



HY-BTSUS (1333A)

Passive Data

Shenzhen Hanyang Antenna Design

Test Condition

1. Test Condition

* HY-BTSUS Metal Antenna

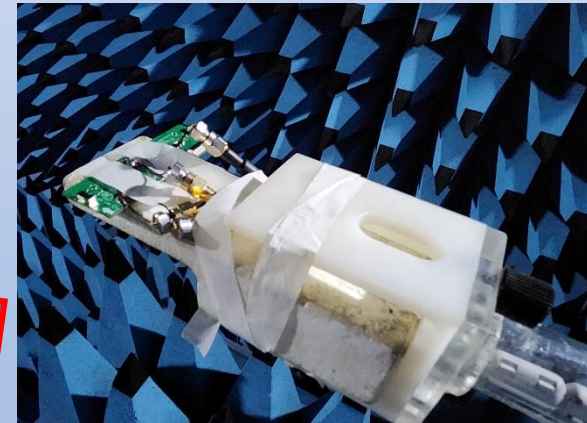
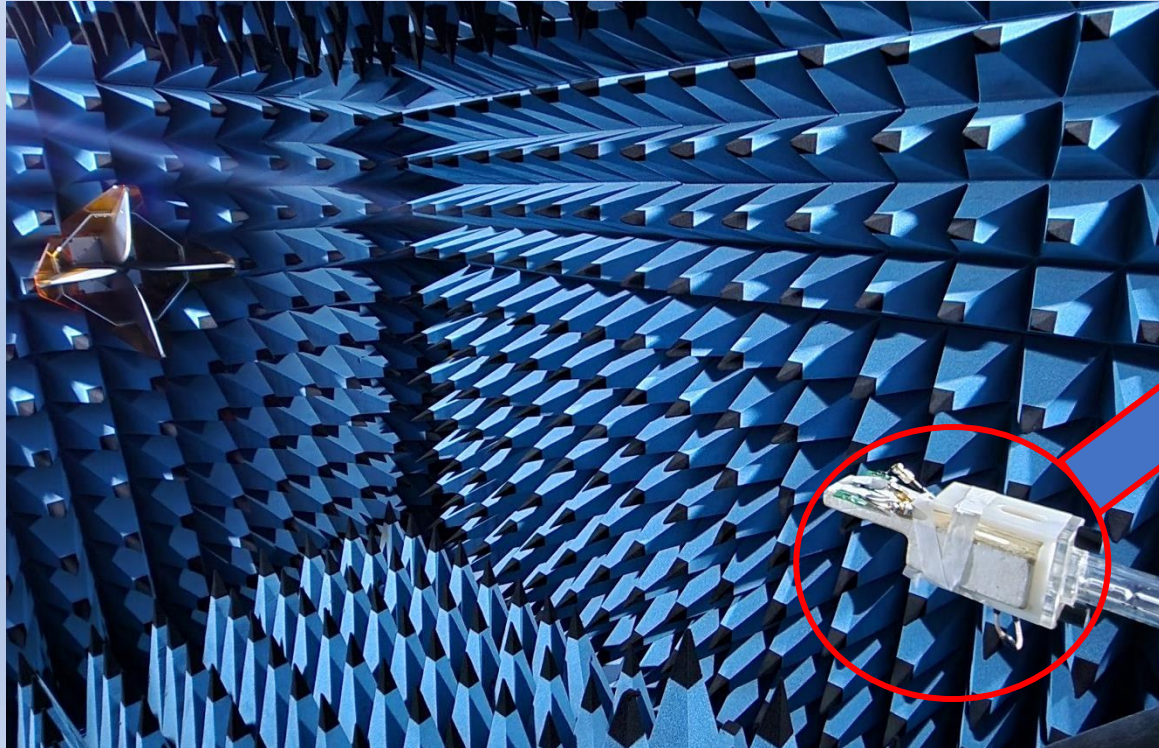
- Test room: Hanyang antenna R&D test room

(Address: Bao Yunda logistics information building 12A11, Qianjin Road two, Baoan District, Shenzhen, China)

