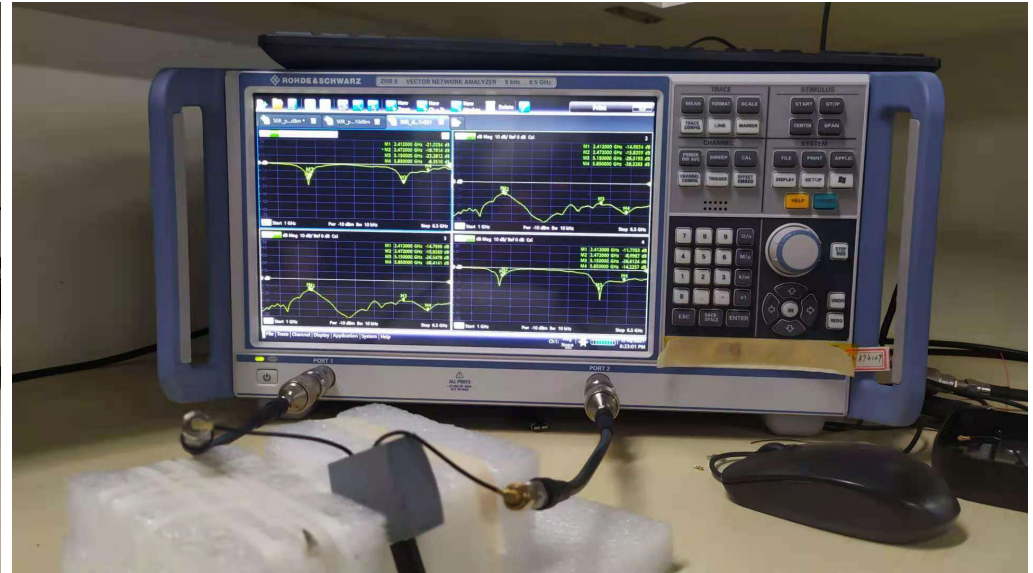
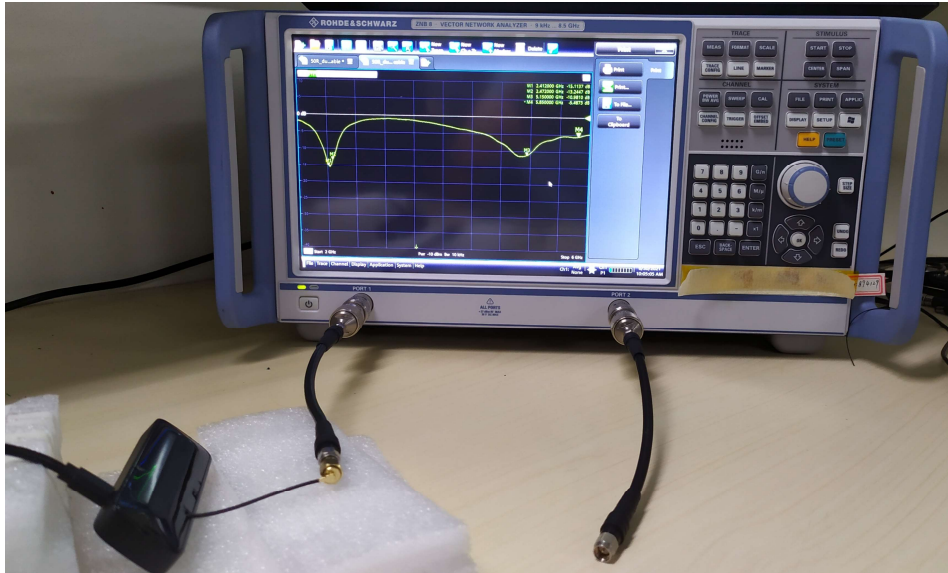


