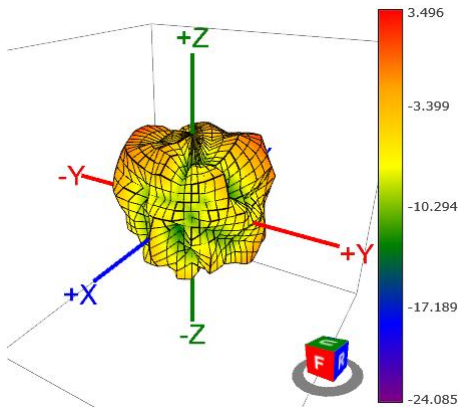
2400MHz (dBi)



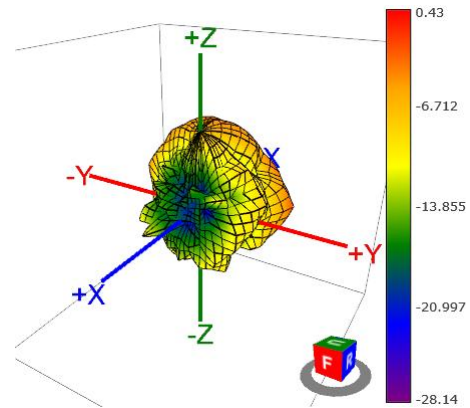
2450MHz (dBi)



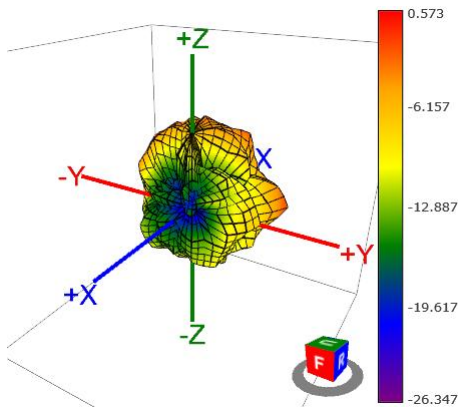
2500MHz (dBi)



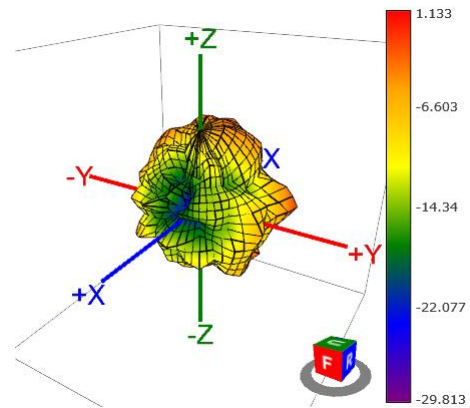
5150MHz (dBi)



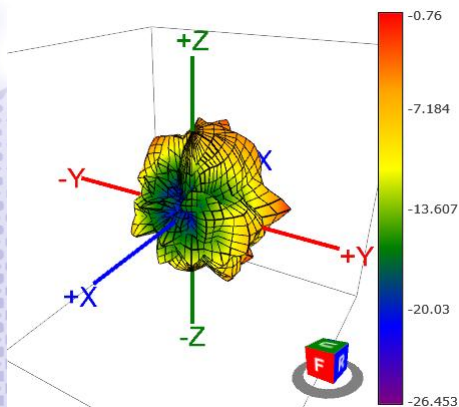
5350MHz (dBi)



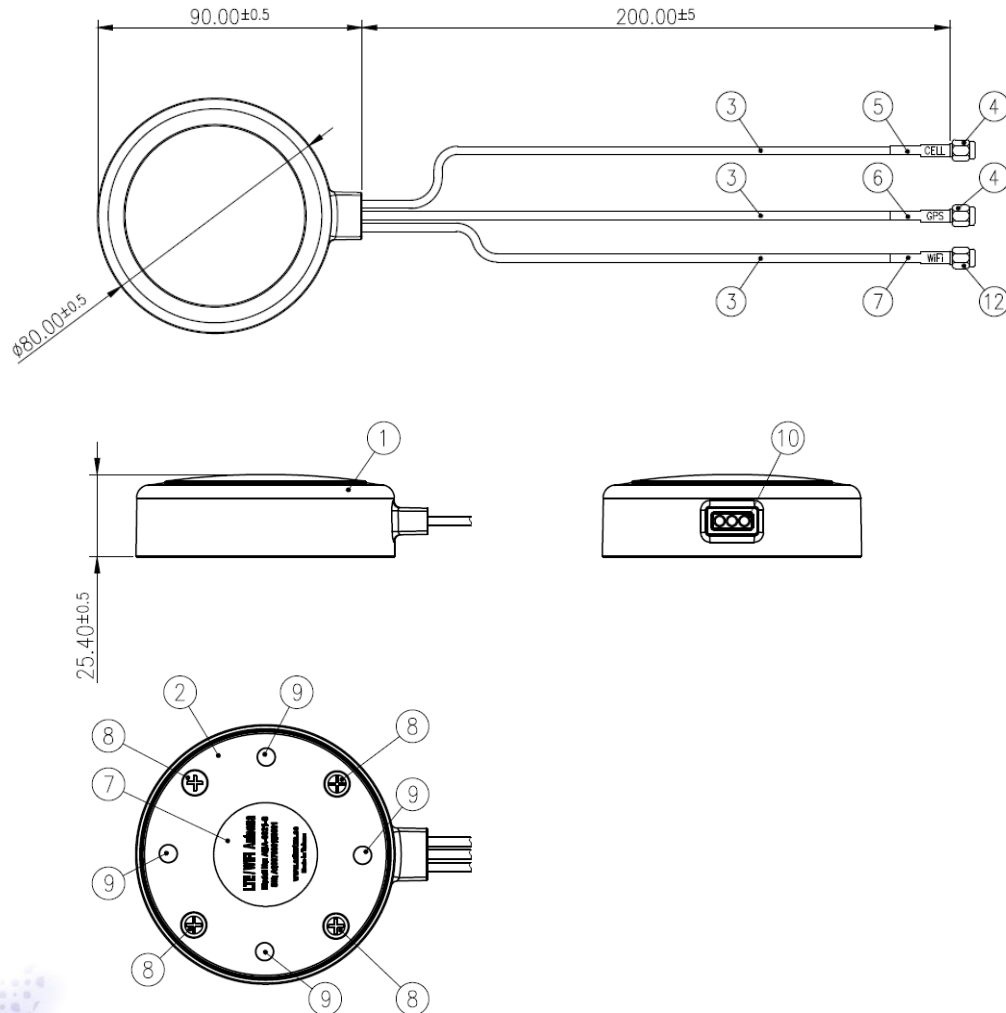
5750MHz (dBi)



5850MHz (dBi)



VI. Mechanical Drawing (Unit:mm):



12	RP-SMA(M) Connector	Brass	Au Plated	1
11	Cable Rubber	EPDM	Black	1
10	Slip Rubber	Silicone	Black	4
9	Screw	Stainless Steel	Cr	4
8	Label	PET	Silver	1
7	WiFi Heat Shrink Tube	CTMS	Yellow	1
6	GPS Heat Shrink Tube	CTMS	Blue	1
5	CELL Heat Shrink Tube	CTMS	White	1
4	SMA(M) Connector	Brass	Au Plated	2
3	Cable H-100	PVC	Black	3
2	SU6S Bottom Base	Zinc Alloy	Ni Plated	1
1	SU6S Top Housing	PC+ABS	Black	1
No	NAME	MATERIAL	FINISH	Q'TY

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