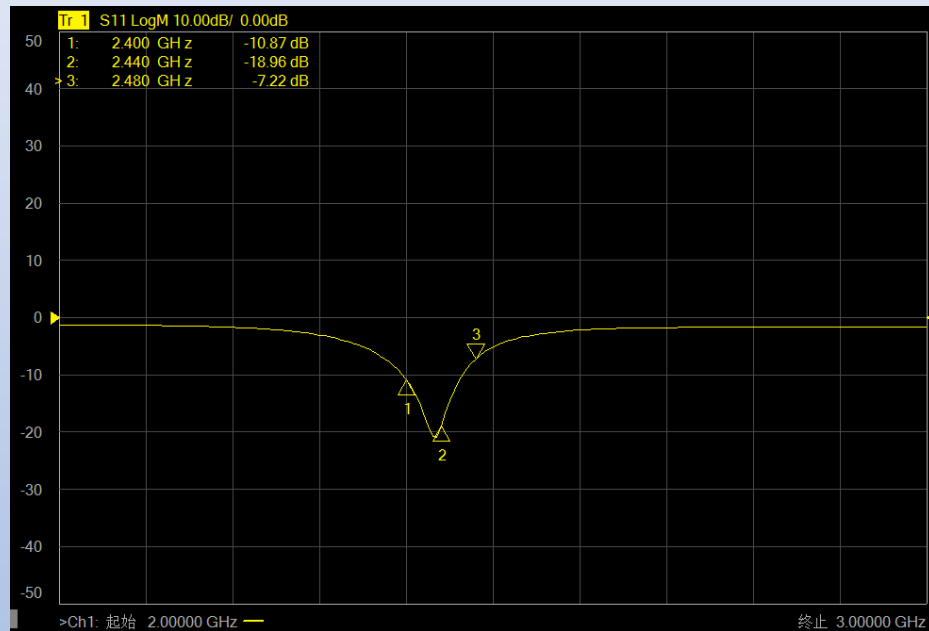
- Network Analyzer : Return Loss

- 3D Passive Chamber : Gain and Efficiency

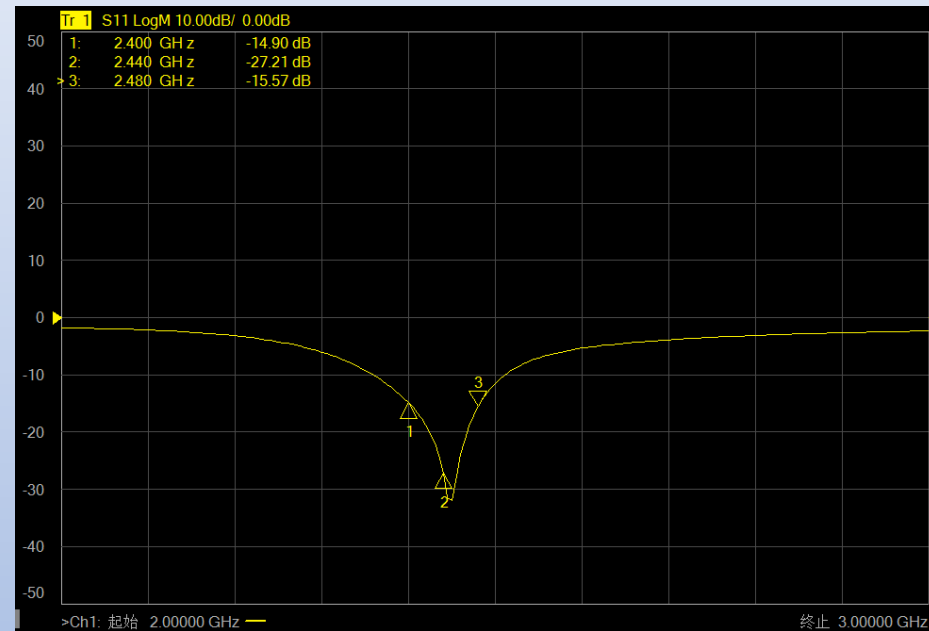
2. Test Environment



HY-BTSUS Passive TEST – Return Loss



BT0

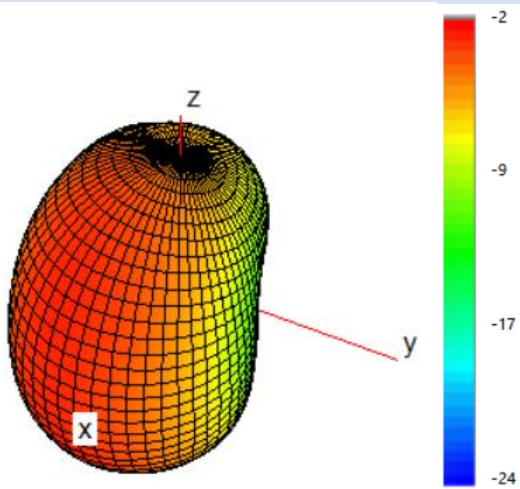


BT1

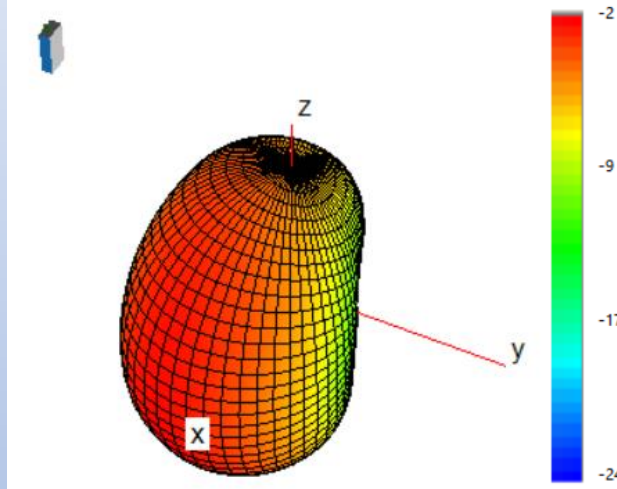
HY-BTSUS BT0 Passive TEST – Antenna 3D Gain

Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2400 MHz	30.90 %	-12.80 dBi	-5.90 dBi	-5.10 dBi	-3.58 dBi	0.11 dBi	0.29 dBi
2410 MHz	31.90 %	-12.80 dBi	-5.70 dBi	-4.96 dBi	-3.80 dBi	0.22 dBi	0.45 dBi
2420 MHz	32.70 %	-12.80 dBi	-5.60 dBi	-4.85dBi	-3.91 dBi	0.33 dBi	0.61 dBi
2430 MHz	33.30 %	-12.90 dBi	-5.50 dBi	-4.78 dBi	-4.14 dBi	0.47 dBi	0.77 dBi
2440 MHz	33.30 %	-13.00 dBi	-5.50 dBi	-4.78 dBi	-4.39 dBi	0.49 dBi	0.78 dBi
2450 MHz	32.80 %	-13.10 dBi	-5.50 dBi	-4.84 dBi	-4.79 dBi	0.51 dBi	0.79 dBi
2460 MHz	32.20 %	-13.20 dBi	-5.60 dBi	-4.92 dBi	-5.06 dBi	0.39 dBi	0.68 dBi
2470 MHz	30.90 %	-13.40 dBi	-5.80 dBi	-5.10 dBi	-5.16 dBi	0.27 dBi	0.55 dBi
2480 MHz	29.30 %	-13.60 dBi	-6.00 dBi	-5.34 dBi	-5.40 dBi	0.06 dBi	0.33 dBi

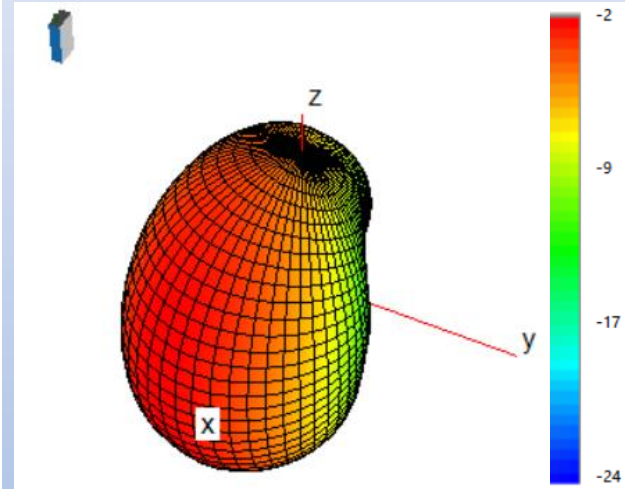
HY-BTSUS BT0 Passive TEST – Antenna 3D Radiation Pattern



2400MHz



2440MHz

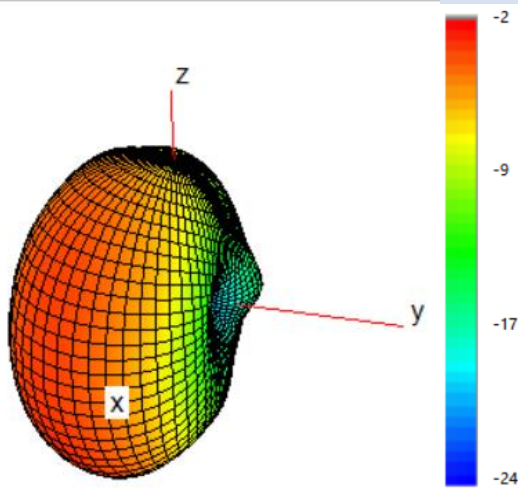


2480MHz

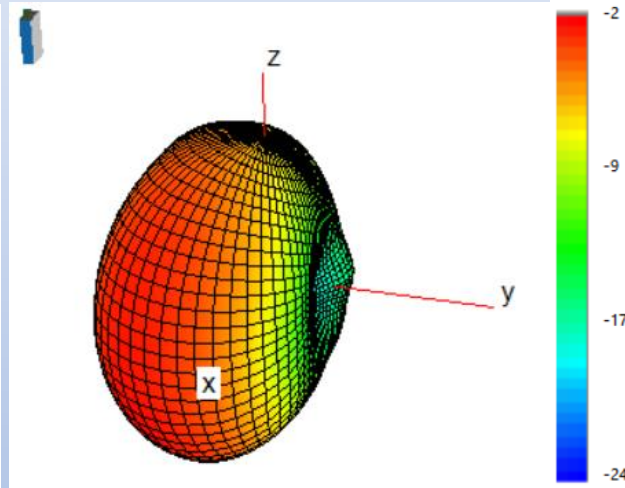
HY-BTSUS BT1 Passive TEST – Antenna 3D Gain

Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2400 MHz	31.20 %	-12.10 dBi	-6.00 dBi	-5.06 dBi	-2.94 dBi	0.55 dBi	0.62 dBi
2410 MHz	32.60 %	-12.00 dBi	-5.80 dBi	-4.87 dBi	-3.00 dBi	0.72 dBi	0.79 dBi
2420 MHz	33.00 %	-12.00 dBi	-5.70 dBi	-4.81 dBi	-3.08 dBi	0.88 dBi	0.95 dBi
2430 MHz	33.00 %	-12.10 dBi	-5.70 dBi	-4.81 dBi	-3.38 dBi	0.81 dBi	0.87 dBi
2440 MHz	33.50 %	-12.10 dBi	-5.60 dBi	-4.76 dBi	-3.46 dBi	0.94 dBi	1.01 dBi
2450 MHz	33.70 %	-12.10 dBi	-5.60 dBi	-4.72 dBi	-3.63 dBi	0.99 dBi	1.05 dBi
2460 MHz	34.00 %	-12.10 dBi	-5.60 dBi	-4.69 dBi	-3.63 dBi	1.07 dBi	1.09 dBi
2470 MHz	33.30 %	-12.20 dBi	-5.60 dBi	-4.77 dBi	-3.67 dBi	0.99 dBi	1.05 dBi
2480 MHz	32.90 %	-12.30 dBi	-5.70 dBi	-4.83 dBi	-3.72 dBi	0.92 dBi	0.94 dBi

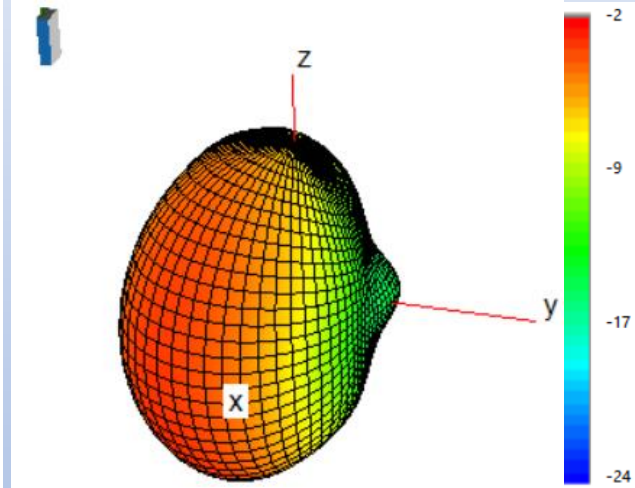
HY-BTSUS BT1 Passive TEST – Antenna 3D Radiation Pattern



2400MHz



2440MHz



2480MHz



HY-WiFiSUS (1333A)

Passive Data

Shenzhen Hanyang Antenna Design

Test Condition

1. Test Condition

* HY-WiFiSUS Metal Antenna

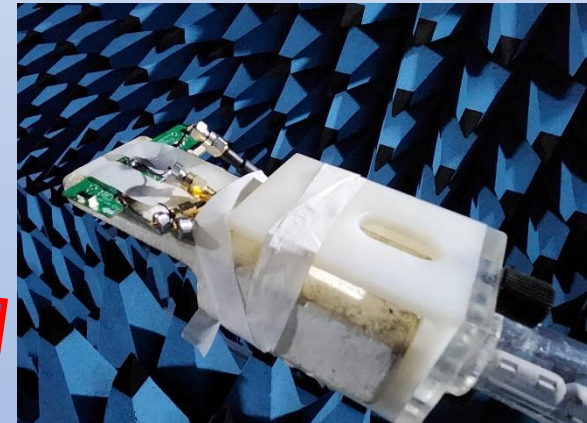
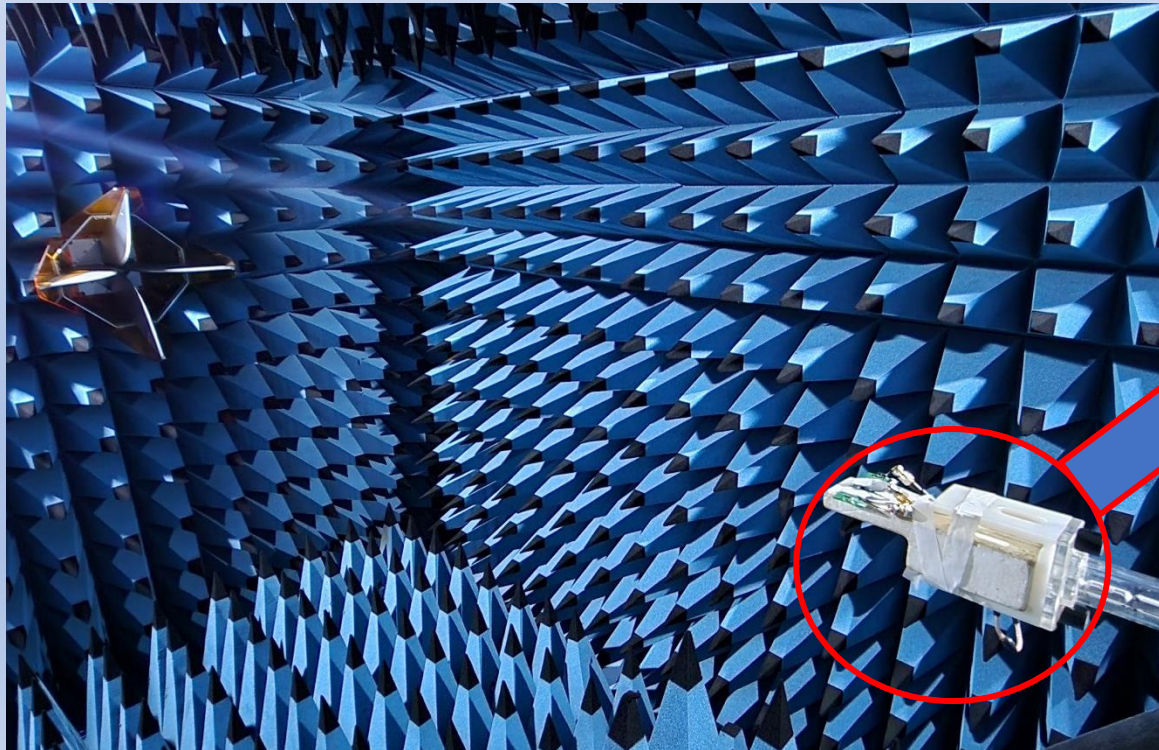
- Test room: Hanyang antenna R&D test room

