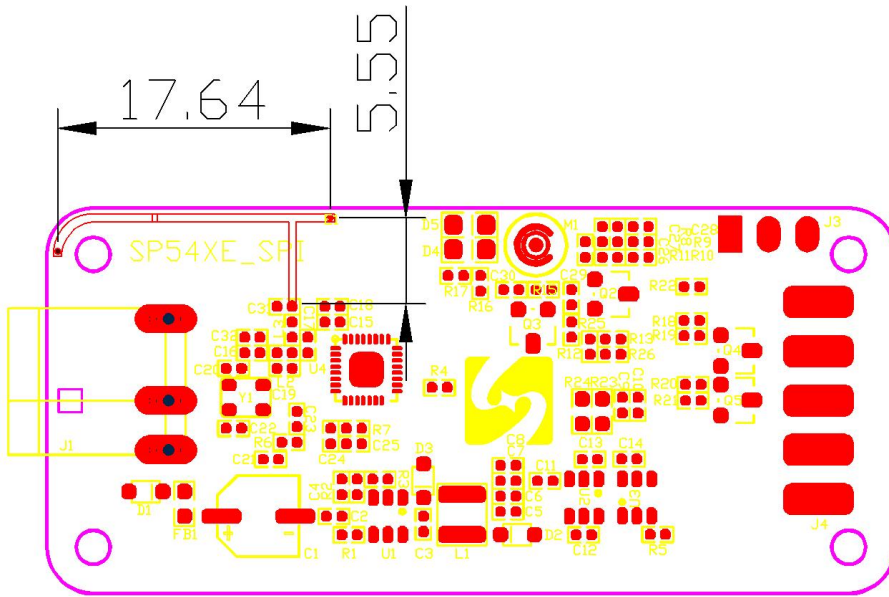


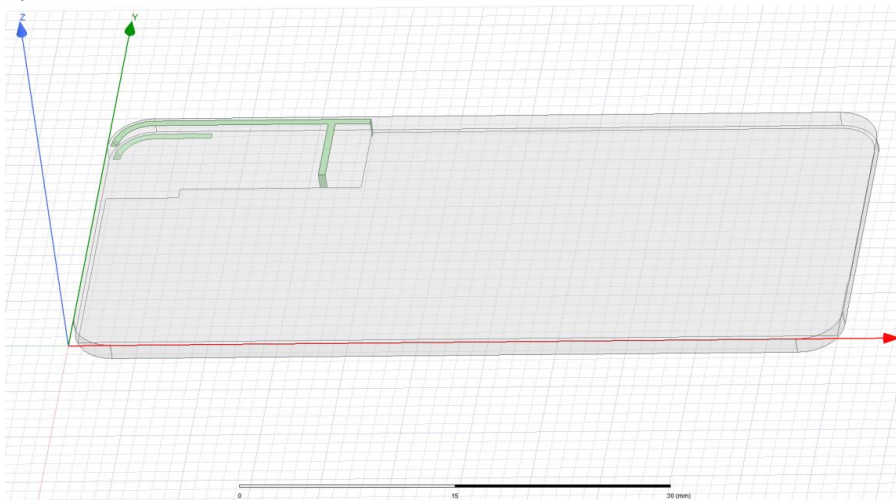
SP54XE Antenna Specifications

1. Antenna location and size (mm) :

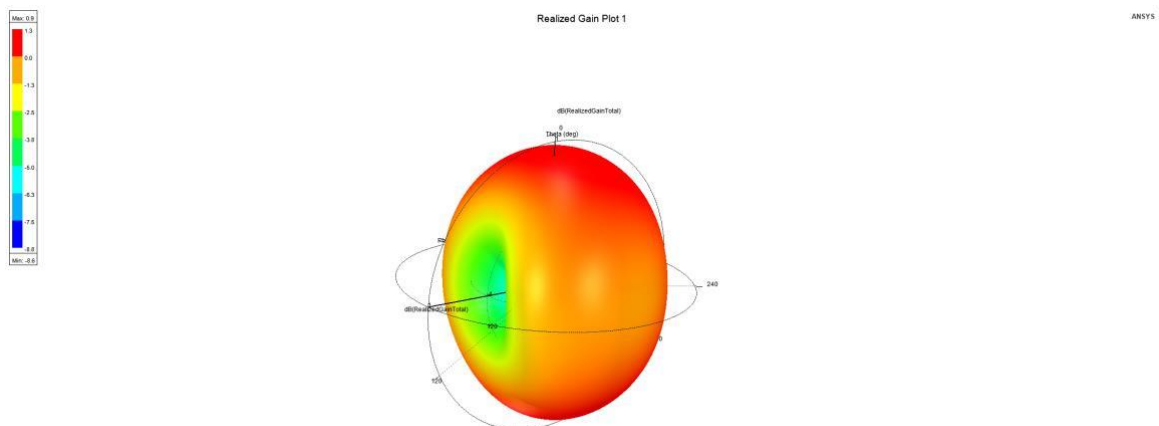


2. Antenna simulation Report:

1) Antenna Simulation Model :

