

Specification-Ant 1

■ Electrical Properties:

1. Frequency : 2400MHz ~ 2500MHz
2. Impedance : 50Ω
3. V.S.W.R. : ≤ 2.5
4. Peak Gain: 4.79 dBi

■ Physical Properties :

1. Material : FR-4(緑漆) T=230mm
2. Connector : I-PEX
3. Cable : D1.13 normal BLACK
4. Operation temperature : $-40^{\circ}\text{C} \sim +65^{\circ}\text{C}$
5. Storage temperature : $-20^{\circ}\text{C} \sim +65^{\circ}\text{C}$

Specification-Ant 2

■ Electrical Properties:

1. Frequency : 5150MHz ~ 5850MHz
2. Impedance : 50Ω
3. V.S.W.R. : ≤ 2.5
4. Peak Gain: 4.56dBi

■ .Physical Properties :

1. Material : FR-4 T=160mm
2. Connector : I-PEX
3. Cable : D1.13 normal BLACK
4. Operation temperature : $-40^{\circ}\text{C} \sim +65^{\circ}\text{C}$
5. Storage temperature : $-20^{\circ}\text{C} \sim +65^{\circ}\text{C}$

Specification-Ant 3

■ Electrical Properties:

1. Frequency : 2400MHz ~ 2500MHz
2. Impedance : 50Ω
3. V.S.W.R. : ≤ 2.5
4. Peak Gain: 4.37 dBi

■ Physical Properties :

1. Material : FR-4 T=120mm
2. Connector : I-PEX
3. Cable : D1.13 normal BLACK
4. Operation temperature : $-40^{\circ}\text{C} \sim +65^{\circ}\text{C}$
5. Storage temperature : $-20^{\circ}\text{C} \sim +65^{\circ}\text{C}$

Specification-Ant 4

■ Electrical Properties:

1. Frequency : 5150MHz ~ 5850MHz
2. Impedance : 50Ω
3. V.S.W.R. : ≤ 2.5
4. Peak Gain: 4.9 dBi

■ .Physical Properties :

1. Material : FR-4(綠漆) T=60mm
2. Connector : I-PEX
3. Cable : D1.13 normal BLACK
4. Operation temperature : $-40^{\circ}\text{C} \sim +65^{\circ}\text{C}$
5. Storage temperature : $-20^{\circ}\text{C} \sim +65^{\circ}\text{C}$



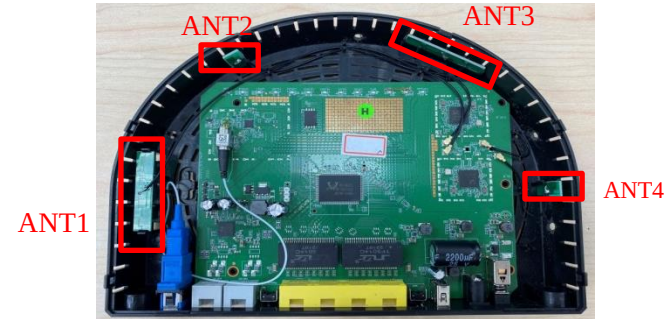
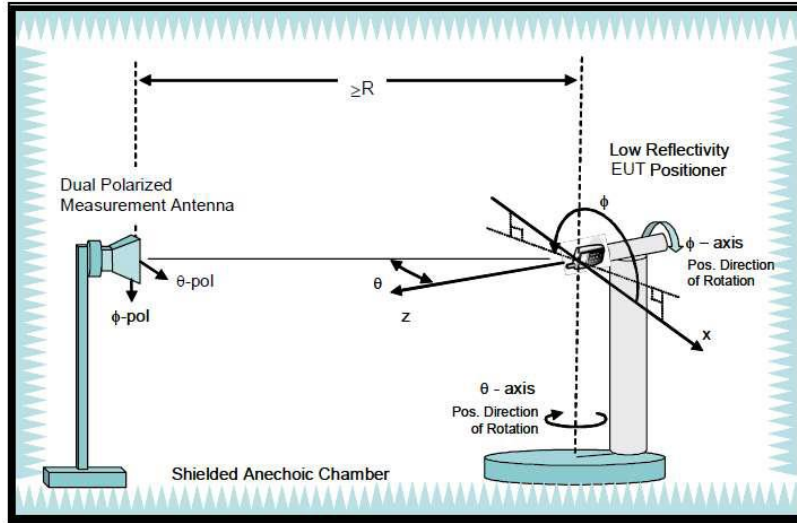
Pro Brand Technology (TW) Inc.