(Address: Bao Yunda logistics information building 12A11, Qianjin Road two, Baoan District, Shenzhen, China)

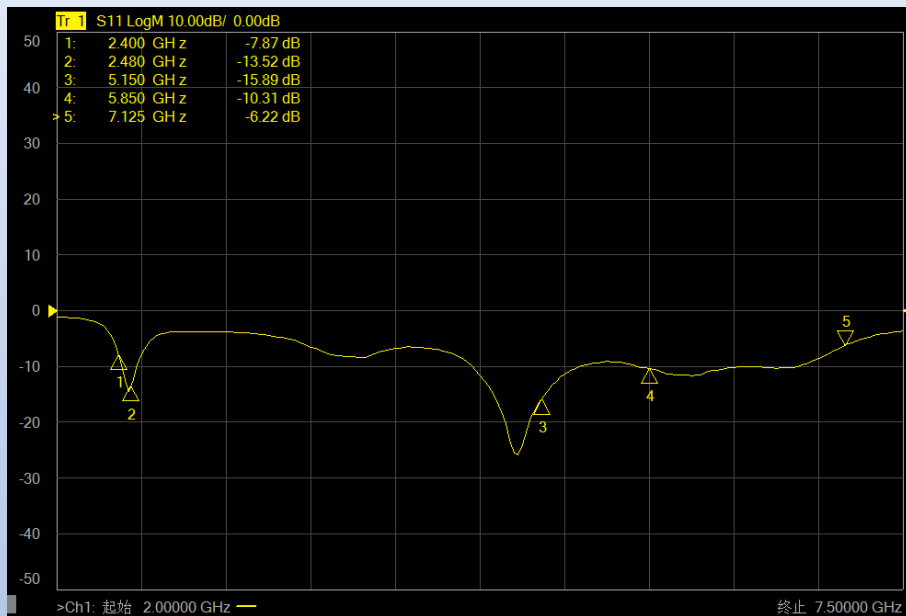
- Network Analyzer : Return Loss

- 3D Passive Chamber : Gain and Efficiency

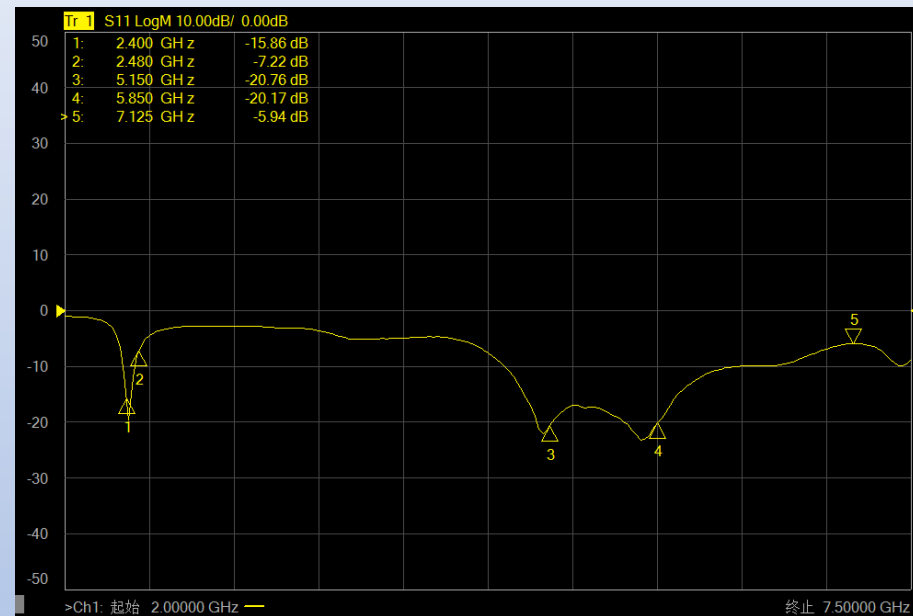
2. Test Environment



HY-WiFiSUS Passive TEST – Return Loss



ANT L

