



# SRF20 (DU7000) Passive Data

Shenzhen Hanyang Antenna Design

# Test Condition

## 1. Test Condition

\* SRF20 Chip Antenna

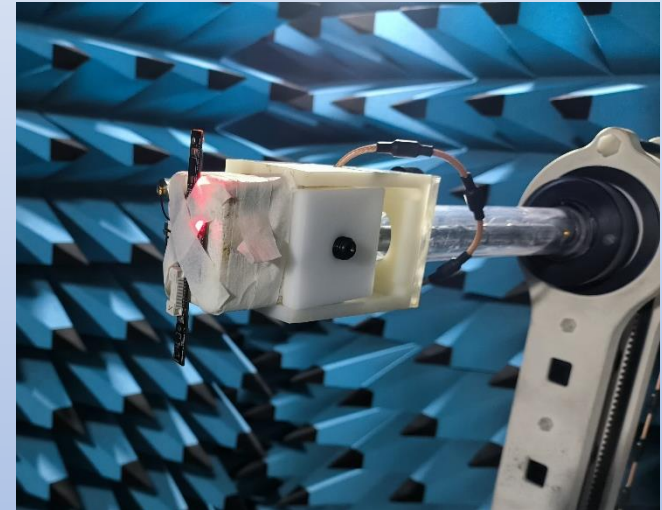
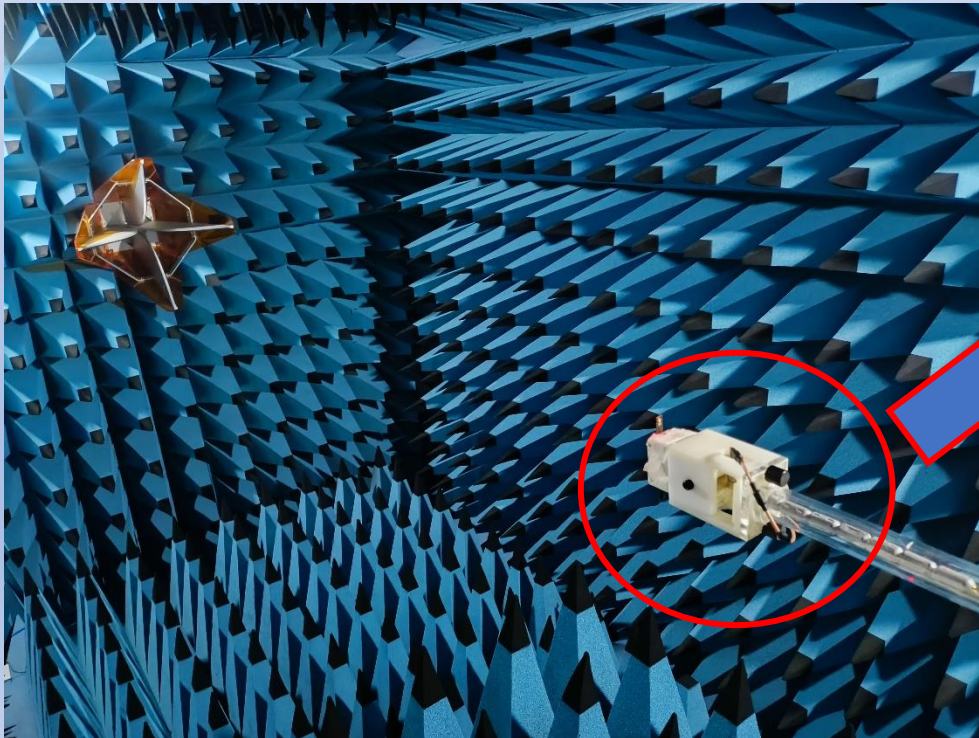
- Test room: Hanyang antenna R&D test room