H510 test report - passive

Nikki

2022.10.7

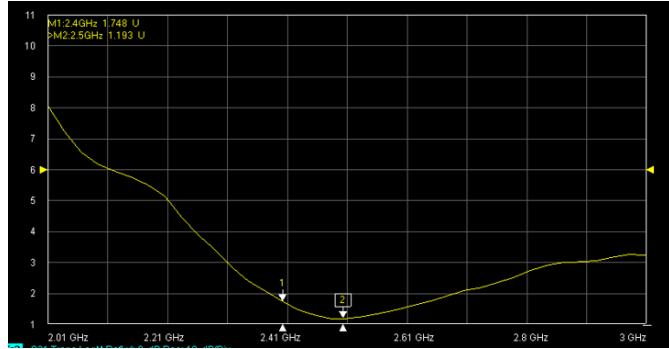
Antenna Coordinate System Definition



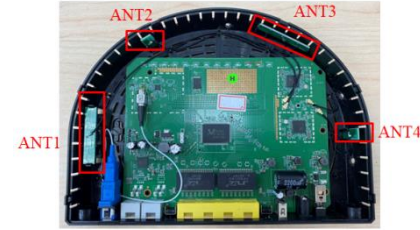
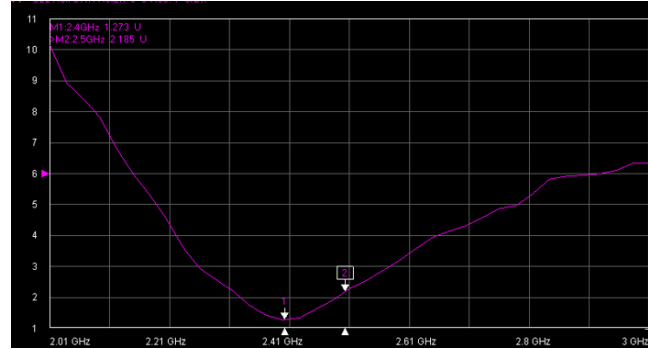
- ANT 1: 2.4GHz ~ 2.5GHz
- ANT 2: 5.15GHz ~ 5.85GHz
- ANT 3: 2.4GHz ~ 2.5GHz
- ANT 4: 5.15GHz ~ 5.85GHz

VSWR

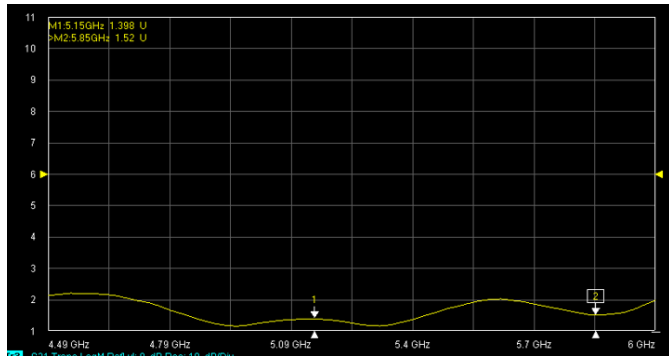
■ ANT1 (2.4GHz~2.5GHz)



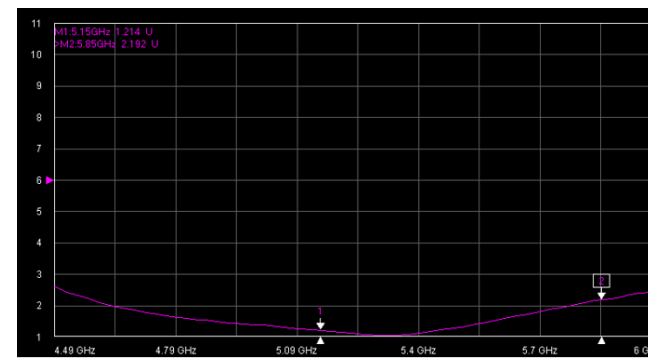
■ ANT3 (2.4GHz~2.5GHz)



■ ANT2 (5.15GHz~5.85GHz)