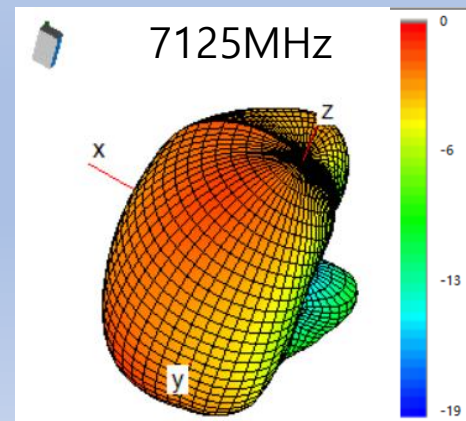
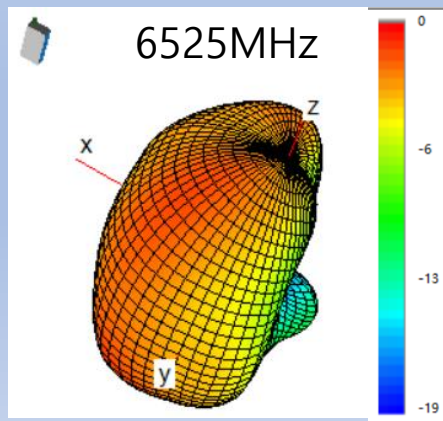
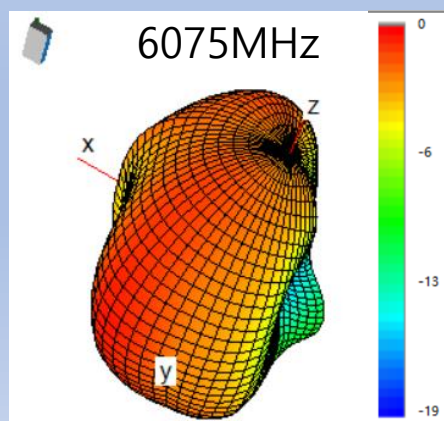
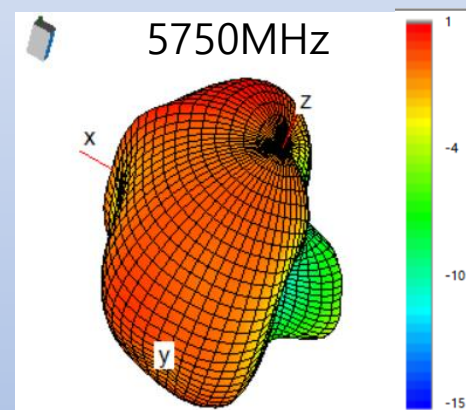
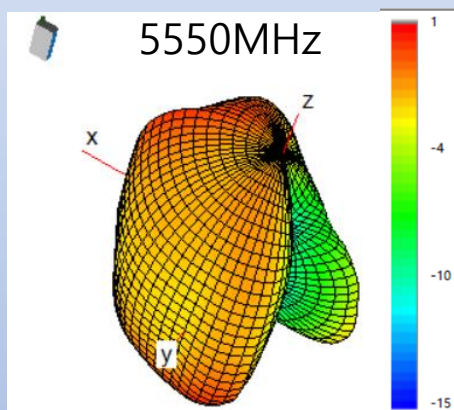
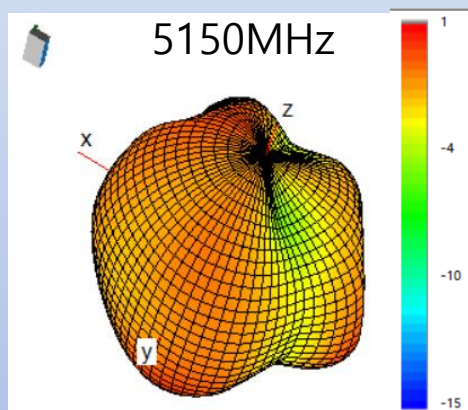
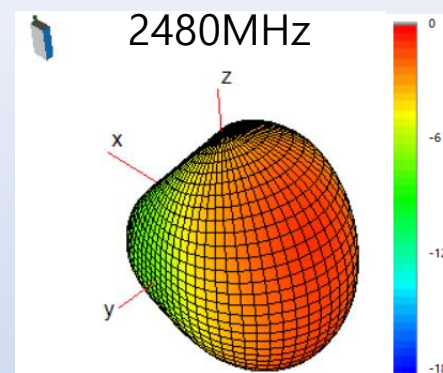
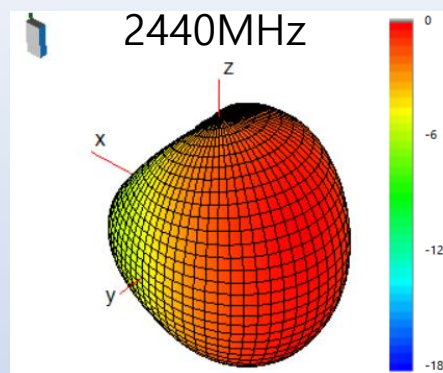
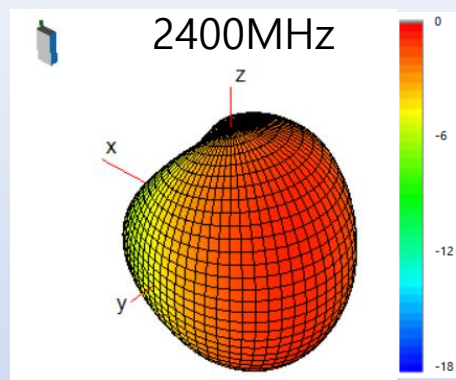