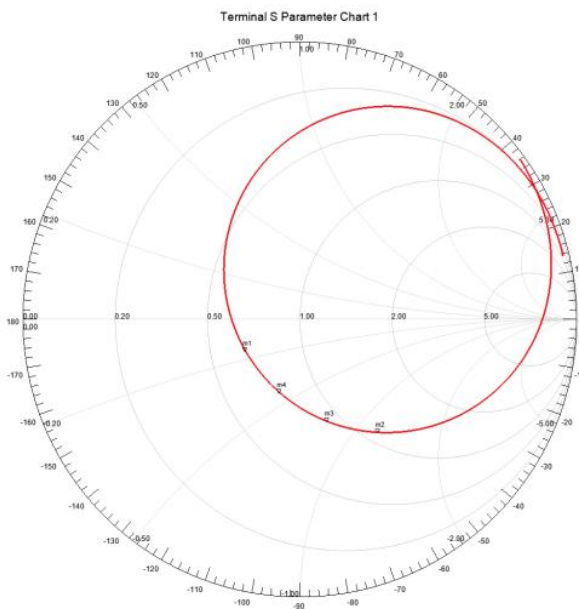


2) 3D Polar plot:



3) Smithchart:

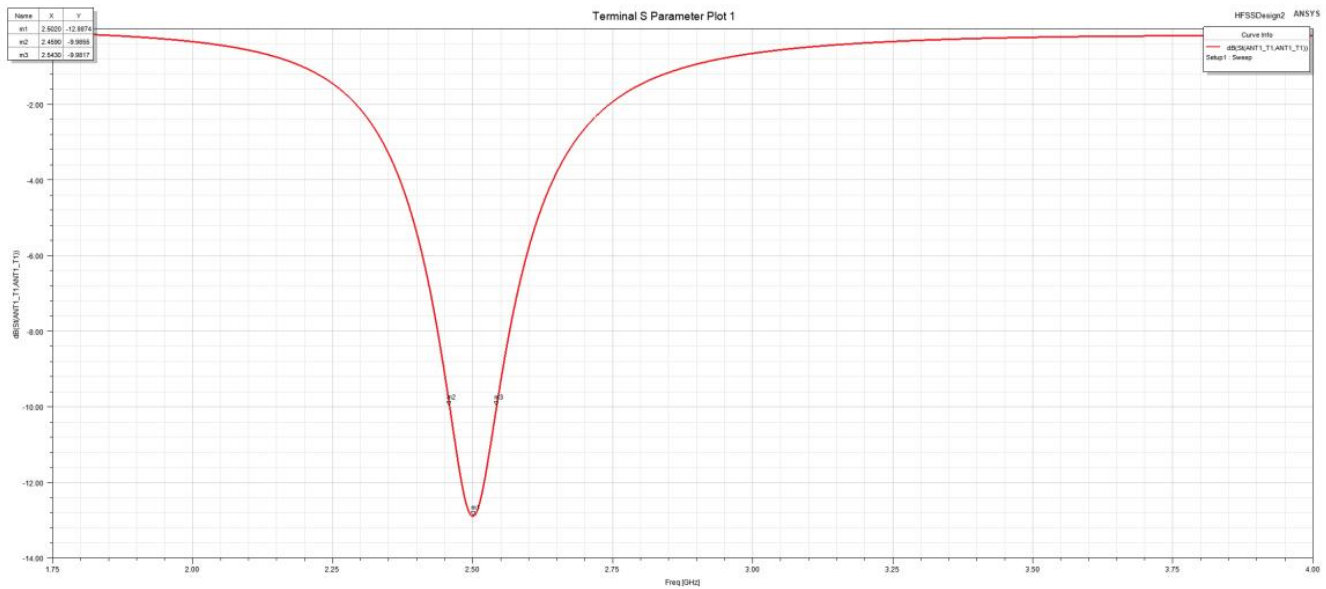
Name	Freq	Ang	Mag	RIX
s1	2.5000	-149.5288	0.2268	0.8679 - 0.1594
s2	2.4120	-85.2988	0.4954	1.1096 - 1.1963
s3	2.4420	-74.7991	0.3810	0.8042 - 0.7779
s4	2.4720	-106.3334	0.2736	0.7867 - 0.4326



