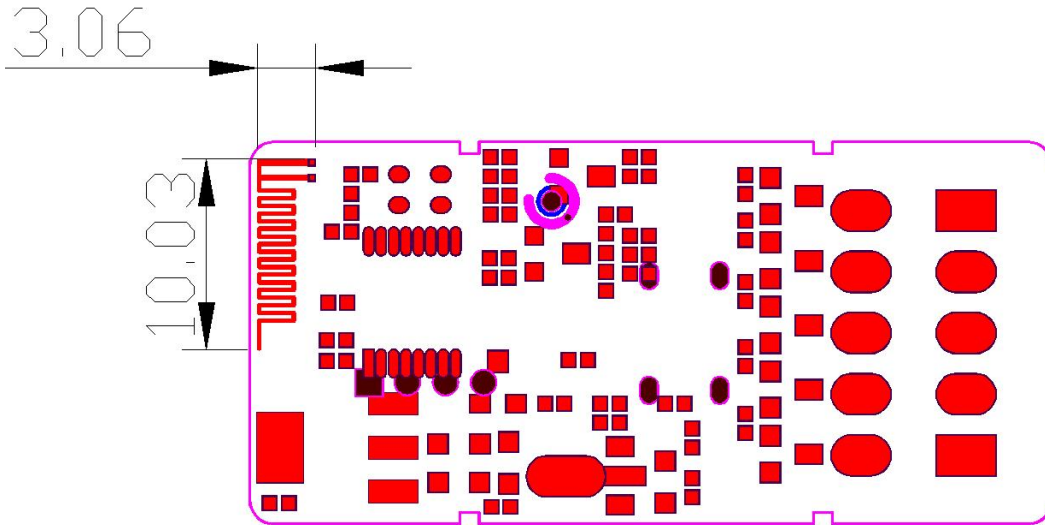


SP64XE Antenna Specifications

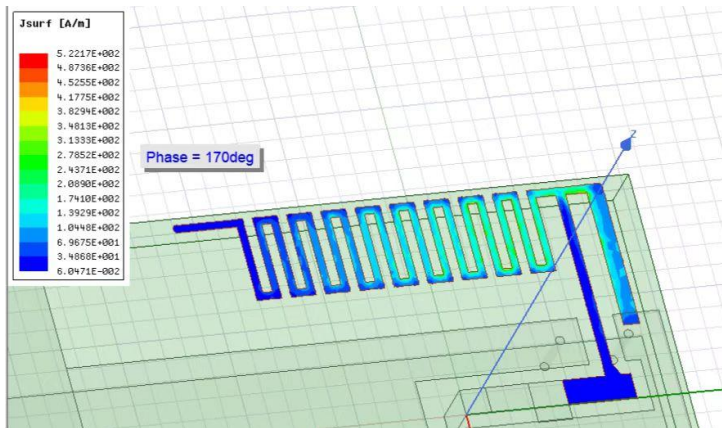
Manufacturer : Shenzhen Sperll Optoelectronic Technology Co., Ltd.