OTA Passive Test of HP46D Antenna

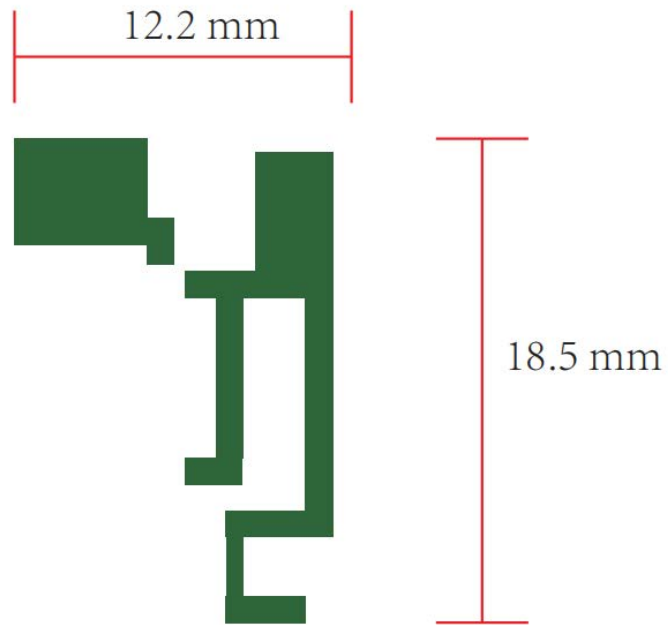
Passive s-parameter test environment:



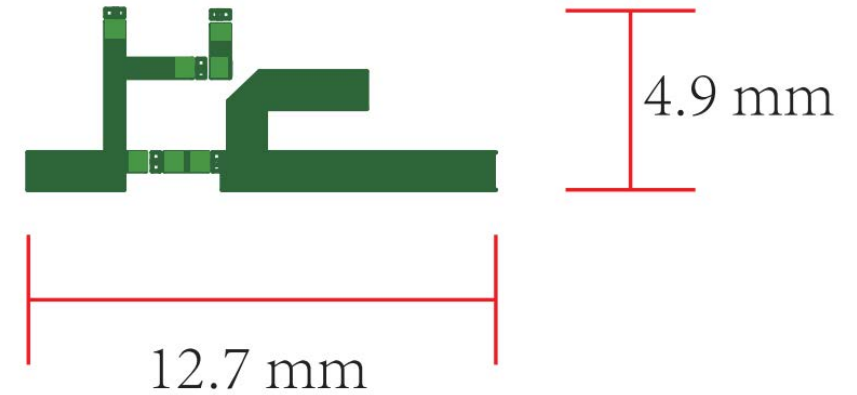
illustrate:

1. This test uses the PCB optimized by the latest design, and the length of RF Cable used in the test is 7 cm; According to the actual use scene with USB Cable;
2. ANT0 is the antenna at the bottom of PCB, and ANT1 is the antenna on the left side of PCB (Micro USB port side);

ANT0:



ANT1:



Test conclusion:

1. The return loss (S_{11}) of ANT0 is less than -14.5 dB in 2.4GHz Band ;
2. The return loss (S_{11}) of ANT1 is less than -19.8 dB in 2.4GHz Band ;
3. The isolation (S_{21}) of ANT0 and ANT1 is better than -15.0 dB at 2.4GHz Band ;
4. The efficiency of ANT0 is about 53% at 2.4GHz Band .
5. The efficiency of ANT1 is between 56% and 61% at 2.4GHz Band.

