

BT Antenna Test Report Prepared for 豪恩声学【蓝牙耳机 CB019】 Project

Author ken

Date 2025/03/05

Client Information

Client	豪恩声学
Engineer of Client	
Project Name	CB019
Project Stage	☐ Evaluation ☒ EVT ☐ DVT ☐ PVT
Antenna Type	Linear Polarization
Antenna Band	2400~2500MHz
Antenna Engineer	ken

Tuning Note

Version	Date	Revision Description	Designer
01	2025/3/5	Version 1	Ken

Antenna Info

LNA Name	Material	Dimension	Feed-In Location	PIN Length

1. Test Content :

BT Antenna in CB019 pattern measurement

2. Test Item :

Efficiency 、 Radiation Pattern 、 Total Gain 、 Average Gain

3. Test Setting :

Network Analyzer : Agilent E5071C

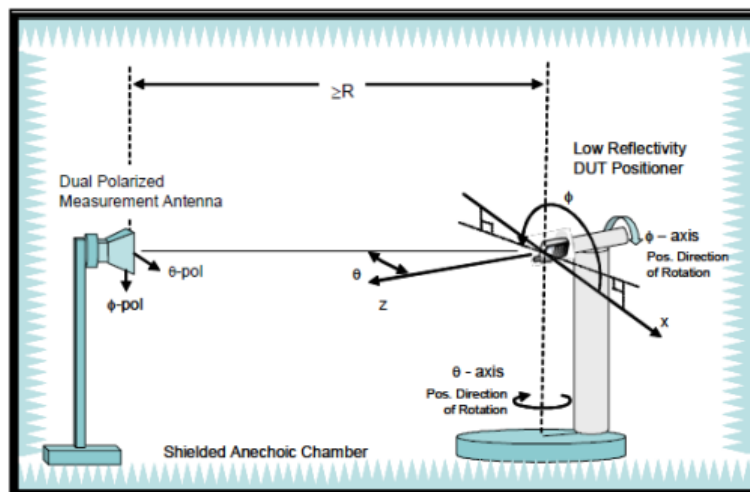
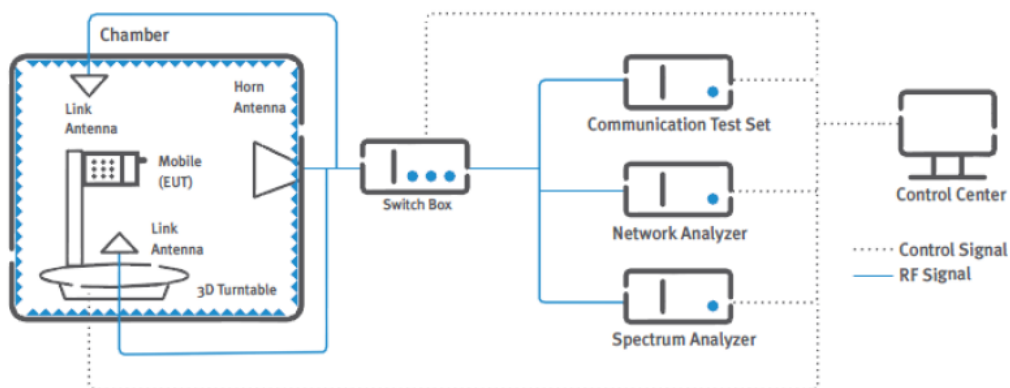
Source Antenna : Dual Polarization Horn Antenna

