WB311L V02 PCB Antenna Report

2024/12/10

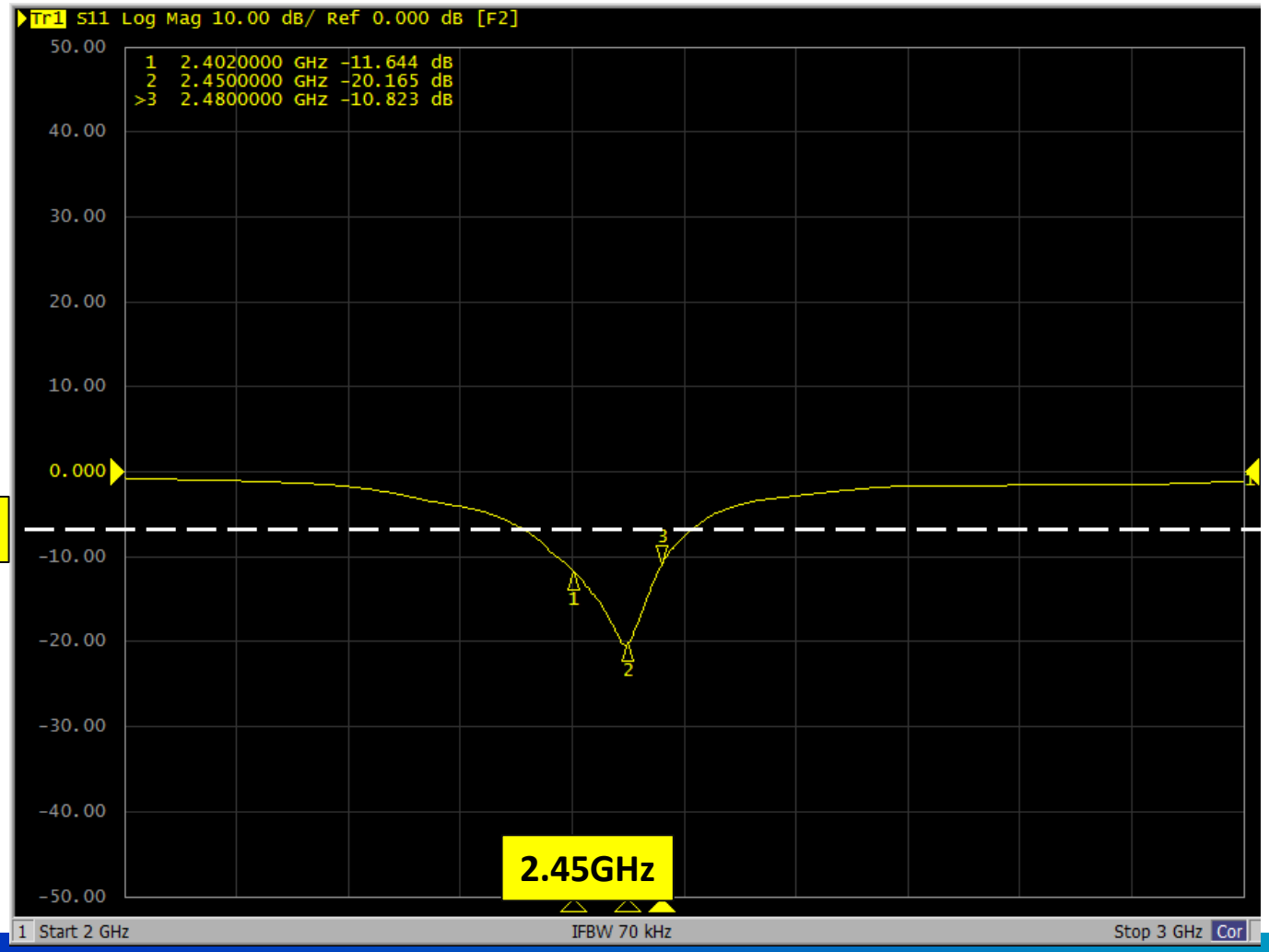
Outline

- Return Loss
- Radiation
- Gain Table
- Summary

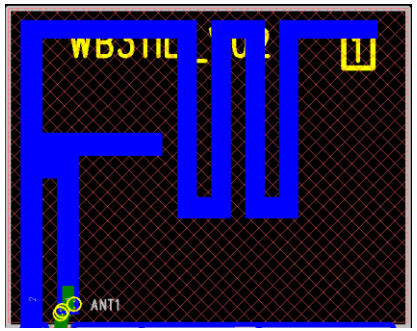
V02 PCB Return Loss - VGT(3)

12/05 added

- V02 PCB antenna S-parameter could meet requirement.