HFSSDesign2 ANSYS	
Curve Info	
dB(S11ANT_L1)	
Setup 1 Sweep	

4) S11:

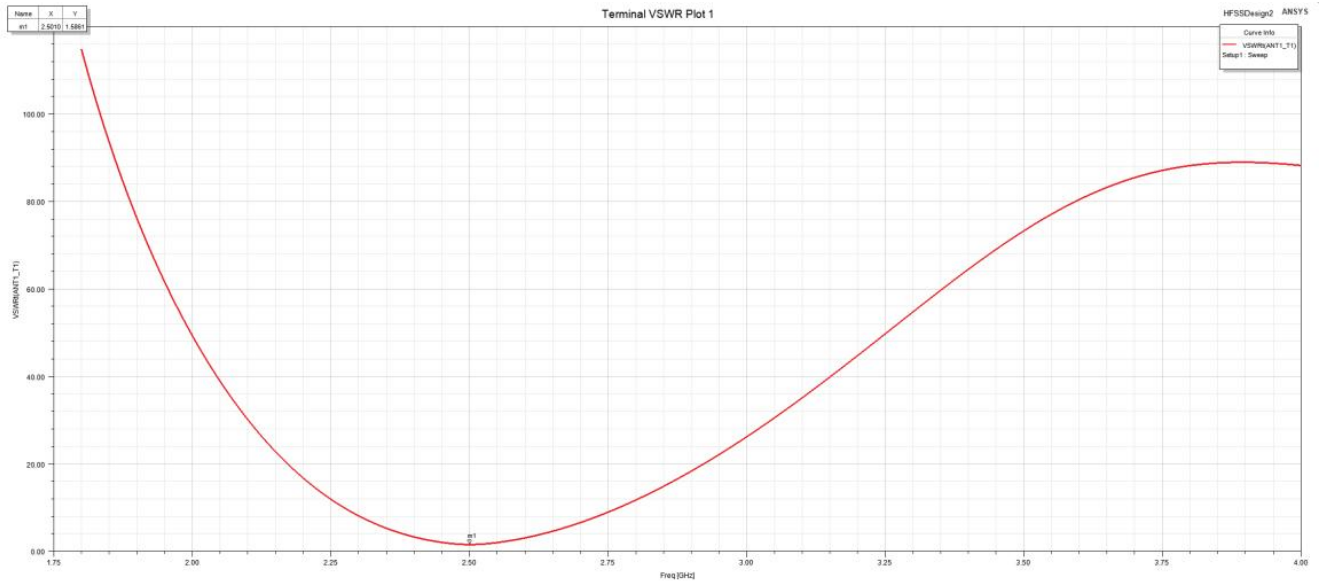
Name	X	Y
s1	2.5020	-12.8874
s2	2.4390	-9.9999
s3	2.4630	-9.9817



HFSSDesign2 ANSYS	
Curve Info	
dB(S11ANT_L1)	
Setup 1 Sweep	

5) VSWR:

Name	X	Y
s1	2.5010	1.6861



HFSSDesign2 ANSYS	
Curve Info	
VSWR(ANT_L1)	
Setup 1 Sweep	

3. Test Report:

1) Appearance :



2) Antenna Smithchart ,VSWR and Return Loss:



4. Basic Characteristics:

A. Electrical Characteristics:	
Frequency	2400~2500 MHz
S.W.R.	≤ 2.5 @2400~2500 MHz
Max. Gain	1.5 dBi @2400~2500 MHz
Efficiency	40~50% @2400~2500 MHz
Polarization	Linear
Impedance	50 Ohm
B. Material & Mechanical Characteristics:	
Material of Radiator	PCB
Cable Type	NONE
Connector Type	NONE
Pull Test	/

C.Environmental:	
Operation Temperature	-20°C~+60°C
Storage Temperature	-40°C~+80°C

5.Gain and Efficiency:

frequency (GHz)	2.4	2.41	2.42	2.43	2.44	2.45	2.46	2.47	2.48	2.49	2.5
efficiency (%)	35.10	36.12	36.68	38.46	39.61	38.9	42.24	44.12	43.00	41.21	39.98
Gain (dBi)	1.13	1.28	1.41	1.12	1.2	0.98	1.23	1.5	1.42	1.3	1.23