Test Frequency : 2400~2480MHz

4. Test Environment :

Room temperature : 22°C Humidity : 31%

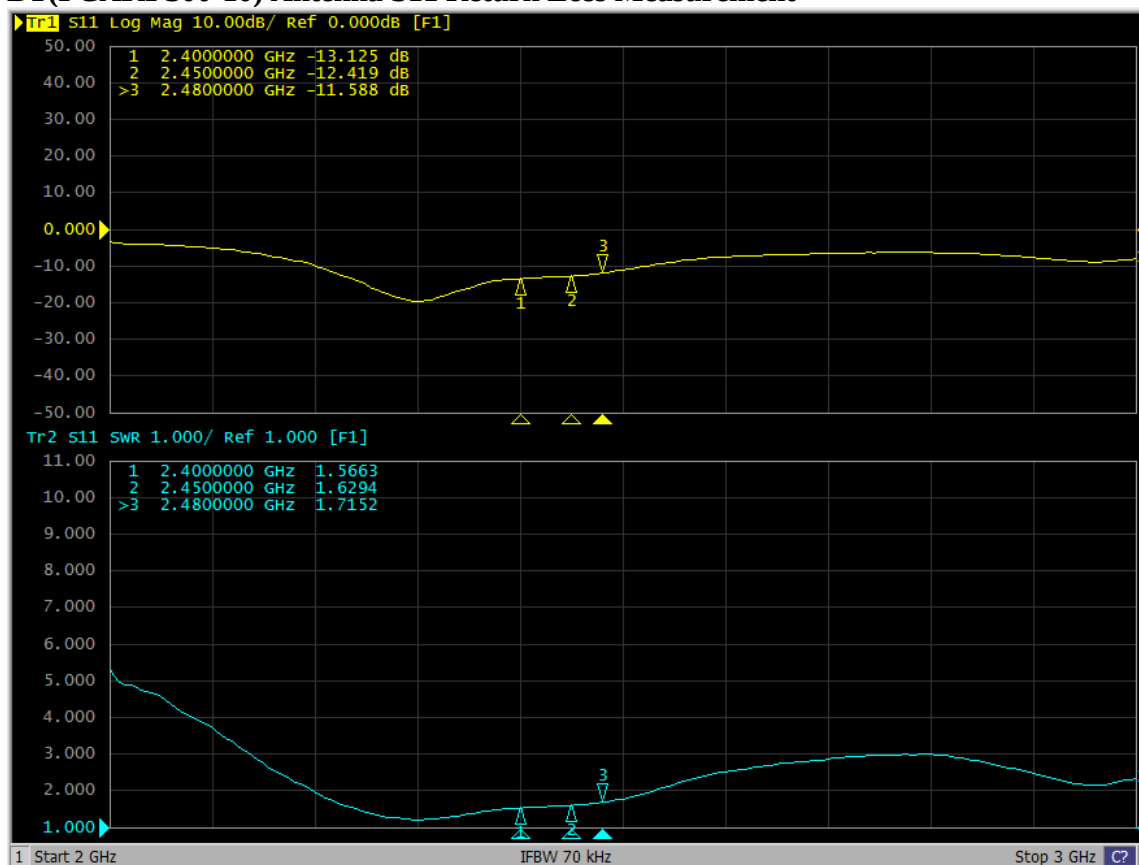
5. Test Schematic Drawing of Setting :



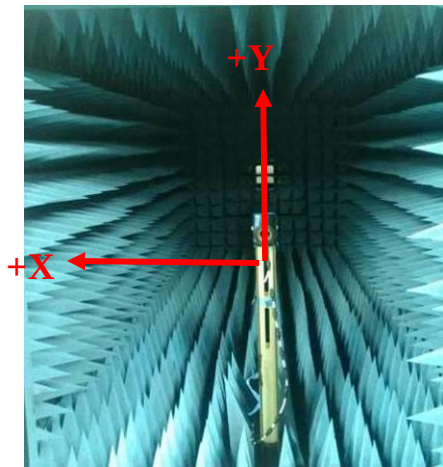
6. Test Data

Environment (咪杆不打开)

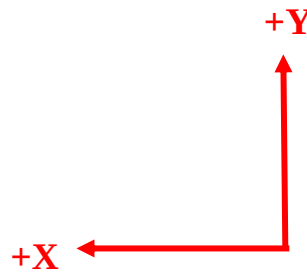
BT(PCAKFS00-10) Antenna S11 Return Loss Measurement