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

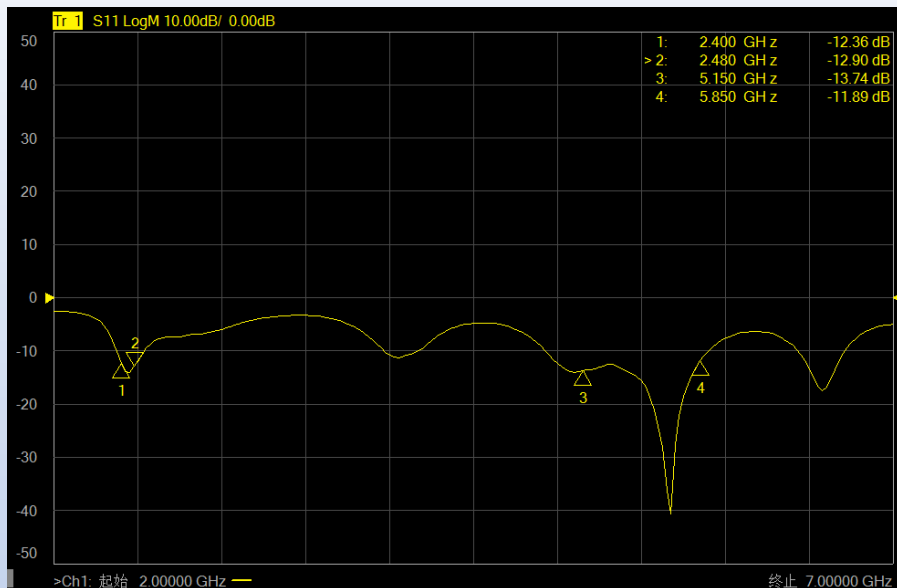
- Network Analyzer : Return Loss

- 3D Passive Chamber : Gain and Efficiency

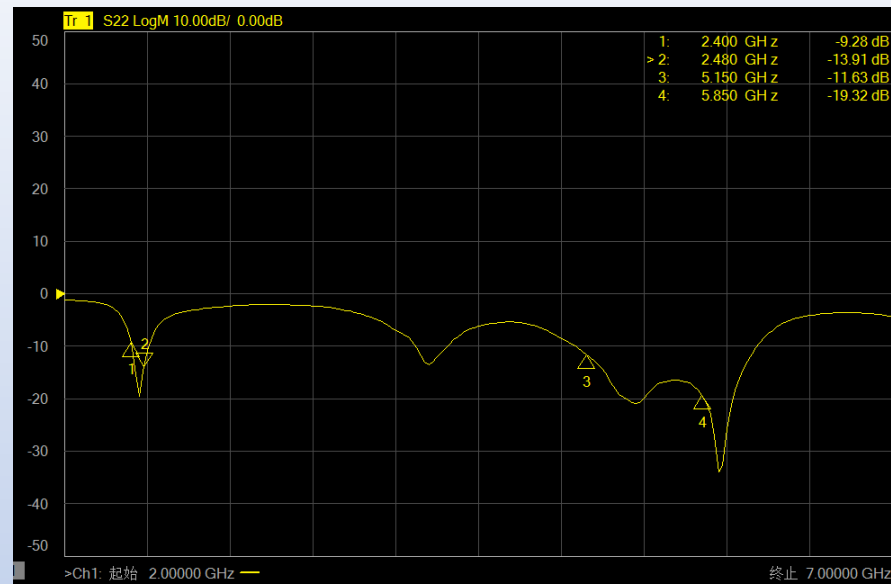
## 2. Test Environment



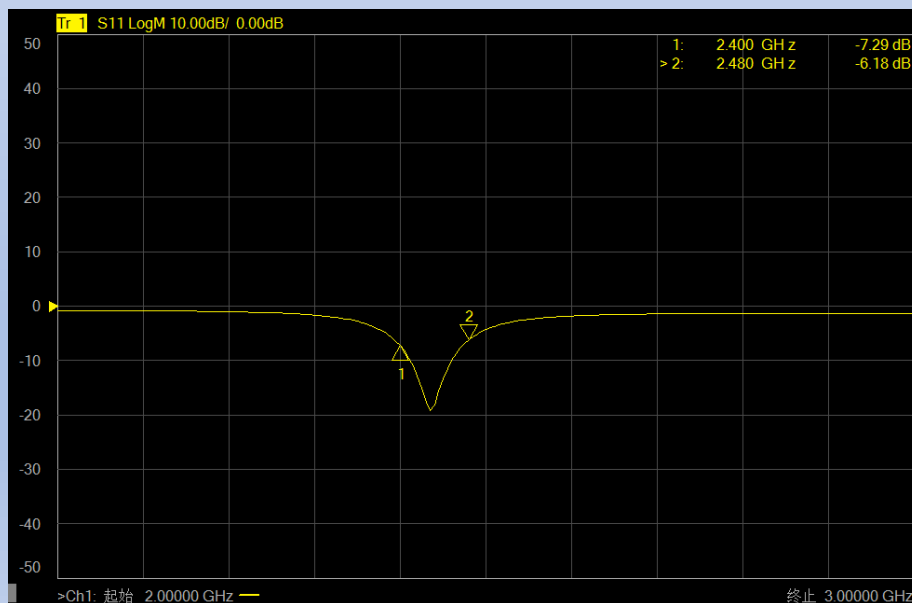
# SRF20(DU7000) Passive TEST – Return Loss