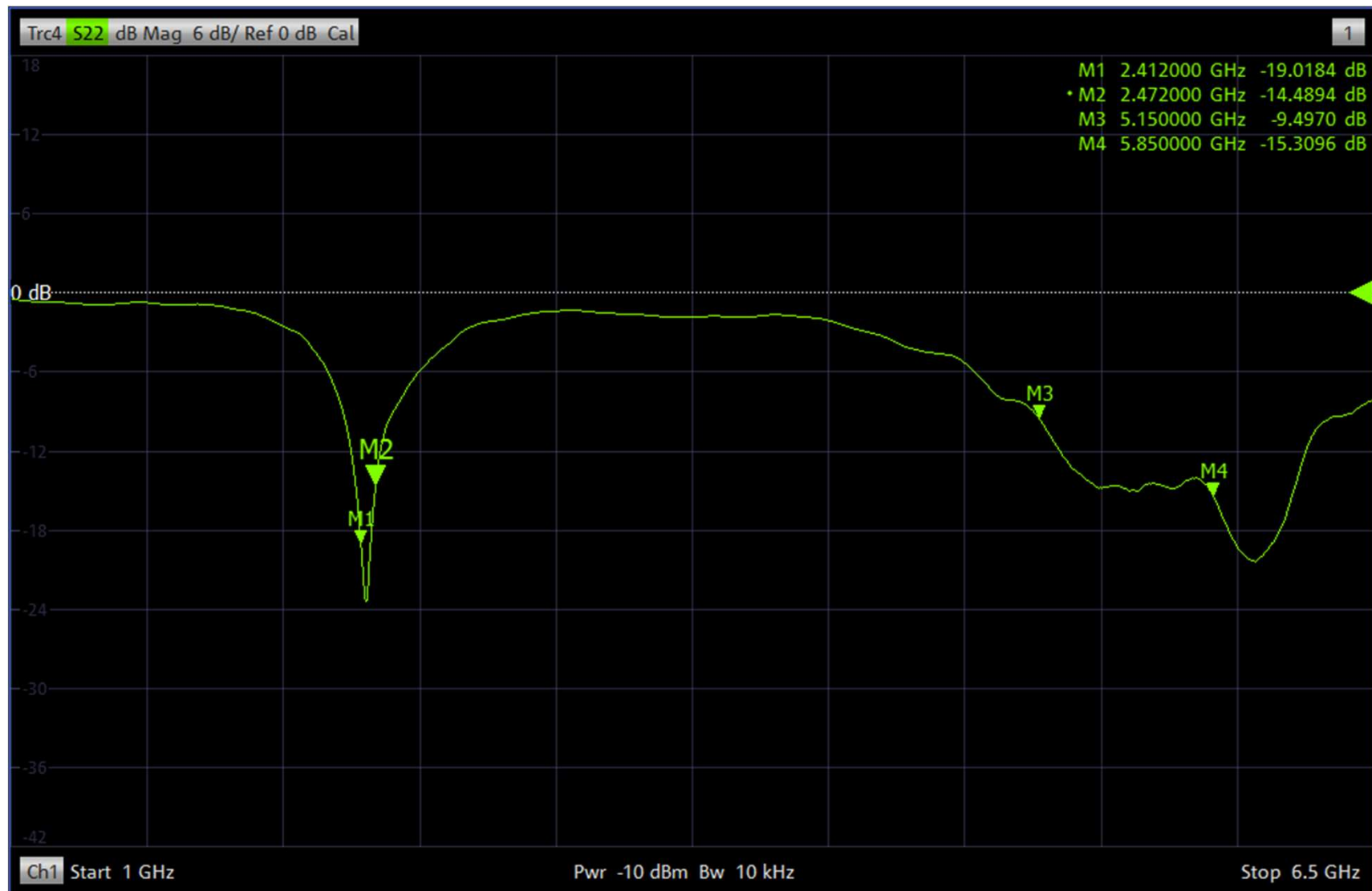
Antenna OTA passive test

OTA testing environment:



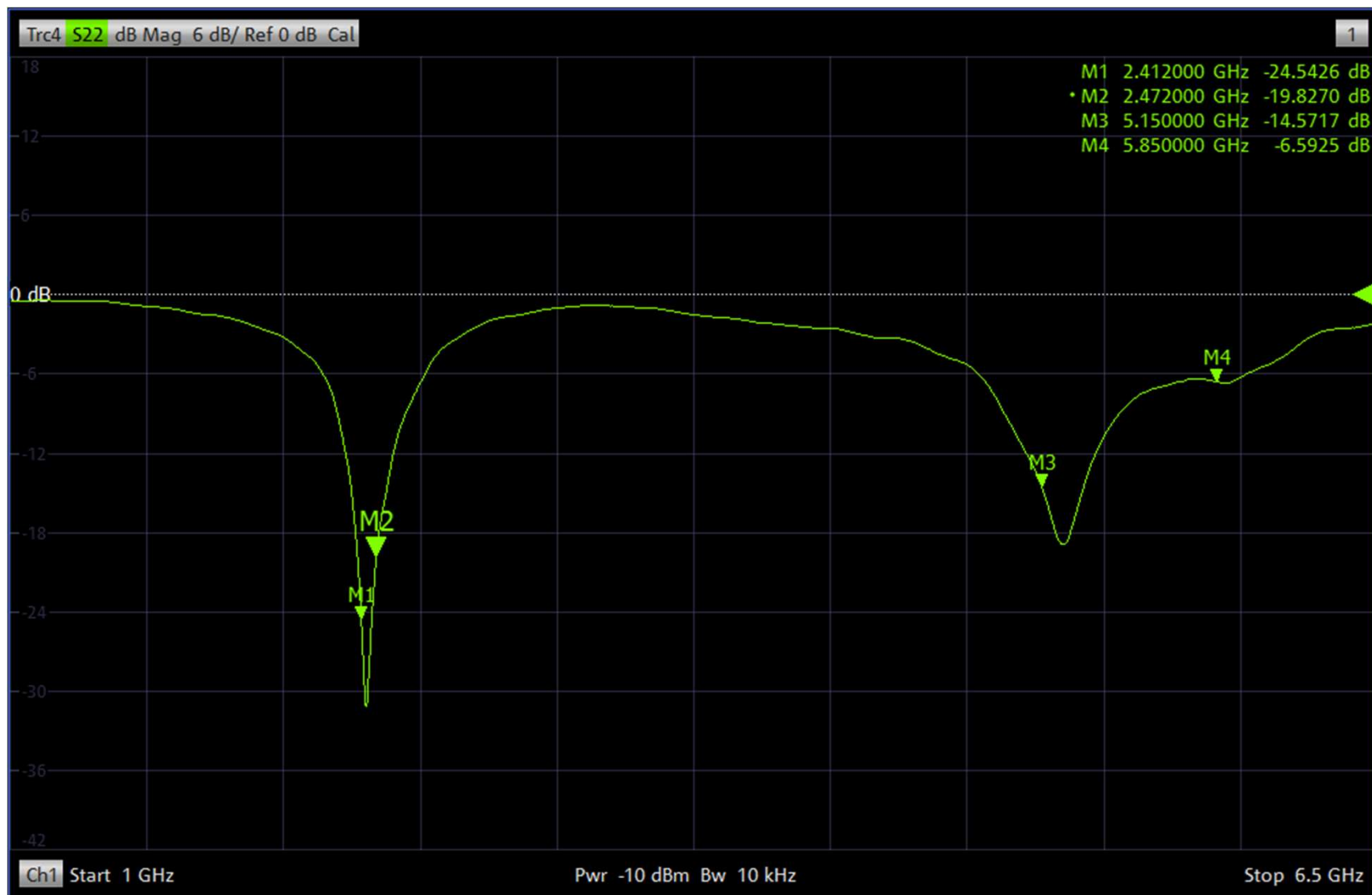
Passive test of antenna OTA

S11return loss parameter ANT0: 2.4GHz and 5GHz Bands



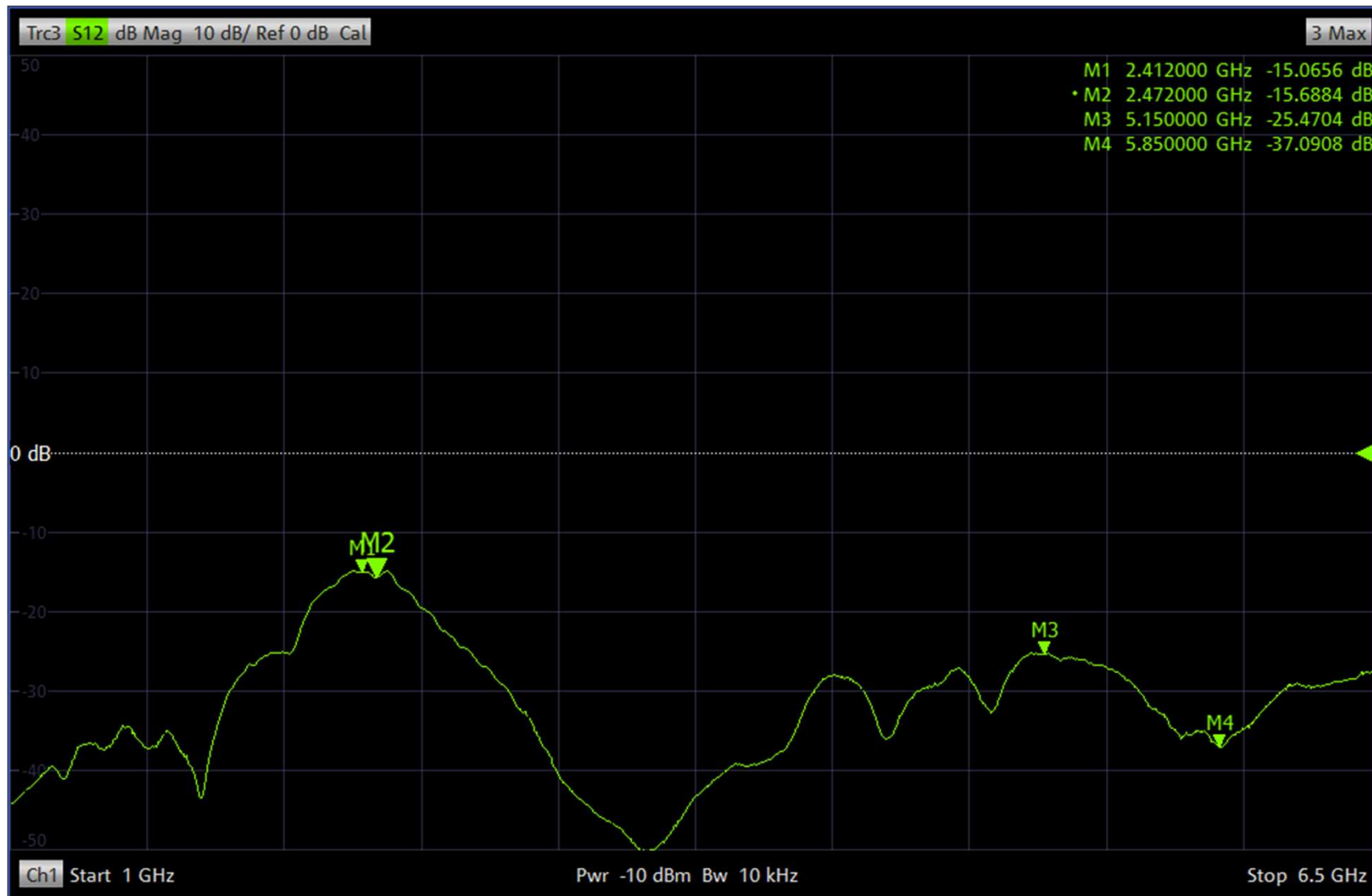
Passive test of antenna OTA

S11 return loss parameter ANT0: 2.4GHz and 5GHz Bands



Passive test of antenna OTA

Isolation S12 or S21 Return Loss Parameter_ANT0 & ANT1: 2.4GHz and 5GHz Bands



Comparison of passive parameters of antenna OTA (efficiency, gain, pattern)

Efficiency、gain：2.4GHz Band ANT0

Point Values	Ant. Port Input Pwr. (dBm)	Tot. Rad. Pwr. (dBm)	Peak EIRP (dBm)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
Frequency (MHz)							
2400	0	-2.69327	1.94148	4.63476	-2.69327	53.7864	1.94148
2410	0	-2.61561	1.93843	4.55404	-2.61561	54.7569	1.93843
2420	0	-2.70935	1.60925	4.3186	-2.70935	53.5877	1.60925
2430	0	-2.74516	1.22867	3.97382	-2.74516	53.1477	1.22867
2440	0	-2.76578	1.15158	3.91736	-2.76578	52.8959	1.15158
2450	0	-2.797	1.07441	3.87141	-2.797	52.517	1.07441
2460	0	-2.73079	1.30215	4.03294	-2.73079	53.3237	1.30215
2470	0	-2.73238	1.81068	4.54306	-2.73238	53.3043	1.81068
2480	0	-2.69293	2.02696	4.71989	-2.69293	53.7907	2.02696
2490	0	-2.688	2.35329	5.04129	-2.688	53.8517	2.35329