V02 ANT Pattern



GND Feed

- Antenna pattern view

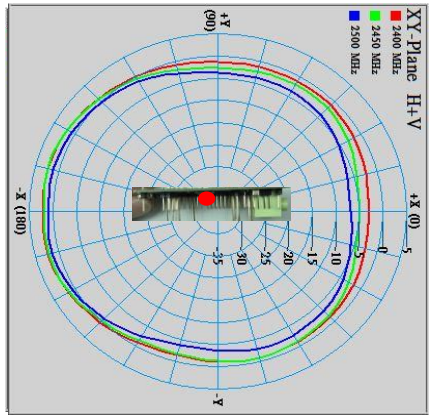
Frequency (GHz)	Return Loss (dB)
2.402 GHz	-11.6
2.450 GHz	-20.1
2.480 GHz	-10.8

V02 PCB 2D/3D Radiation Pattern

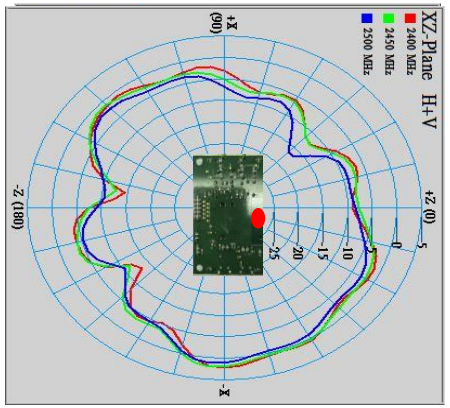
12/05 added

PCB Vendor : VGT (2)