ANT1



ANT2



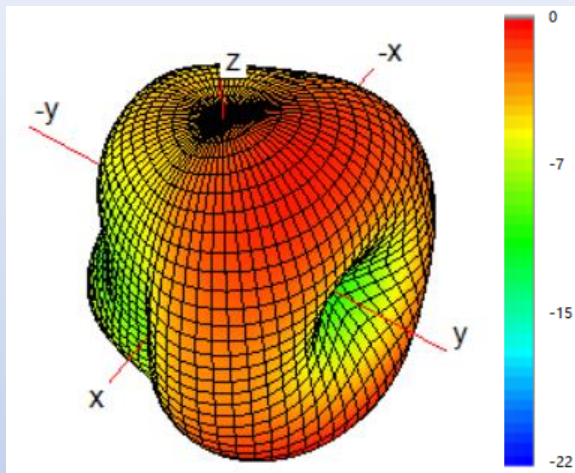
BT

# SRF20(DU7000) ANT1 Passive TEST – Antenna 3D Gain

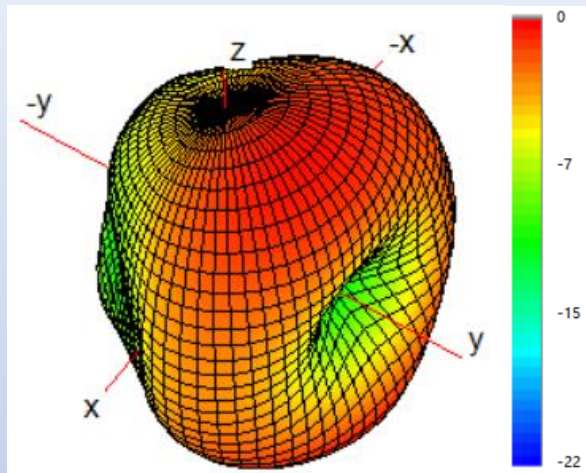
Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2400MHz	42.91%	-7.91 dBi	-6.54 dBi	-3.67 dBi	-1.48 dBi	-1.13 dBi	-0.65 dBi
2410MHz	42.81%	-8.08 dBi	-6.53 dBi	-3.68 dBi	-1.52 dBi	-0.88 dBi	-0.45 dBi
2420MHz	42.24%	-8.07 dBi	-6.45 dBi	-3.74 dBi	-1.33 dBi	-0.52 dBi	-0.11 dBi
2430MHz	41.41%	-8.14 dBi	-6.38 dBi	-3.83 dBi	-1.10 dBi	-0.27 dBi	0.13 dBi
2440MHz	41.24%	-8.12 dBi	-6.14 dBi	-3.85 dBi	-0.77 dBi	0.07 dBi	0.46 dBi
2450MHz	40.55%	-8.10 dBi	-6.18 dBi	-3.92 dBi	-0.45 dBi	0.19 dBi	0.57 dBi
2460MHz	39.94%	-8.35 dBi	-6.10 dBi	-3.99 dBi	-0.46 dBi	0.35 dBi	0.71 dBi
2470MHz	38.83%	-8.61 dBi	-6.30 dBi	-4.11 dBi	-0.55 dBi	0.23 dBi	0.58 dBi
2480MHz	38.10%	-8.90 dBi	-6.48 dBi	-4.19 dBi	-0.71 dBi	0.15 dBi	0.48 dBi
5150MHz	44.18%	-7.46 dBi	-5.78 dBi	-3.55 dBi	0.82 dBi	0.19 dBi	1.31 dBi