Coordinate

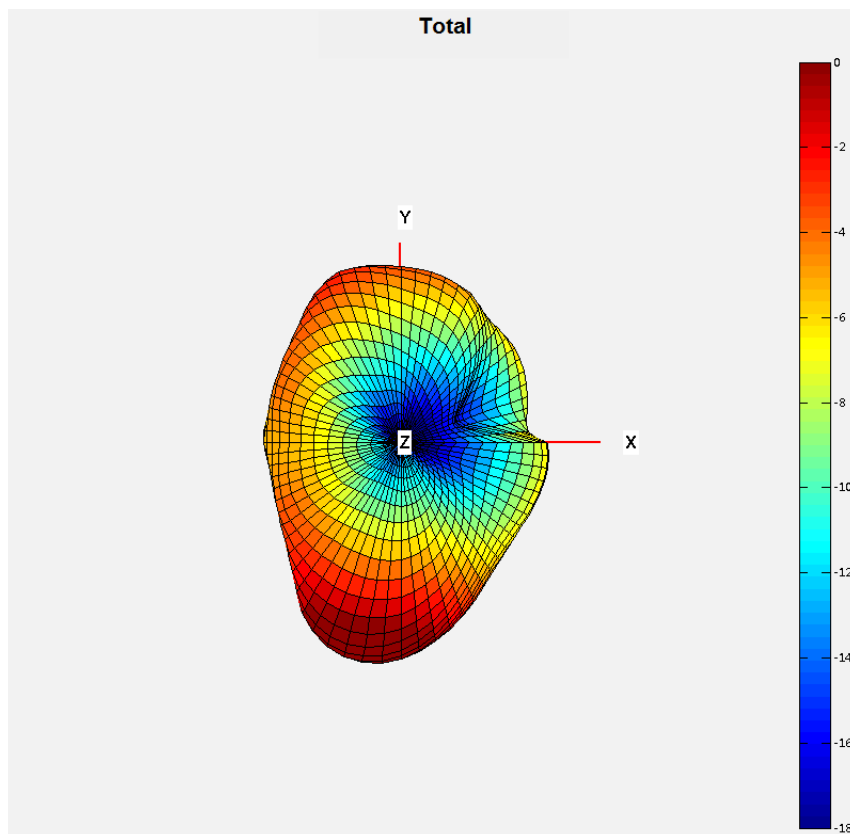


Chamber coordinate

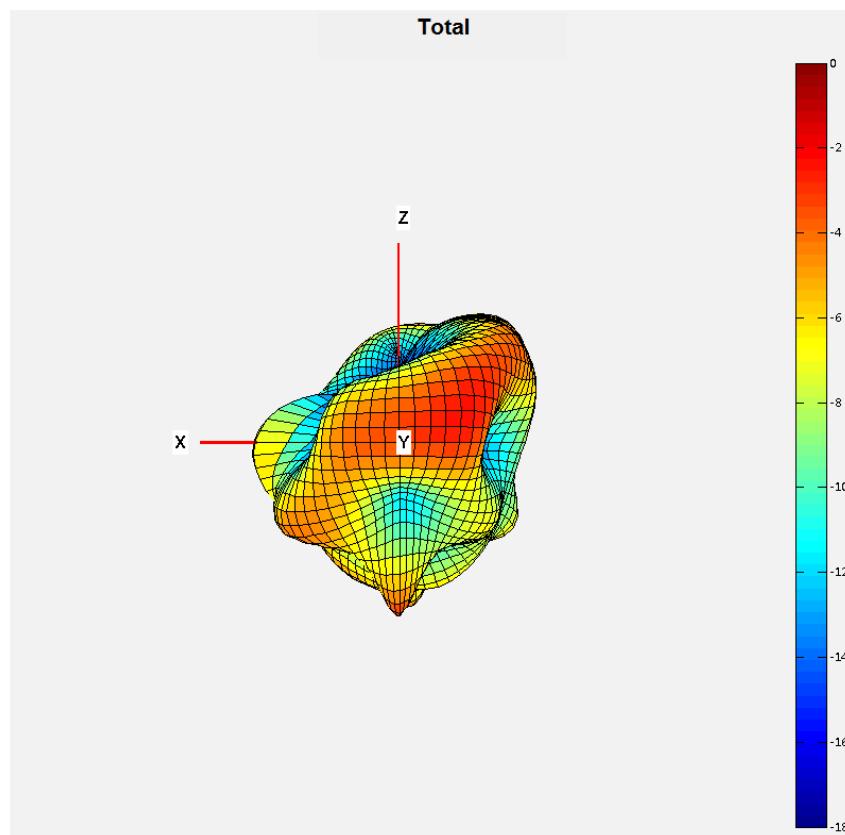


Antenna mounted on chamber coordinate

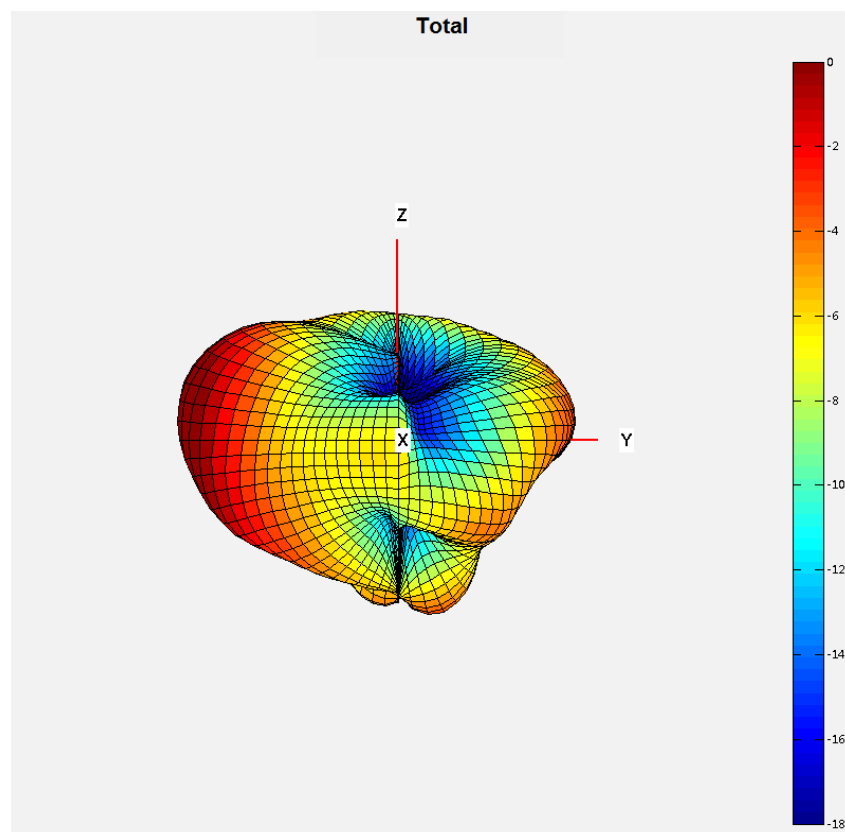
Radiation Pattern X-Y plane



X-Z plane