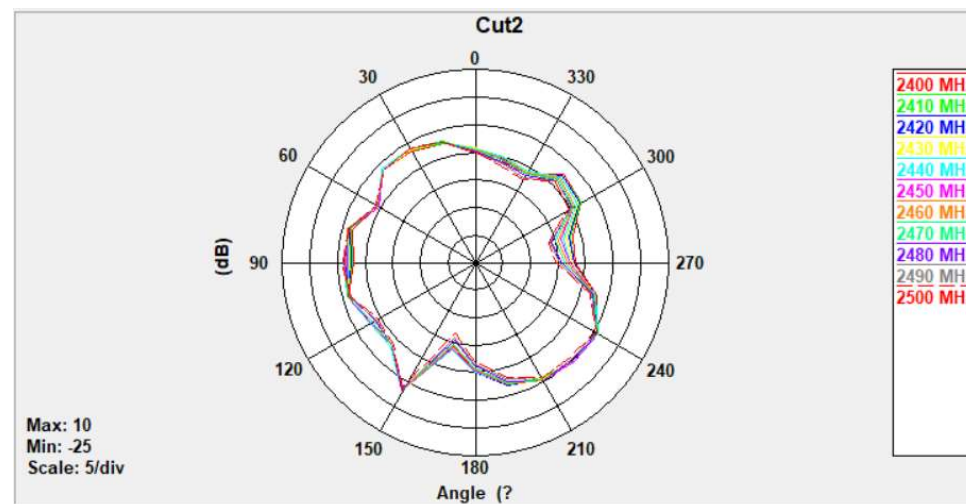
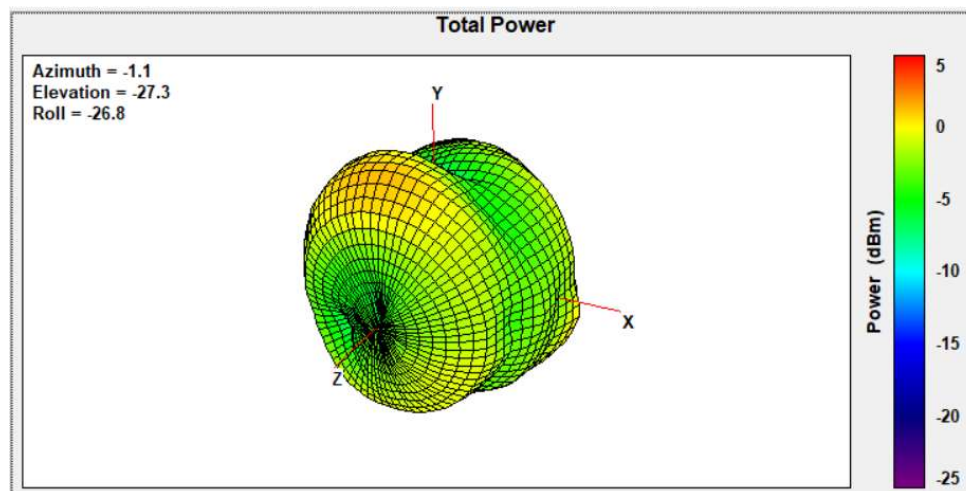
Comparison of passive parameters of antenna OTA (efficiency, gain, pattern)