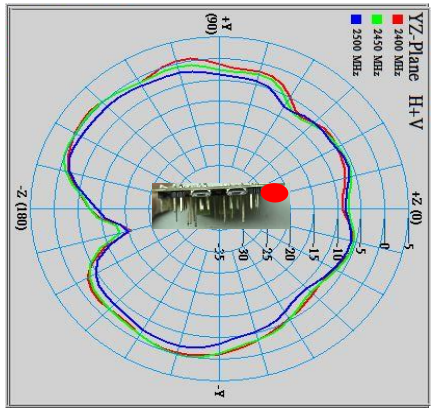
X-Y Plane

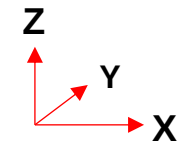


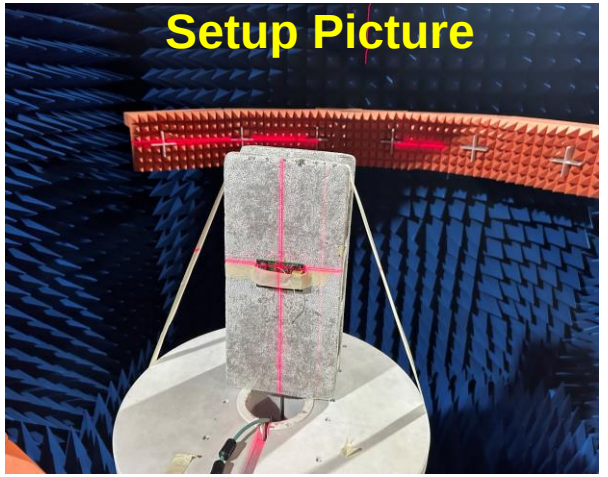
X-Z Plane



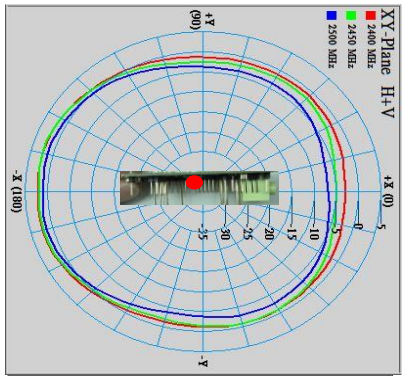
Y-Z Plane



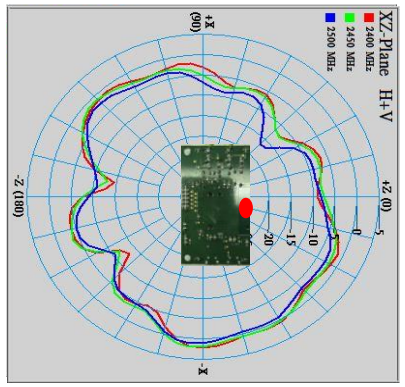




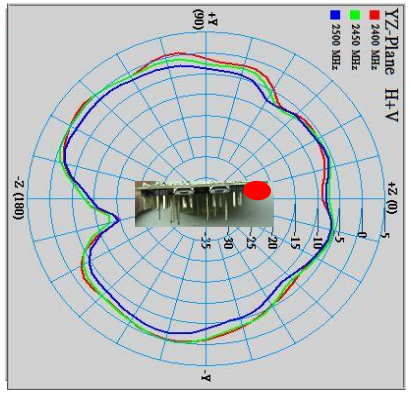
X-Y Plane



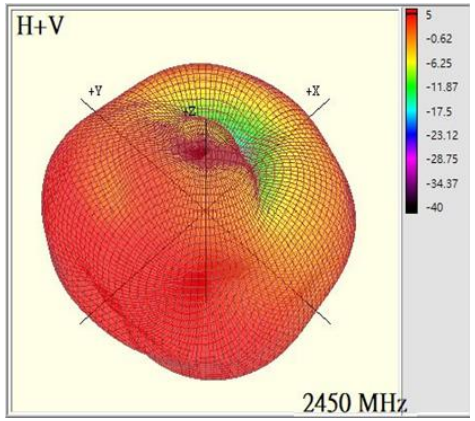
X-Z Plane



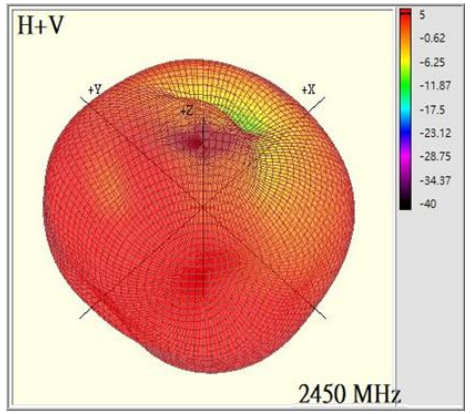
Y-Z Plane



3D –VGT(2)



3D –VGT(3)

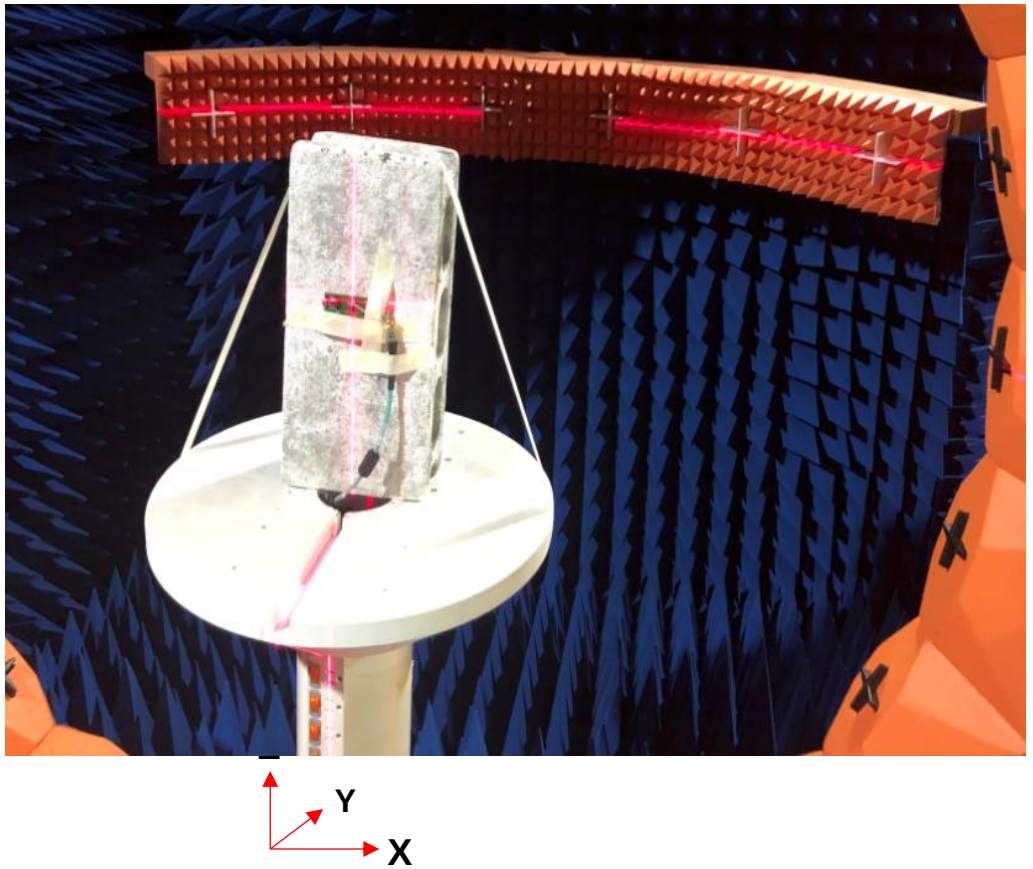


V02 PCB Radiation Gain Table

12/05 added

Frequency(Mhz)	Efficiency(%)	Gain(dBi)
2350	28.2	-0.5
2360	32.1	0.3
2370	35.1	0.8
2380	40.3	1.1
2390	43.7	1.0
2400	45.6	1.8
2410	46.7	1.6
2420	47.9	2.0
2430	47.0	2.0
2440	45.7	2.0
2450	43.9	2.1
2460	42.3	2.0
2470	42.2	1.7
2480	38.1	1.5
2490	36.2	1.5
2500	35.0	1.2
2510	27.4	0.5
2520	22.7	0.0
2530	21.0	0.1
2540	21.1	0.3
2540	17.5	0.5

Setup Picture



Conclusion

1. The return loss of antenna can achieve maximum -10dB requirement which means RF power can be transmitted out and doesn’t get too much loss.

2. The antenna efficiency can achieve 45% which means antenna performance is good enough.

3. According to test result among a few samples, there is no obviously difference in antenna efficiency and peak gain, the deviation of various samples is acceptable.