ANT R

HY-WiFiSUS ANT L Passive TEST – Antenna 3D Gain

Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2400 MHz	43.20 %	-10.20 dBi	-4.70 dBi	-3.65 dBi	-1.74 dBi	0.52 dBi	0.89 dBi
2410 MHz	46.10 %	-10.00 dBi	-4.40 dBi	-3.37 dBi	-1.44 dBi	0.92 dBi	1.22 dBi
2420 MHz	47.80 %	-9.80 dBi	-4.30 dBi	-3.21 dBi	-1.27 dBi	1.14 dBi	1.49 dBi
2430 MHz	49.30 %	-9.60 dBi	-4.20 dBi	-3.07 dBi	-0.99 dBi	1.33 dBi	1.65 dBi
2440 MHz	50.60 %	-9.50 dBi	-4.10 dBi	-2.96 dBi	-0.79 dBi	1.47 dBi	1.81 dBi
2450 MHz	51.40 %	-9.30 dBi	-4.00 dBi	-2.89 dBi	-0.66 dBi	1.56 dBi	1.82 dBi
2460 MHz	52.30 %	-9.20 dBi	-4.00 dBi	-2.82 dBi	-0.47 dBi	1.63 dBi	1.84 dBi
2470 MHz	52.60 %	-9.10 dBi	-4.00 dBi	-2.79 dBi	-0.31 dBi	1.69 dBi	1.85 dBi
2480 MHz	52.80 %	-8.90 dBi	-4.00 dBi	-2.78 dBi	1.24 dBi	1.11 dBi	1.82 dBi
5150 MHz	60.20 %	-8.30 dBi	-3.40 dBi	-2.21 dBi	-0.87 dBi	0.59 dBi	1.36 dBi
5250 MHz	54.90 %	-9.00 dBi	-3.70 dBi	-2.60 dBi	-1.13 dBi	0.43 dBi	0.51 dBi
5350 MHz	53.20 %	-9.10 dBi	-3.90 dBi	-2.74 dBi	-0.77 dBi	0.34 dBi	0.80 dBi
5450 MHz	53.30 %	-9.10 dBi	-3.90 dBi	-2.73 dBi	-0.64 dBi	0.55 dBi	0.92 dBi
5550 MHz	51.60 %	-9.20 dBi	-4.00 dBi	-2.87 dBi	-0.18 dBi	0.35 dBi	0.84 dBi
5650 MHz	55.40 %	-8.90 dBi	-3.70 dBi	-2.57 dBi	-0.11 dBi	1.10 dBi	1.49 dBi
5750 MHz	53.20 %	-8.80 dBi	-4.00 dBi	-2.74 dBi	0.36 dBi	0.75 dBi	0.96 dBi
5850 MHz	53.40 %	-8.70 dBi	-4.00 dBi	-2.73 dBi	0.08 dBi	0.66 dBi	0.92 dBi
5925 MHz	40.90 %	-8.90 dBi	-5.50 dBi	-3.88 dBi	-0.11 dBi	0.81 dBi	0.84 dBi
6075 MHz	49.70 %	-8.90 dBi	-4.30 dBi	-3.04 dBi	-1.06 dBi	0.58 dBi	0.60 dBi
6225 MHz	45.10 %	-9.50 dBi	-4.70 dBi	-3.46 dBi	-1.51 dBi	0.34 dBi	0.46 dBi
6375 MHz	37.80 %	-10.00 dBi	-5.60 dBi	-4.23 dBi	-2.12 dBi	-0.12 dBi	0.01 dBi
6525 MHz	37.60 %	-10.00 dBi	-5.60 dBi	-4.25 dBi	-1.89 dBi	0.16 dBi	0.30 dBi
6675 MHz	39.10 %	-9.80 dBi	-5.40 dBi	-4.08 dBi	-2.13 dBi	0.30 dBi	0.44 dBi
6825 MHz	39.40 %	-9.60 dBi	-5.50 dBi	-4.04 dBi	-1.86 dBi	0.43 dBi	0.59 dBi
6975 MHz	30.40 %	-10.60 dBi	-6.60 dBi	-5.17 dBi	-1.81 dBi	-0.78 dBi	-0.56 dBi
7125 MHz	21.10 %	-11.90 dBi	-8.30 dBi	-6.76 dBi	-3.17 dBi	-2.33 dBi	-2.15 dBi

