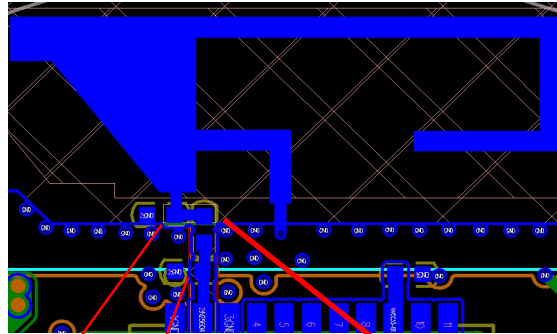


APPROVAL SHEET

2.4G/5G WIFI band antenna



Series 2

Shunt 1

Series 1

Matching component value

Series 1

0 Ω

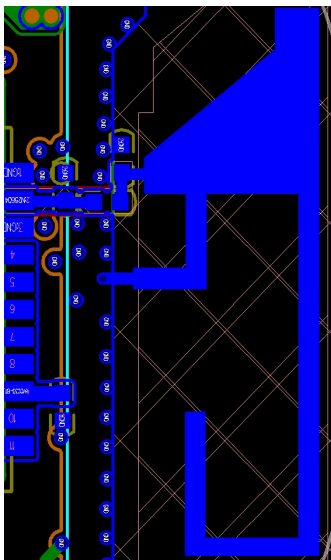
Shunt 1

NC

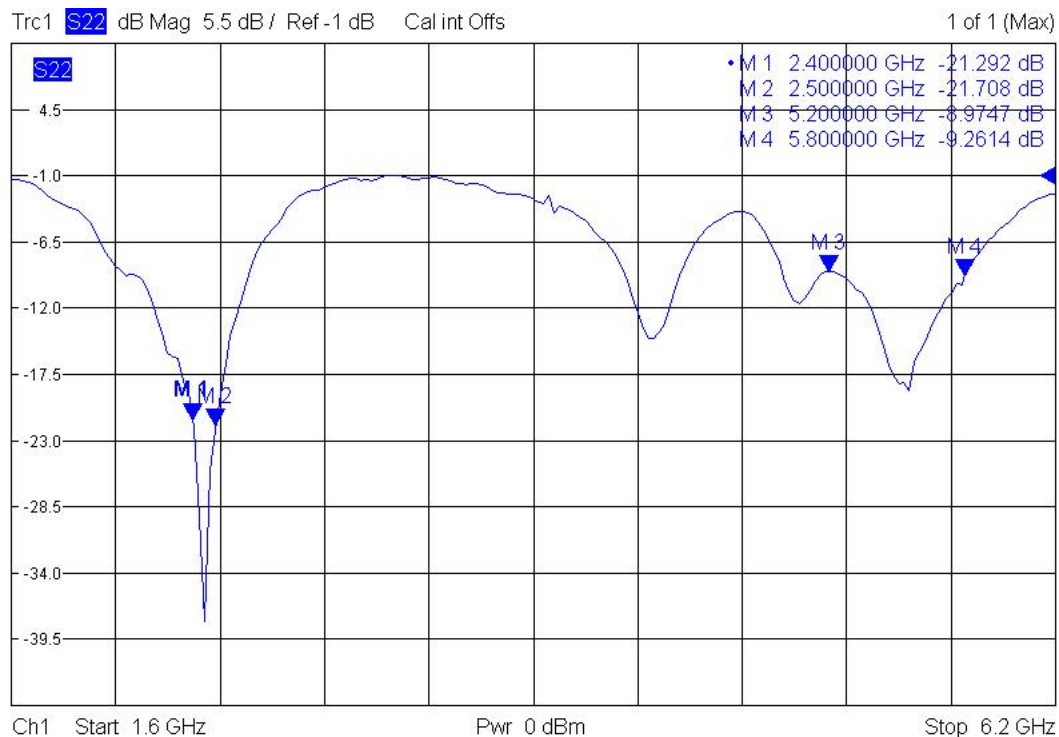
Series 2

NC

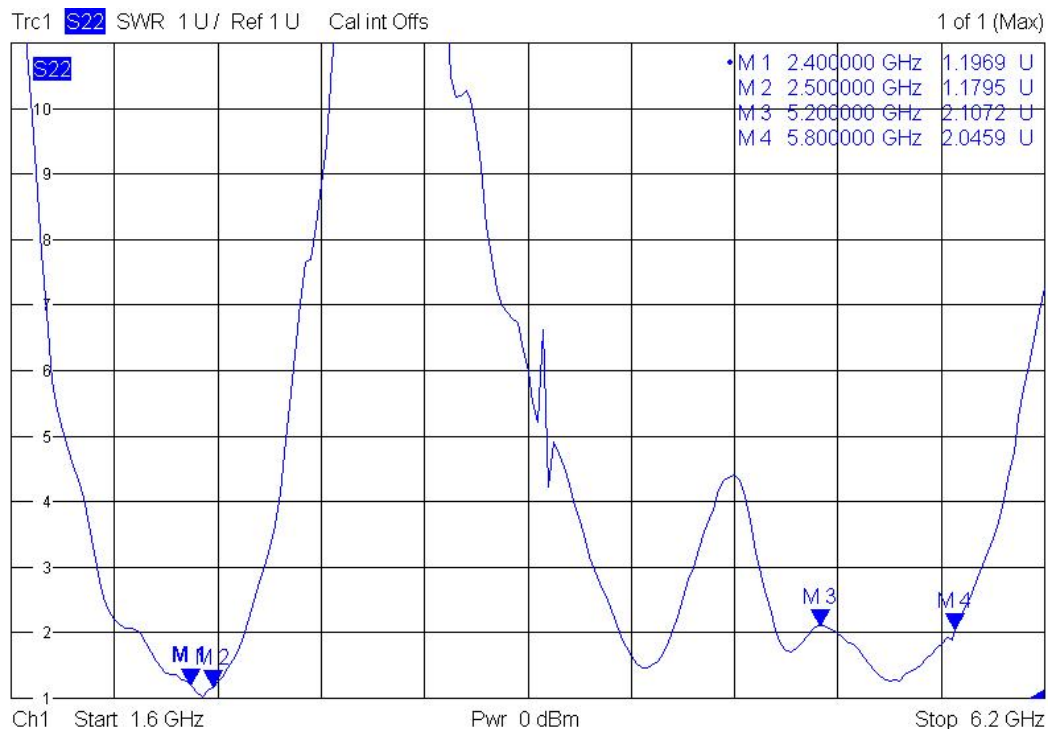
Antenna on Test Board (Thickness 1.0mm)



Antenna S11 on Test Board

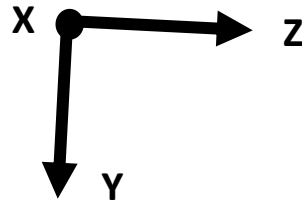
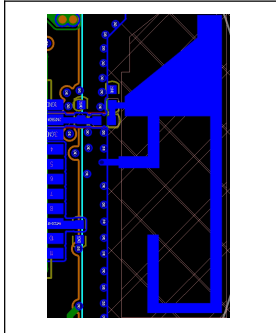


Antenna VSWR on Test Board



Efficiency and RADIATION PATTERN

Efficiency , Radiation Pattern and Gain were dependent on measurement board design. The specification antenna was measured based on the PCB size and installation position as shown in the below figure test board. The test results were tested in ETS 3D Chamber.



Gain and Efficiency	2.4G-2.5GHz	5.2G-5.8GHz
Peak Gain	4.74dBi	4.69dBi
Average Gain across the band	4.33dBi	3.83dBi
Gain Range across the band	3.34dBi~4.74dBi	2.48dBi~4.69dBi
Peak Efficiency	95.5%	89.13%
Average Efficiency across the band	88.86%	80.39%
Efficiency Range across the band	78.89%~95.5%	60.12%~89.13%