5200MHz	45.36%	-7.11 dBi	-5.68 dBi	-3.43 dBi	1.43 dBi	0.40 dBi	1.35 dBi
5250MHz	45.60%	-6.95 dBi	-5.75 dBi	-3.41 dBi	1.40 dBi	-0.03 dBi	1.39 dBi
5300MHz	42.71%	-6.90 dBi	-5.45 dBi	-3.69 dBi	1.43 dBi	0.00 dBi	1.36 dBi
5350MHz	43.95%	-6.80 dBi	-5.46 dBi	-3.57 dBi	1.38 dBi	-0.06 dBi	1.43 dBi
5400MHz	45.63%	-7.38 dBi	-6.32 dBi	-3.41 dBi	0.89 dBi	-0.81 dBi	1.30 dBi
5450MHz	43.85%	-7.48 dBi	-5.82 dBi	-3.58 dBi	0.65 dBi	-0.04 dBi	1.19 dBi
5500MHz	41.35%	-7.02 dBi	-5.82 dBi	-3.84 dBi	0.91 dBi	0.15 dBi	1.20 dBi
5550MHz	42.37%	-6.58 dBi	-5.33 dBi	-3.73 dBi	1.34 dBi	0.56 dBi	1.40 dBi
5600MHz	43.95%	-6.74 dBi	-5.25 dBi	-3.57 dBi	1.00 dBi	0.90 dBi	1.35 dBi
5650MHz	44.05%	-7.40 dBi	-5.56 dBi	-3.56 dBi	0.54 dBi	0.35 dBi	1.24 dBi
5700MHz	43.48%	-7.45 dBi	-5.26 dBi	-3.62 dBi	1.06 dBi	0.91 dBi	1.38 dBi
5750MHz	41.91%	-7.60 dBi	-5.07 dBi	-3.78 dBi	1.33 dBi	1.15 dBi	1.32 dBi
5800MHz	40.72%	-8.53 dBi	-5.72 dBi	-3.90 dBi	0.41 dBi	0.23 dBi	0.79 dBi
5850MHz	40.24%	-8.87 dBi	-5.94 dBi	-3.95 dBi	-0.09 dBi	0.47 dBi	0.91 dBi