Efficiency、 gain : 2.4GHz Band ANT1

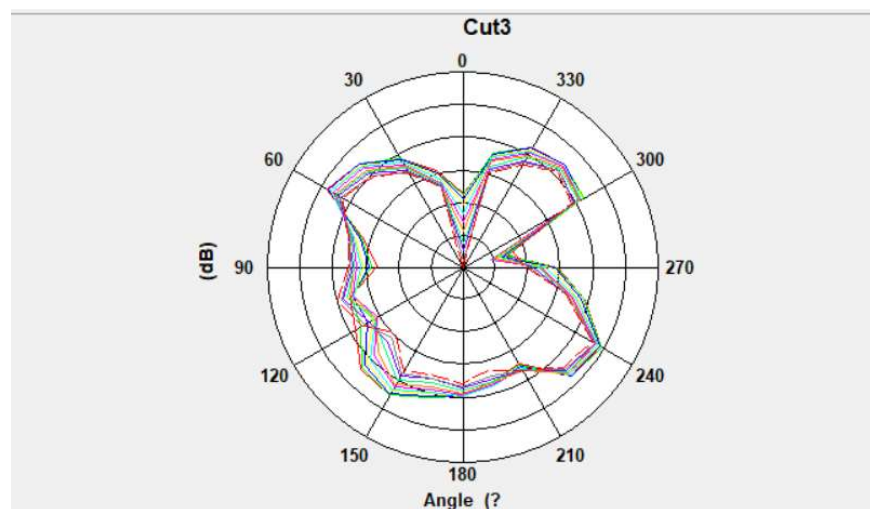
Point Values	Ant. Port Input Pwr. (dBm)	Tot. Rad. Pwr. (dBm)	Peak EIRP (dBm)	Directivity (dBi)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
Frequency (MHz)							
2400	0	-2.48865	4.34557	6.83422	-2.48865	56.3813	4.34557
2410	0	-2.42178	4.27912	6.7009	-2.42178	57.2562	4.27912
2420	0	-2.39941	4.3508	6.7502	-2.39941	57.5518	4.3508
2430	0	-2.30645	4.38367	6.69013	-2.30645	58.7969	4.38367
2440	0	-2.19739	4.62513	6.82252	-2.19739	60.2922	4.62513
2450	0	-2.1688	4.67342	6.84222	-2.1688	60.6904	4.67342
2460	0	-2.10454	4.77275	6.8773	-2.10454	61.595	4.77275
2470	0	-2.10109	4.83372	6.93481	-2.10109	61.644	4.83372
2480	0	-2.12974	4.79969	6.92943	-2.12974	61.2387	4.79969
2490	0	-2.17376	4.70949	6.88325	-2.17376	60.6211	4.70949
2500	0	-2.21869	4.56778	6.78646	-2.21869	59.9973	4.56778

Comparison of passive parameters of antenna OTA (efficiency, gain, pattern)