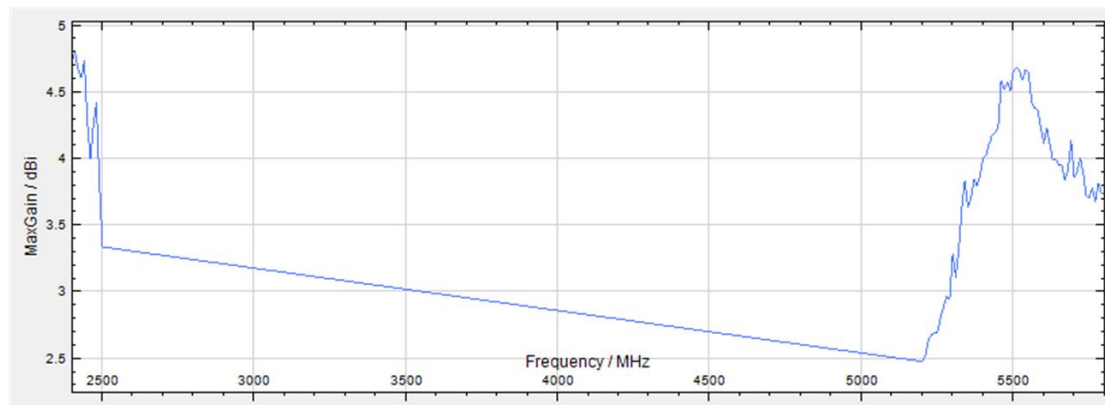
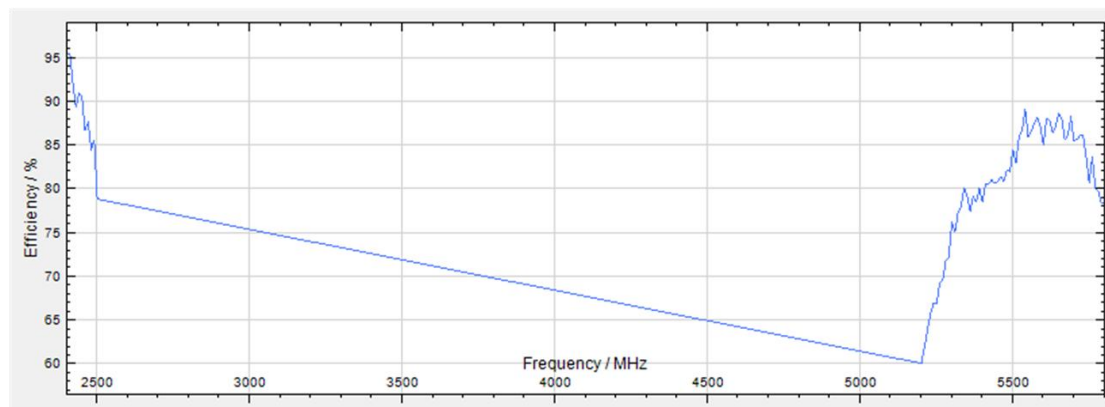
Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	4.74	95.5
2410	4.8	95.5
2420	4.67	92.04
2430	4.61	89.33
2440	4.74	90.99
2450	4.27	90.57
2460	4	86.7
2470	4.26	87.7
2480	4.42	84.53
2490	3.81	85.7
2500	3.34	78.89
5200	2.48	60.12
5210	2.52	61.94
5220	2.64	63.97
5230	2.68	65.77
5240	2.7	66.99
5250	2.7	66.99
5260	2.81	69.34
5270	2.89	69.66
5280	2.97	71.78

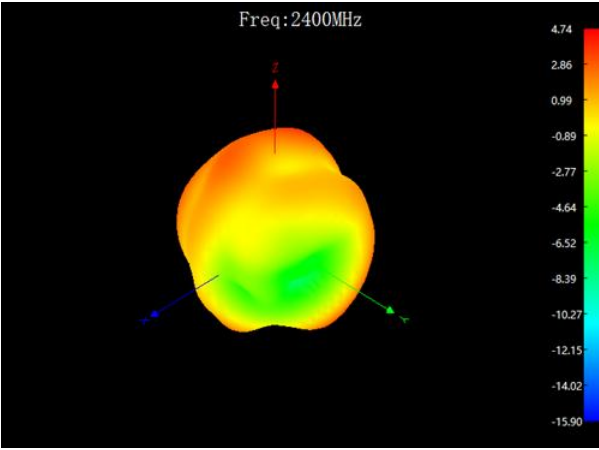
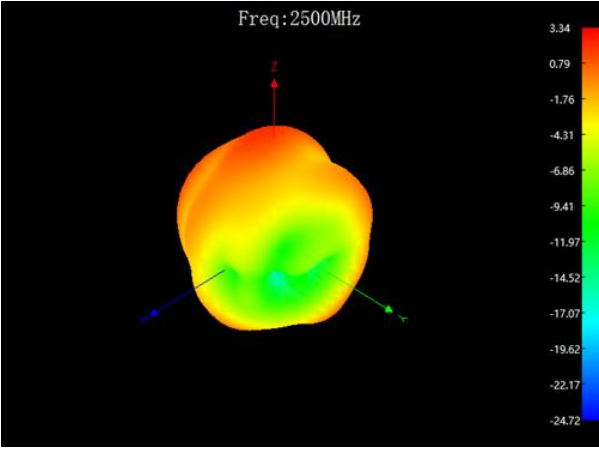
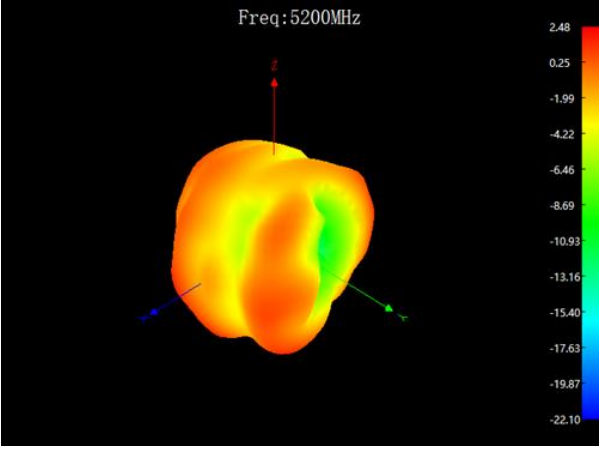
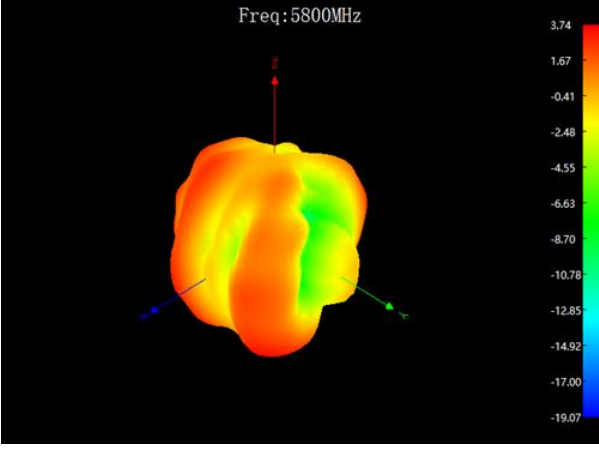
Approval sheet