# SRF20(DU7000) ANT1 Passive TEST – Antenna 3D Radiation Pattern

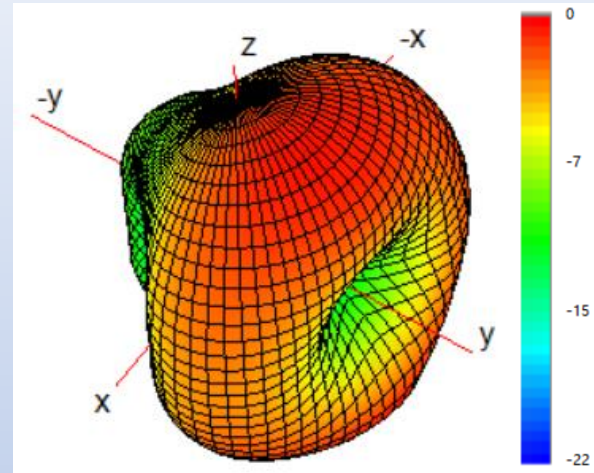
2400MHz



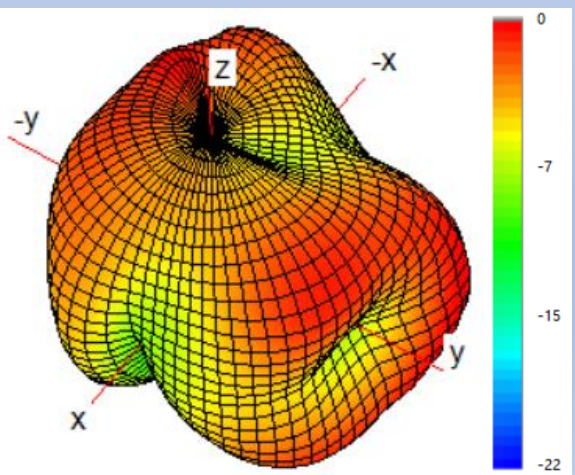
2440MHz



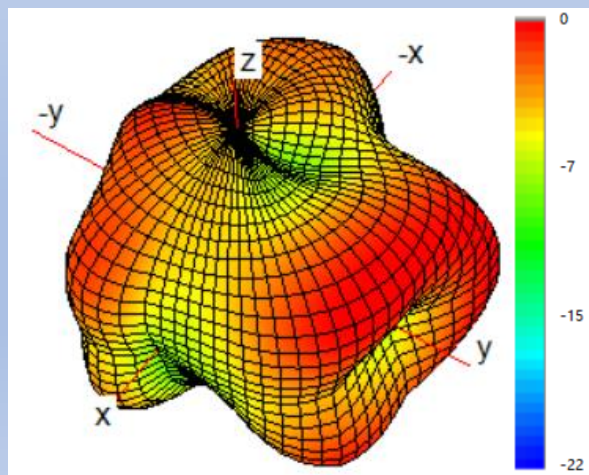
2480MHz



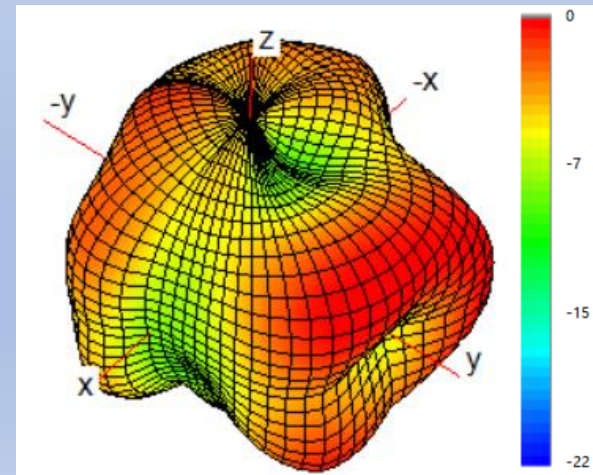
5150MHz



5550MHz



5750MHz

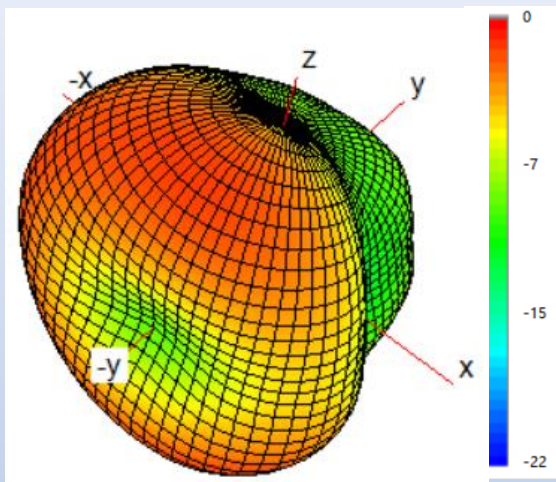


# SRF20(DU7000) ANT2 Passive TEST – Antenna 3D Gain

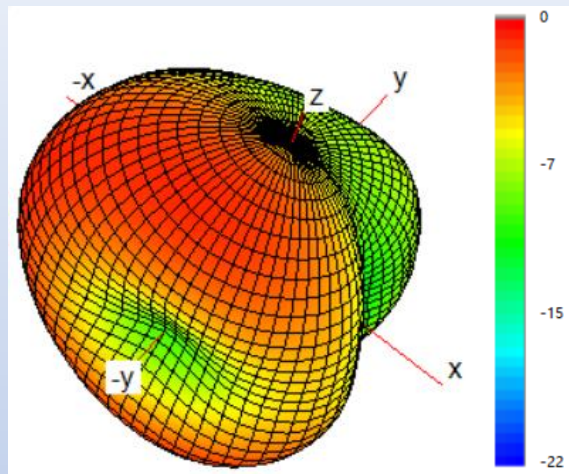
Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2400MHz	35.73%	-8.66 dBi	-6.55 dBi	-4.47 dBi	-0.92 dBi	0.34 dBi	0.51 dBi
2410MHz	36.55%	-8.63 dBi	-6.41 dBi	-4.37 dBi	-0.81 dBi	0.57 dBi	0.74 dBi
2420MHz	37.97%	-8.48 dBi	-6.24 dBi	-4.21 dBi	-0.60 dBi	0.71 dBi	0.88 dBi
2430MHz	38.77%	-8.44 dBi	-6.12 dBi	-4.11 dBi	-0.39 dBi	0.80 dBi	0.97 dBi
2440MHz	38.79%	-8.29 dBi	-5.79 dBi	-4.11 dBi	-0.11 dBi	1.12 dBi	1.29 dBi
2450MHz	39.81%	-8.07 dBi	-5.71 dBi	-4.00 dBi	0.21 dBi	1.20 dBi	1.37 dBi
2460MHz	40.33%	-8.17 dBi	-5.58 dBi	-3.94 dBi	0.23 dBi	1.25 dBi	1.38 dBi
2470MHz	40.54%	-8.46 dBi	-5.86 dBi	-3.92 dBi	0.01 dBi	1.01 dBi	1.18 dBi
2480MHz	40.50%	-8.81 dBi	-6.13 dBi	-3.93 dBi	-0.25 dBi	0.71 dBi	0.91 dBi