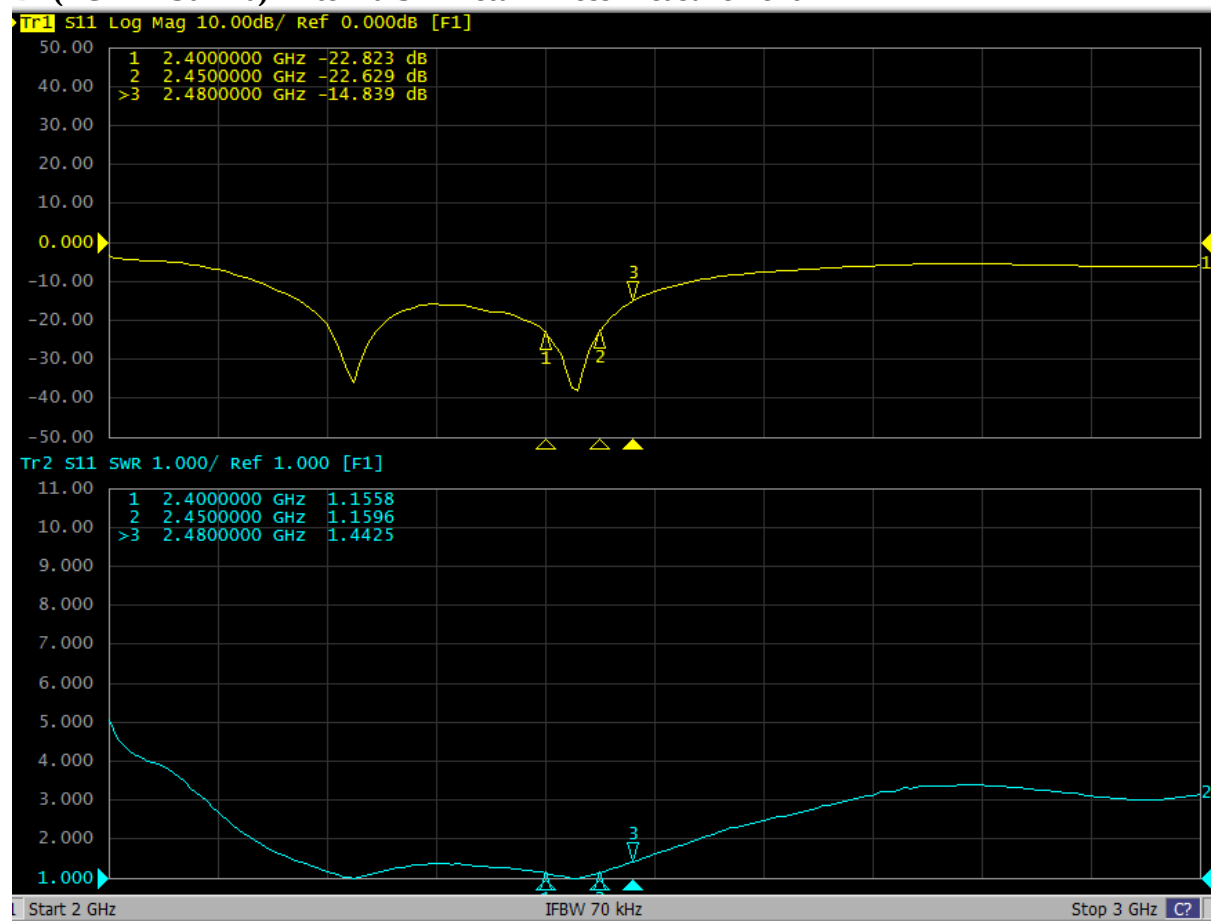
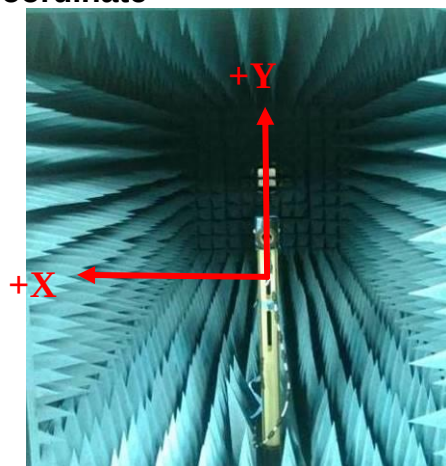
Y-Z plane



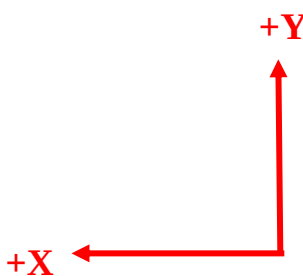
Passive Performance :

Frequency	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2.4GHz	-4.81	33.04	0.39
2.41GHz	-4.82	32.96	0.26
2.42GHz	-4.91	32.28	0.26
2.43GHz	-4.98	31.77	0.22
2.44GHz	-5	31.62	0.17
2.45GHz	-4.97	31.84	-0.03
2.46GHz	-5.02	31.48	-0.05
2.47GHz	-5.36	29.11	-0.17
2.48GHz	-5.63	27.35	-0.28

Environment (咪杆打开)