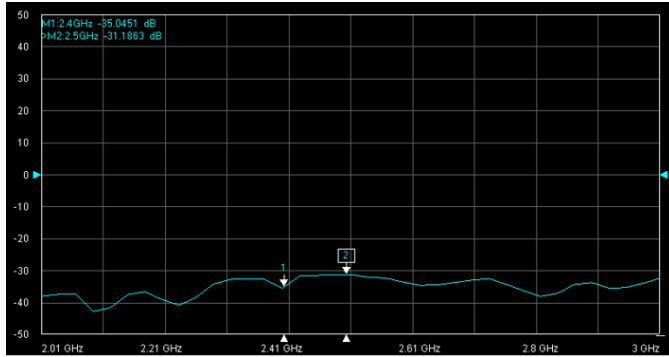


■ ANT4 (5.15GHz~5.85GHz)

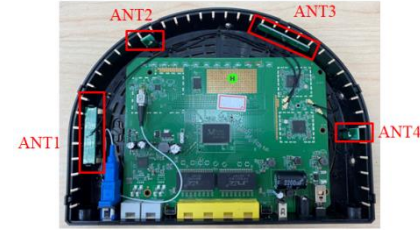
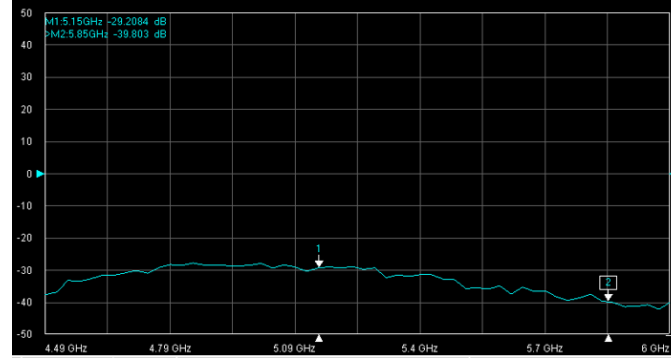


Isolation

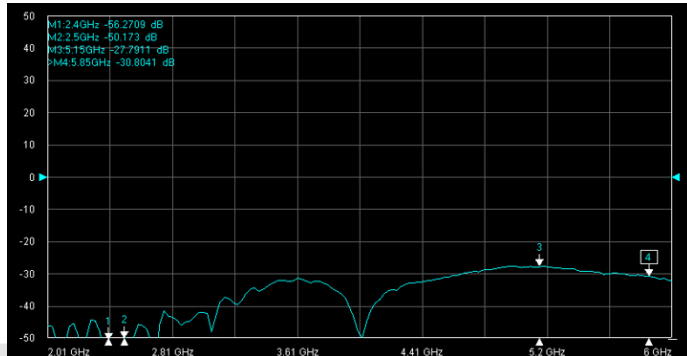
■ ANT1 – ANT2 (2.4GHz~2.5GHz)



■ ANT2 – ANT4 (5.15GHz~5.85GHz)



■ ANT3 (2.4GHz-2.5GHz) – ANT4 (5.15GHz-5.85GHz)



Antenna Gain and Efficiency

■ Wi-Fi 2.4GHz-ANT1

Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Tot. Rad. Pwr. (dB)	-2.05	-1.91	-1.74	-1.60	-1.43	-1.28	-1.09	-0.95	-0.88	-0.95	-1.18
Directivity (dBi)	5.18	5.12	5.11	5.15	5.18	5.30	5.39	5.52	5.66	5.66	5.67
Efficiency (dB)	-2.05	-1.91	-1.74	-1.60	-1.43	-1.28	-1.09	-0.95	-0.88	-0.95	-1.18
Efficiency (%)	62.34	64.47	66.95	69.26	71.97	74.51	77.72	80.44	81.75	80.30	76.28
Gain (dBi)	3.13	3.21	3.37	3.56	3.76	4.03	4.29	4.58	4.79	4.71	4.49

■ Wi-Fi 2.4GHz-ANT3

Frequency (MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Tot. Rad. Pwr. (dB)	-1.06	-1.02	-0.99	-1.00	-1.00	-1.00	-0.94	-0.84	-0.79	-0.82	-0.95
Directivity (dBi)	5.00	5.08	5.16	5.25	5.28	5.27	5.23	5.21	5.16	5.17	5.18
Efficiency (dB)	-1.06	-1.02	-0.99	-1.00	-1.00	-1.00	-0.94	-0.84	-0.79	-0.82	-0.95
Efficiency (%)	78.37	79.02	79.59	79.38	79.52	79.39	80.55	82.37	83.37	82.71	80.40
Gain (dBi)	3.94	4.06	4.17	4.25	4.29	4.26	4.29	4.37	4.37	4.35	4.23