5150MHz	46.15%	-7.80 dBi	-4.81 dBi	-3.36 dBi	0.54 dBi	0.77 dBi	1.39 dBi
5200MHz	48.74%	-7.38 dBi	-4.77 dBi	-3.12 dBi	0.96 dBi	0.88 dBi	1.43 dBi
5250MHz	51.13%	-6.96 dBi	-4.76 dBi	-2.91 dBi	0.98 dBi	0.97 dBi	1.43 dBi
5300MHz	51.22%	-7.20 dBi	-4.75 dBi	-2.91 dBi	1.01 dBi	0.94 dBi	1.41 dBi
5350MHz	53.01%	-7.32 dBi	-4.72 dBi	-2.76 dBi	0.93 dBi	0.92 dBi	1.39 dBi
5400MHz	53.17%	-7.41 dBi	-5.16 dBi	-2.74 dBi	0.80 dBi	0.62 dBi	1.31 dBi
5450MHz	51.60%	-7.85 dBi	-4.94 dBi	-2.87 dBi	0.64 dBi	0.90 dBi	1.27 dBi
5500MHz	49.04%	-7.01 dBi	-4.74 dBi	-3.09 dBi	0.97 dBi	0.88 dBi	1.42 dBi
5550MHz	50.53%	-6.57 dBi	-4.39 dBi	-2.96 dBi	1.03 dBi	0.90 dBi	1.38 dBi
5600MHz	52.42%	-6.53 dBi	-4.13 dBi	-2.81 dBi	0.99 dBi	0.99 dBi	1.40 dBi
5650MHz	52.13%	-6.96 dBi	-4.24 dBi	-2.83 dBi	0.93 dBi	0.97 dBi	1.42 dBi
5700MHz	51.50%	-7.18 dBi	-4.05 dBi	-2.88 dBi	0.95 dBi	0.99 dBi	1.43 dBi
5750MHz	49.90%	-7.27 dBi	-4.11 dBi	-3.02 dBi	0.73 dBi	0.98 dBi	1.27 dBi
5800MHz	47.90%	-8.1 dBi	-5.28 dBi	-3.20 dBi	0.20 dBi	0.80 dBi	1.26 dBi
5850MHz	48.03%	-7.59 dBi	-4.53 dBi	-3.18 dBi	0.79 dBi	0.95 dBi	1.41 dBi