1. Antenna location and size (mm) :

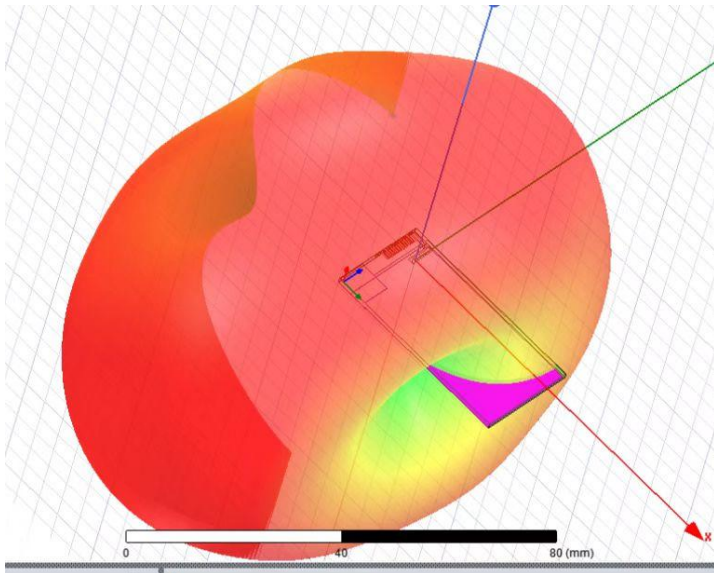


2. Antenna simulation Report:

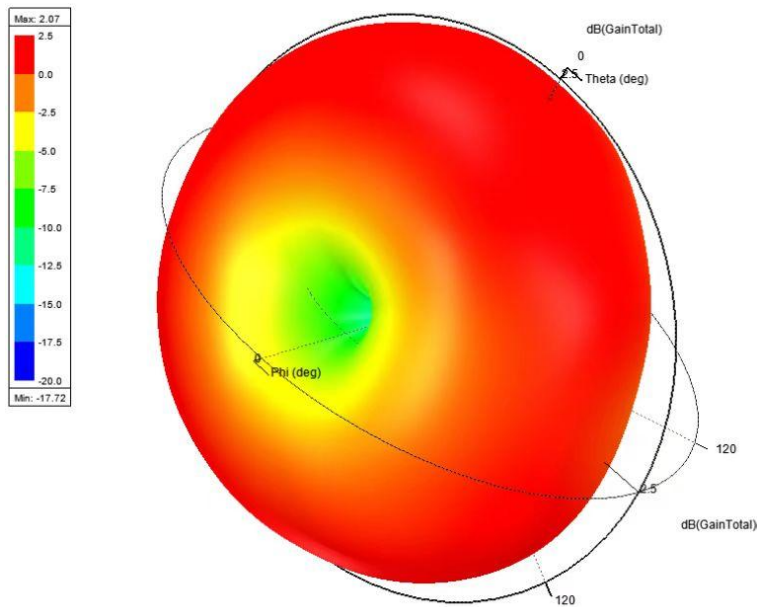
1) Antenna surface current distribution :



2) Antenna and antenna radiation pattern:

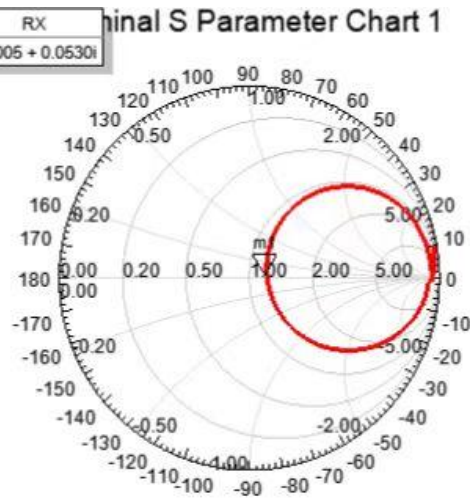


3) Antenna radiation pattern and gain pattern:

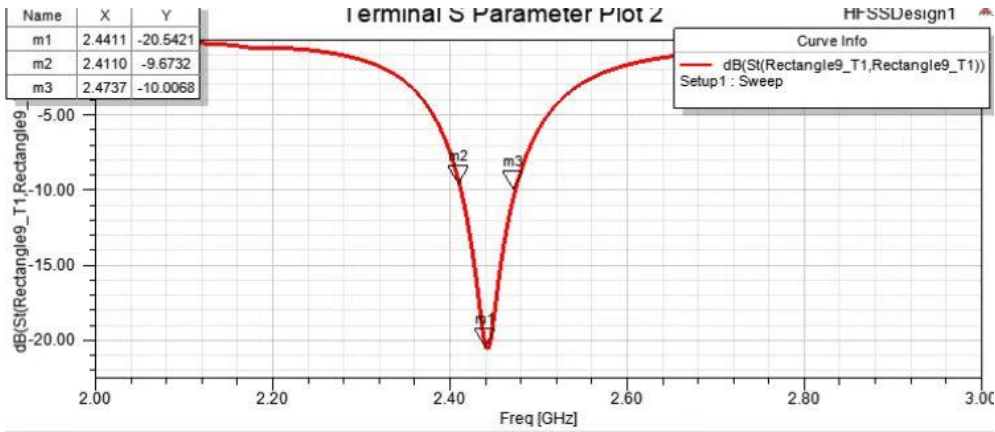


4) Smithchart:

Name	Freq	Ang	Mag	RX
m1	2.4436	13.4137	0.0942	1.2005 + 0.0530i

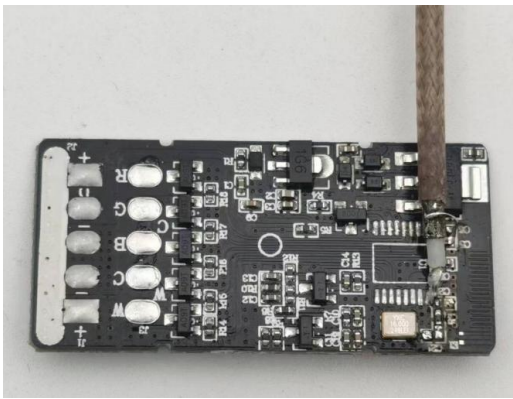


5) S Parameter Plot:

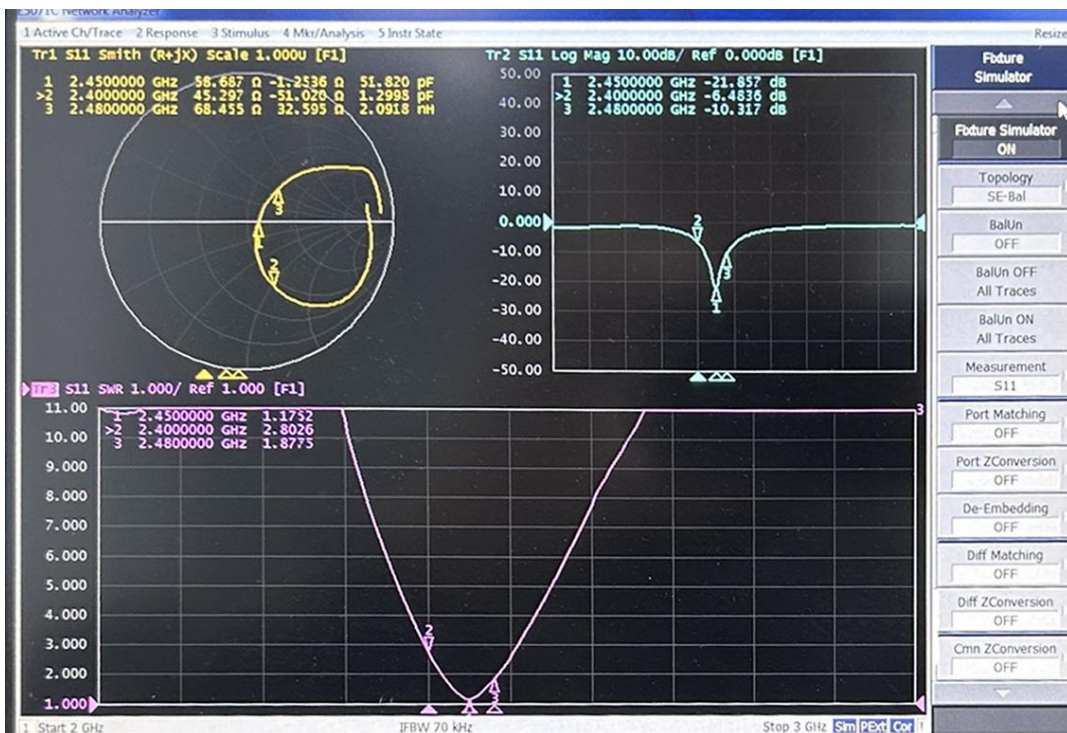


3. Test Report:

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	2.5 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	0.D.1.13 mm//112mm (gray)
Connector Type	NONE
Pull Test	/
C.Environmental:	
Operation Temperature	-40°C~+65°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 (%)	48.96	51.76	55.12	60.09	62.9	63.08	67.51	67.74	67.76	66.47	71.02
Gain (dBi)	2.00	2.00	1.98	2.00	2.00	2.50	2.00	1.98	2.00	1.99	2.00