Antenna Gain and Efficiency

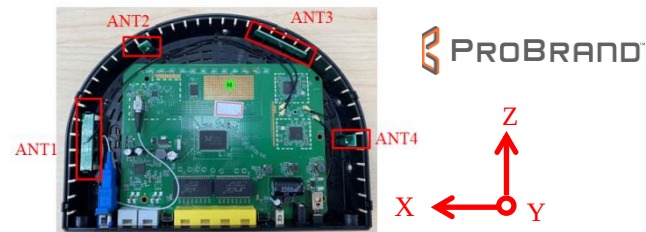
■ Wi-Fi 5GHz-ANT2

Frequency (MHz)	5150	5250	5350	5450	5550	5650	5750	5850
Tot. Rad. Pwr. (dB)	-1.78	-1.83	-1.90	-2.12	-2.50	-2.63	-2.33	-1.94
Directivity (dBi)	6.01	6.39	6.16	5.91	6.39	6.98	6.65	6.45
Efficiency (dB)	-1.78	-1.83	-1.90	-2.12	-2.50	-2.63	-2.33	-1.94
Efficiency (%)	66.32	65.58	64.53	61.34	56.25	54.58	58.46	64.03
Gain (dBi)	4.23	4.56	4.26	3.78	3.90	4.35	4.32	4.52

■ Wi-Fi 5GHz-ANT4

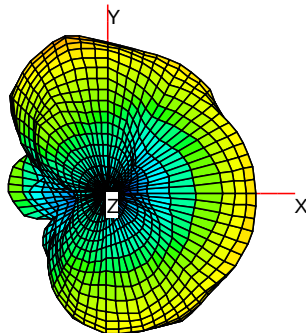
Frequency (MHz)	5150	5250	5350	5450	5550	5650	5750	5850
Tot. Rad. Pwr. (dB)	-1.41	-1.42	-1.40	-1.34	-1.32	-1.45	-1.85	-2.27
Directivity (dBi)	5.91	5.52	5.75	5.79	6.22	5.78	6.29	6.28
Efficiency (dB)	-1.41	-1.42	-1.40	-1.34	-1.32	-1.45	-1.85	-2.27
Efficiency (%)	72.27	72.14	72.41	73.45	73.78	71.63	65.26	59.28
Gain (dBi)	4.50	4.11	4.35	4.45	4.90	4.33	4.44	4.01

3D Radiation Patterns@2400MHz



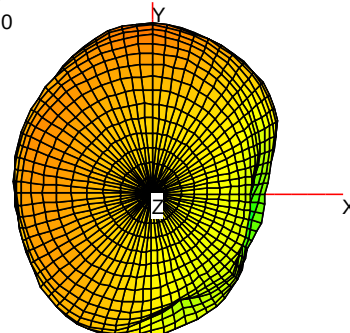
■ Ant 1

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Elevation = 0.0
Roll = 0.0

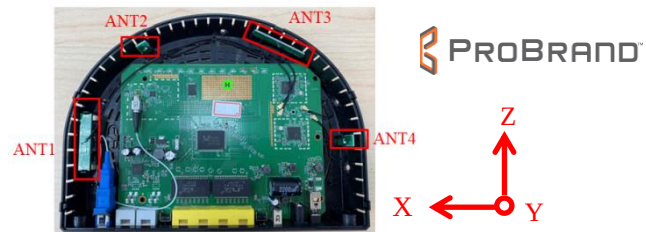


■ Ant 3

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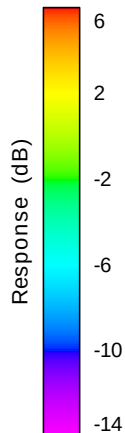
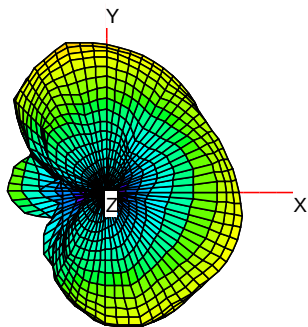


3D Radiation Patterns@2450MHz



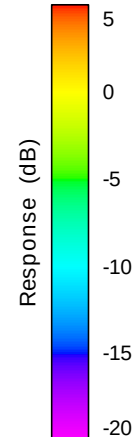
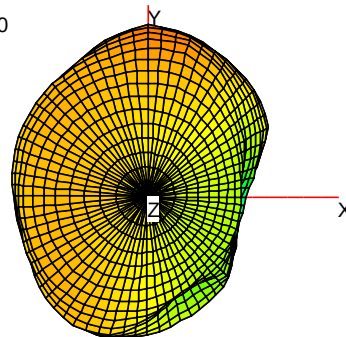
■ Ant 1