# SRF20(DU7000) ANT2 Passive TEST – Antenna 3D Radiation Pattern

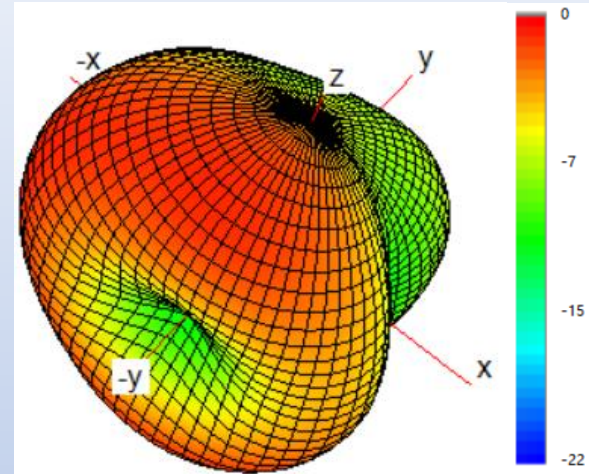
2400MHz



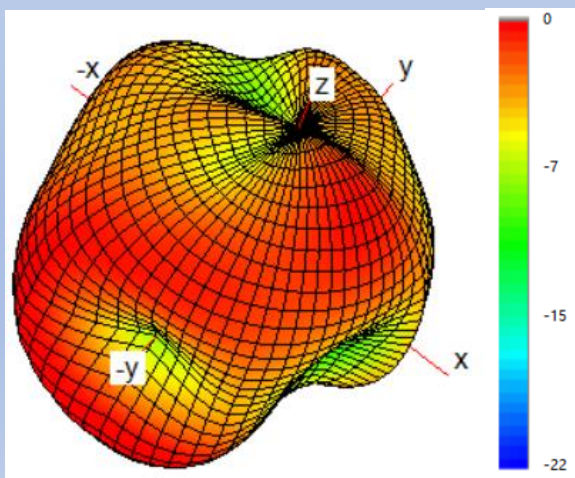
2440MHz



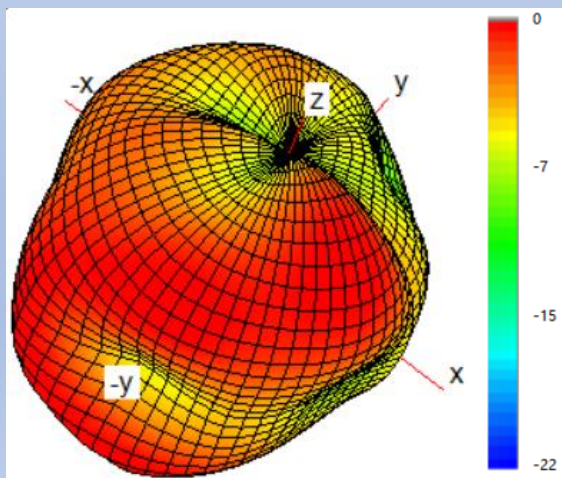
2480MHz



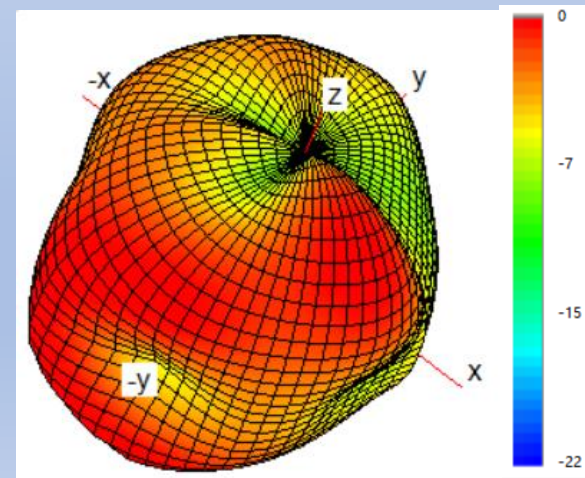
5150MHz



5550MHz



5750MHz

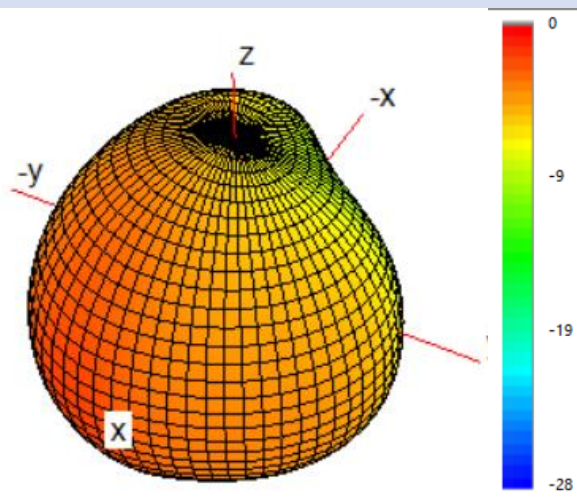


# SRF20(DU7000) BT Passive TEST – Antenna 3D Gain

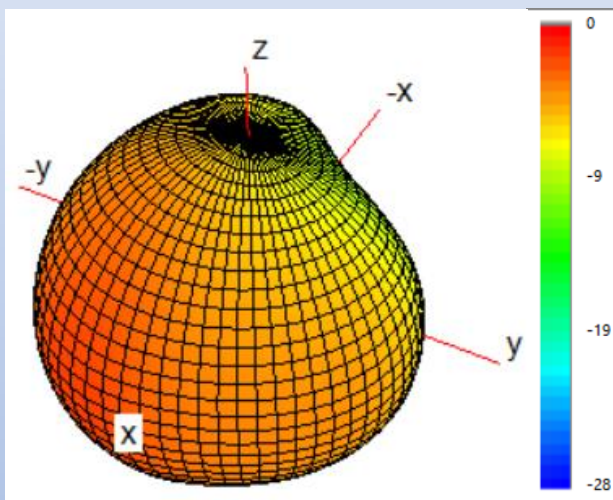
Frequency	Efficiency	Average Gain			Max Gain		
		Ver	Hor	Total	Ver	Hor	Total
2400 MHz	26.66%	-14.67 dBi	-8.03 dBi	-5.74 dBi	-5.37 dBi	-2.86 dBi	-2.75 dBi
2410 MHz	29.62%	-14.4 dBi	-7.54 dBi	-5.28 dBi	-5.06 dBi	-2.41 dBi	-2.31 dBi