5290	2.95	72.28
5300	3.29	76.21
5310	3.11	75.16
5320	3.33	77.27
5330	3.63	77.98
5340	3.84	80.17
5350	3.64	79.25
5360	3.7	77.45
5370	3.85	79.25
5380	3.8	78.52
5390	3.87	80.17
5400	4.01	78.52
5410	4.03	80.54
5420	4.11	80.54
5430	4.18	81.1
5440	4.2	80.72
5450	4.24	80.91
5460	4.59	81.47
5470	4.52	80.91
5480	4.58	82.22
5490	4.51	82.04
5500	4.66	84.53
5510	4.69	82.99
5520	4.66	86.1
5530	4.59	86.7
5540	4.67	89.13
5550	4.65	85.9
5560	4.43	86.7
5570	4.38	87.5
5580	4.37	88.31
5590	4.24	87.1
5600	4.12	85.11
5610	4.23	88.1
5620	4.11	87.9
5630	3.99	86.5
5640	4	87.1
5650	3.95	88.72
5660	3.95	88.1
5670	3.84	85.7
5680	3.92	86.1
5690	4.14	88.31
5700	3.86	85.51
5710	3.9	85.7

Approval sheet

5720	4.01	86.1
5730	3.89	86.1
5740	3.72	83.75
5750	3.71	80.72
5760	3.78	83.75
5770	3.68	80.17
5780	3.82	79.8
5790	3.74	78.34
5800	3.74	78.52



@2.4GHz		Freq: 2400MHz  A 3D radiation pattern plot for 2.4GHz. The plot shows a main lobe pointing upwards along the z-axis, with two side lobes extending outwards along the x and y axes. The color scale ranges from -15.90 (blue) to 4.74 (red). The z-axis is labeled with a red arrow, the x-axis with a blue arrow, and the y-axis with a green arrow.
@2.5GHz		Freq: 2500MHz  A 3D radiation pattern plot for 2.5GHz. The plot shows a main lobe pointing upwards along the z-axis, with two side lobes extending outwards along the x and y axes. The color scale ranges from -24.72 (blue) to 3.34 (red). The z-axis is labeled with a red arrow, the x-axis with a blue arrow, and the y-axis with a green arrow.
@5.2GHz		Freq: 5200MHz  A 3D radiation pattern plot for 5.2GHz. The plot shows a main lobe pointing upwards along the z-axis, with two side lobes extending outwards along the x and y axes. The color scale ranges from -22.10 (blue) to 2.48 (red). The z-axis is labeled with a red arrow, the x-axis with a blue arrow, and the y-axis with a green arrow.
@5.8GHz		Freq: 5800MHz  A 3D radiation pattern plot for 5.8GHz. The plot shows a main lobe pointing upwards along the z-axis, with two side lobes extending outwards along the x and y axes. The color scale ranges from -19.07 (blue) to 3.74 (red). The z-axis is labeled with a red arrow, the x-axis with a blue arrow, and the y-axis with a green arrow.