Azimuth = 0.0
Elevation = 0.0
Roll = 0.0

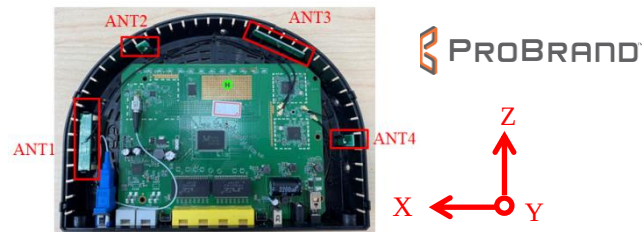


■ Ant 3

Azimuth = 0.0
Elevation = 0.0
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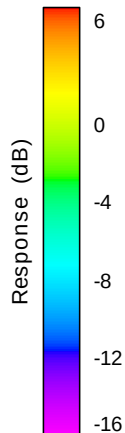
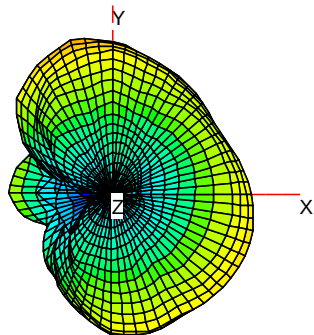


3D Radiation Patterns@2500MHz



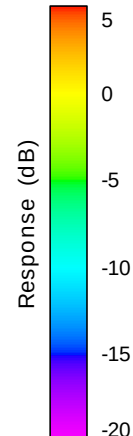
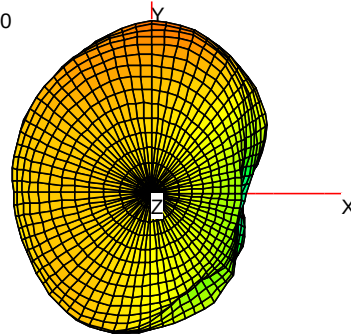
■ Ant 1

Azimuth = 0.0
Elevation = 0.0
Roll = 0.0

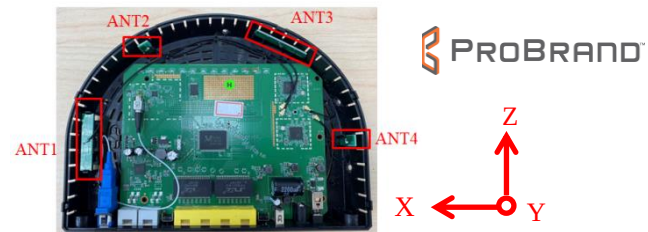


■ Ant 3

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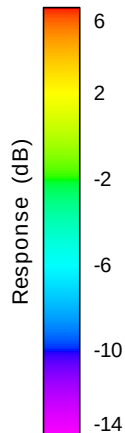
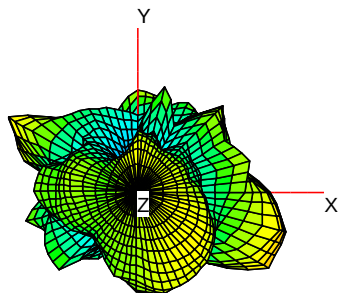


3D Radiation Patterns@5150MHz



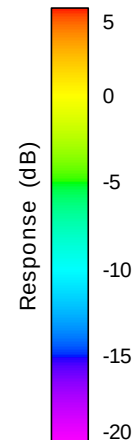
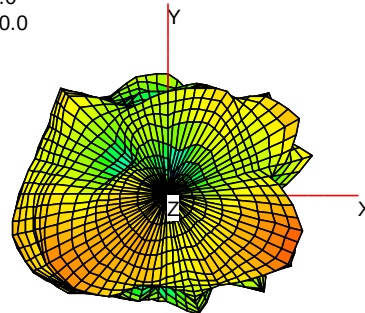
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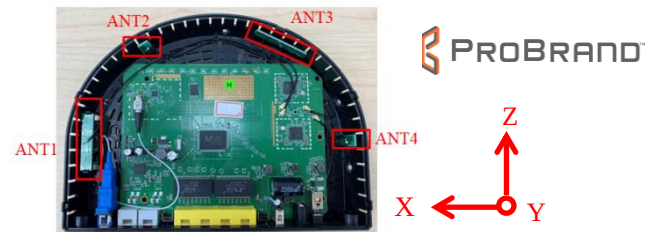