2420 MHz	31.18%	-14.15 dBi	-7.13 dBi	-5.06 dBi	-4.72 dBi	-2.07 dBi	-1.99 dBi
2430 MHz	32.77%	-13.95 dBi	-6.94 dBi	-4.85 dBi	-4.53 dBi	-1.90 dBi	-1.83 dBi
2440 MHz	33.26%	-14.05 dBi	-6.98 dBi	-4.78 dBi	-4.54 dBi	-1.89 dBi	-1.82 dBi
2450 MHz	32.37%	-14.32 dBi	-7.13 dBi	-4.90 dBi	-4.92 dBi	-2.02 dBi	-1.95 dBi
2460 MHz	30.21%	-14.79 dBi	-7.77 dBi	-5.20 dBi	-5.37 dBi	-2.63 dBi	-2.56 dBi
2470 MHz	27.70%	-15.49 dBi	-8.30 dBi	-5.58 dBi	-5.95 dBi	-3.10 dBi	-3.04 dBi
2480 MHz	25.43%	-16.06 dBi	-8.95 dBi	-5.95 dBi	-6.55 dBi	-3.66 dBi	-3.60 dBi



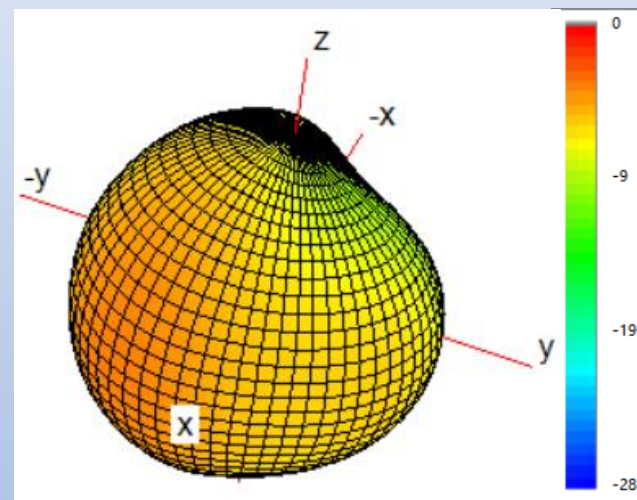
# SRF20(DU7000) BT Passive TEST – Antenna 3D Radiation Pattern



2400MHz



2440MHz



2480MHz