directional diagram: 2.4GHz Band ANT0

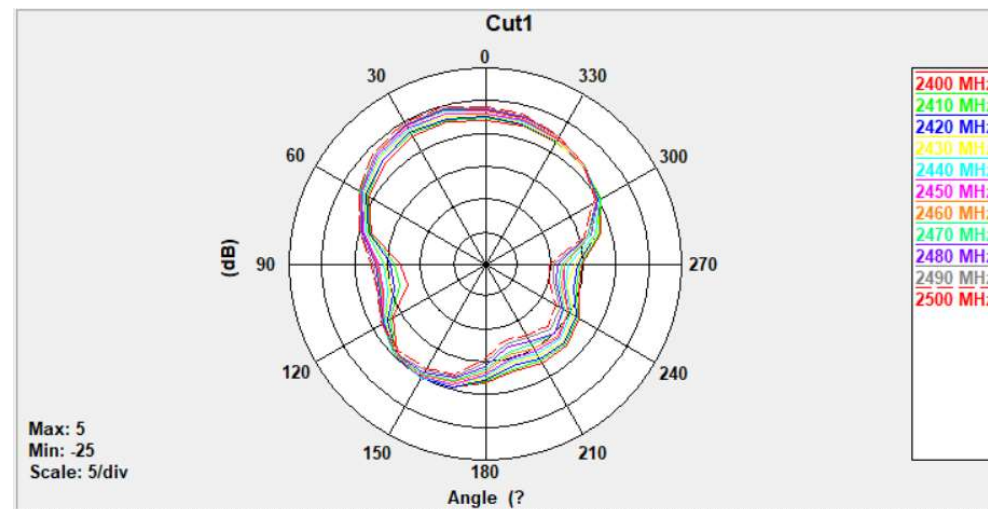


3D



E2

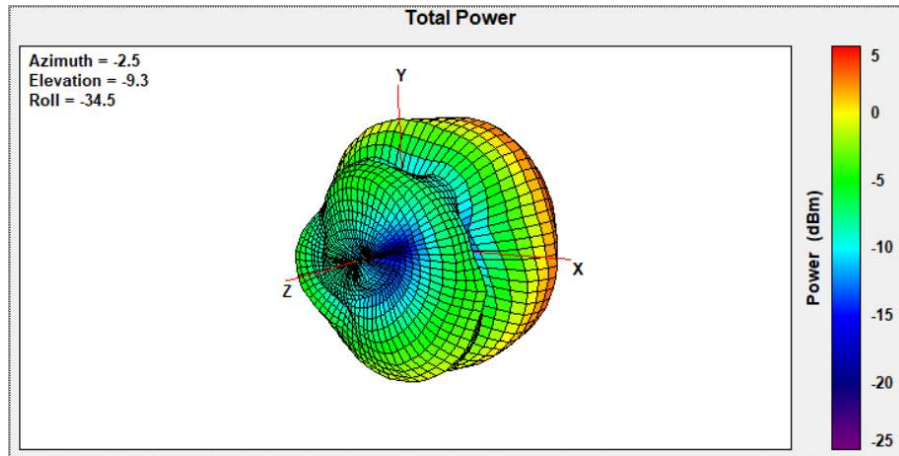
E1



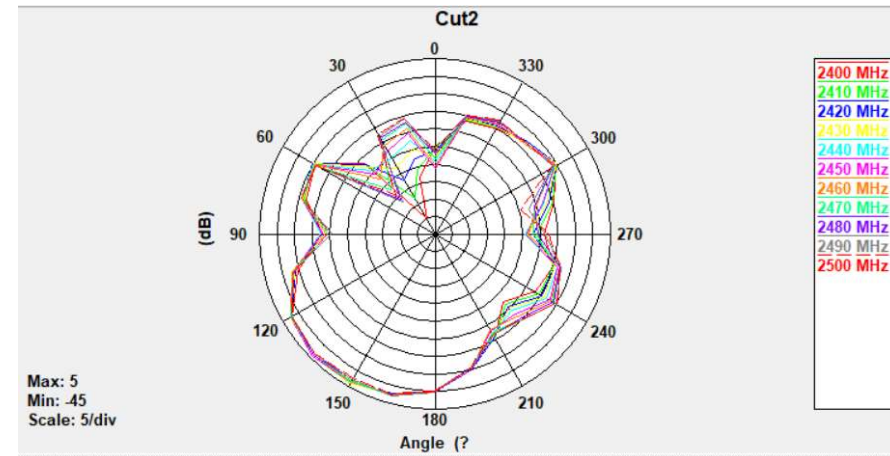
H

Comparison of passive parameters of antenna OTA (efficiency, gain, pattern)

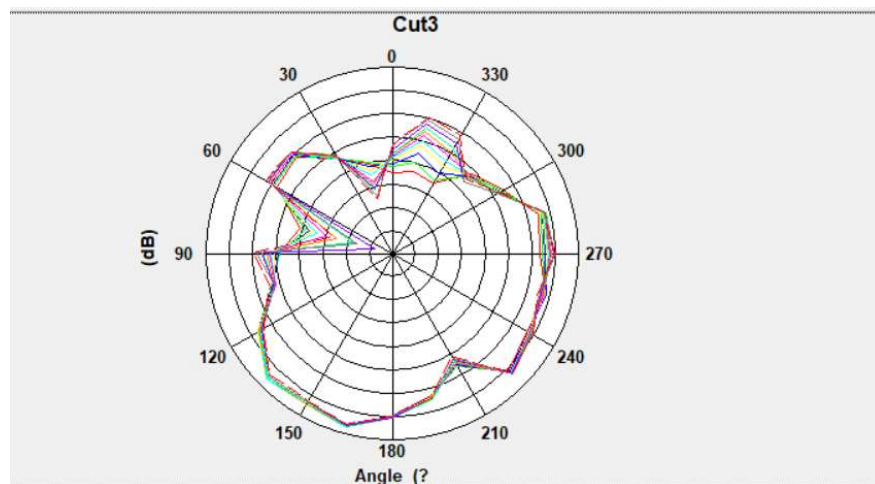
directional diagram: 2.4GHz Band ANT1



3D



E1



E2



H