HY-WiFiSUS ANT L Passive TEST – Antenna 3D Radiation Pattern



HY-WiFiSUS ANT R Passive TEST – Antenna 3D Gain

Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2400 MHz	45.50 %	-10.30 dBi	-4.40 dBi	-3.42 dBi	-3.83 dBi	-0.69 dBi	-0.56 dBi
2410 MHz	45.70 %	-10.30 dBi	-4.40 dBi	-3.40 dBi	-3.74 dBi	-0.50 dBi	-0.35 dBi
2420 MHz	45.00 %	-10.30 dBi	-4.50 dBi	-3.47 dBi	-3.67 dBi	-0.29 dBi	-0.14 dBi
2430 MHz	43.90 %	-10.50 dBi	-4.60 dBi	-3.58 dBi	-4.01 dBi	-0.82 dBi	-0.60 dBi
2440 MHz	43.80 %	-10.40 dBi	-4.60 dBi	-3.59 dBi	-3.85 dBi	-0.16 dBi	0.01 dBi
2450 MHz	41.80 %	-10.60 dBi	-4.80 dBi	-3.79 dBi	-4.11 dBi	-0.18 dBi	0.00 dBi
2460 MHz	41.10 %	-10.90 dBi	-4.80 dBi	-3.86 dBi	-4.48 dBi	-0.97 dBi	-0.64 dBi
2470 MHz	40.90 %	-11.00 dBi	-4.80 dBi	-3.88 dBi	-4.55 dBi	-0.77 dBi	-0.75 dBi
2480 MHz	40.70 %	-11.00 dBi	-4.80 dBi	-3.90 dBi	-4.34 dBi	-0.99 dBi	-0.97 dBi
5150 MHz	61.10 %	-8.10 dBi	-3.40 dBi	-2.14 dBi	0.88 dBi	1.52 dBi	1.95 dBi
5250 MHz	58.90 %	-8.30 dBi	-3.60 dBi	-2.30 dBi	1.24 dBi	1.11 dBi	1.86 dBi
5350 MHz	57.80 %	-8.30 dBi	-3.70 dBi	-2.38 dBi	1.25 dBi	0.99 dBi	1.90 dBi
5450 MHz	59.30 %	-8.20 dBi	-3.50 dBi	-2.27 dBi	1.52 dBi	1.11 dBi	1.96 dBi
5550 MHz	57.70 %	-8.30 dBi	-3.70 dBi	-2.39 dBi	1.09 dBi	0.56 dBi	1.86 dBi
5650 MHz	61.30 %	-8.10 dBi	-3.40 dBi	-2.13 dBi	1.60 dBi	1.02 dBi	1.98 dBi
5750 MHz	56.60 %	-8.30 dBi	-3.80 dBi	-2.47 dBi	1.30 dBi	0.61 dBi	1.92 dBi
5850 MHz	54.70 %	-8.50 dBi	-3.90 dBi	-2.62 dBi	0.89 dBi	0.54 dBi	1.49 dBi
5925 MHz	50.10 %	-8.90 dBi	-4.30 dBi	-3.00 dBi	0.35 dBi	0.58 dBi	0.95 dBi
6075 MHz	45.70 %	-9.40 dBi	-4.60 dBi	-3.40 dBi	-0.84 dBi	0.39 dBi	0.42 dBi
6225 MHz	43.40 %	-9.60 dBi	-4.90 dBi	-3.63 dBi	-1.37 dBi	0.23 dBi	0.28 dBi
6375 MHz	41.20 %	-9.80 dBi	-5.10 dBi	-3.87 dBi	-1.66 dBi	0.15 dBi	0.25 dBi
6525 MHz	36.10 %	-10.50 dBi	-5.50 dBi	-4.43 dBi	-1.96 dBi	-0.63 dBi	-0.48 dBi
6675 MHz	28.50 %	-11.30 dBi	-6.80 dBi	-5.44 dBi	-2.38 dBi	-1.54 dBi	-1.32 dBi
6825 MHz	26.30 %	-11.60 dBi	-7.10 dBi	-5.81 dBi	-2.76 dBi	-1.97 dBi	-1.45 dBi
6975 MHz	21.80 %	-12.30 dBi	-8.00 dBi	-6.61 dBi	-2.90 dBi	-2.38 dBi	-1.78 dBi
7125 MHz	20.30 %	-12.50 dBi	-8.30 dBi	-6.92 dBi	-3.28 dBi	-2.83 dBi	-2.44 dBi

HY-WiFiSUS ANT R Passive TEST – Antenna 3D Radiation Pattern