■ Ant 4

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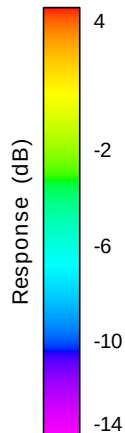
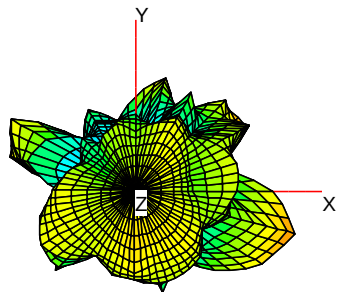


3D Radiation Patterns@5550MHz



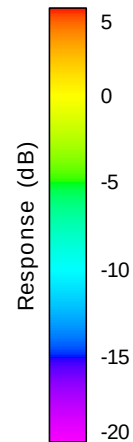
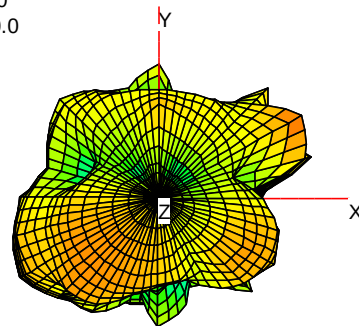
■ Ant 2

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Elevation = 0.0
Roll = 0.0

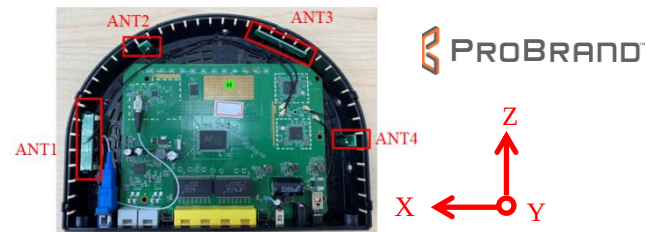


■ Ant 4

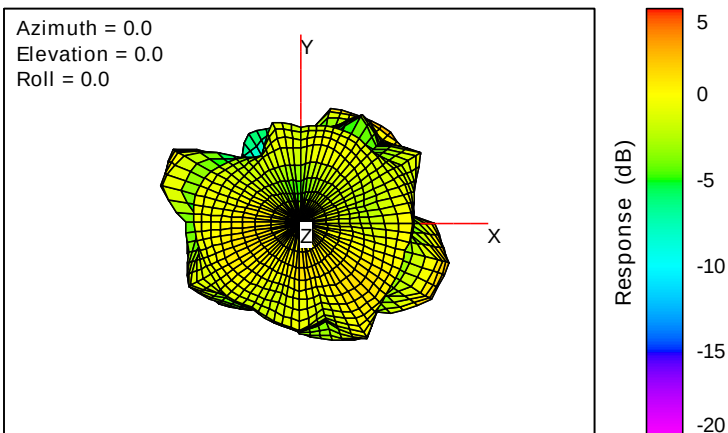
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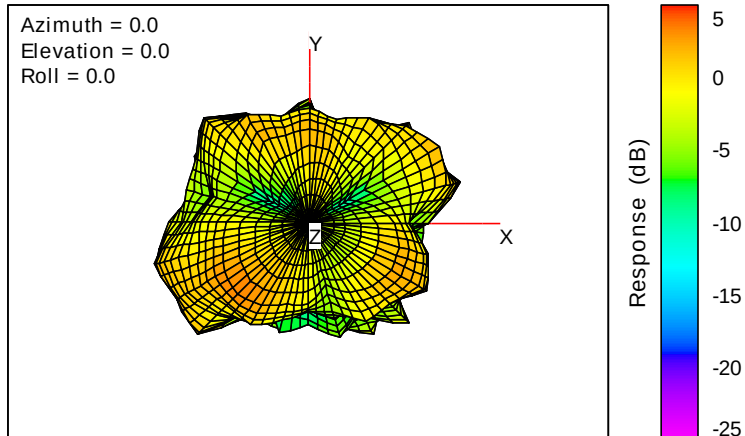
3D Radiation Patterns@5850MHz



■ Ant 2



■ Ant 4





Thank You.

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