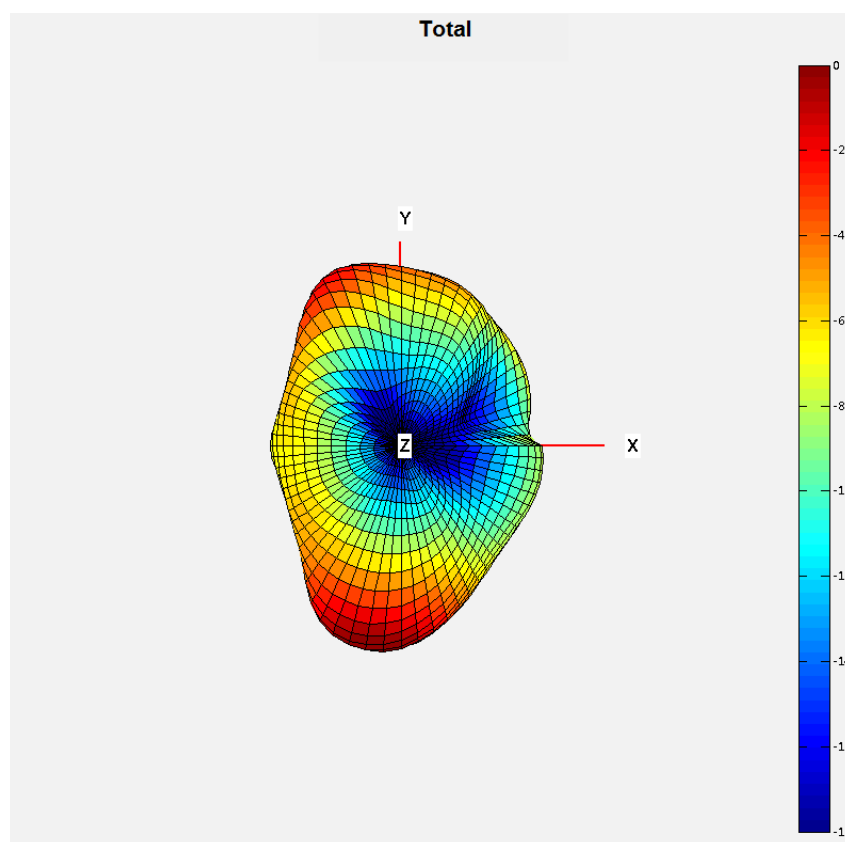
BT(PCAKFS02-10) Antenna S11 Return Loss Measurement**Coordinate**

Chamber coordinate

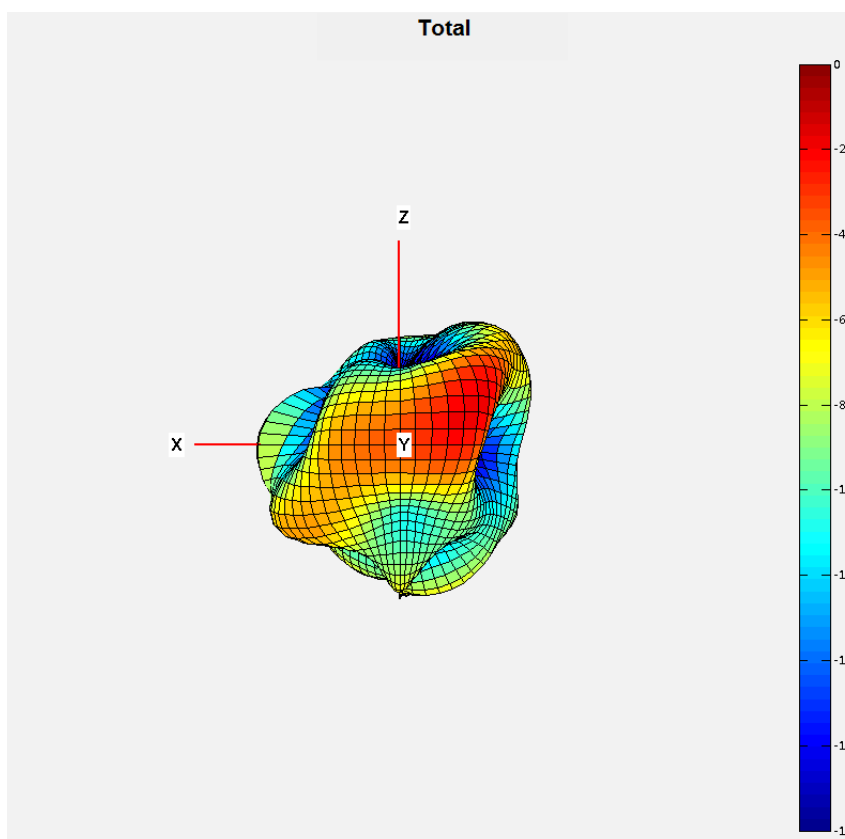


Antenna mounted on chamber coordinate

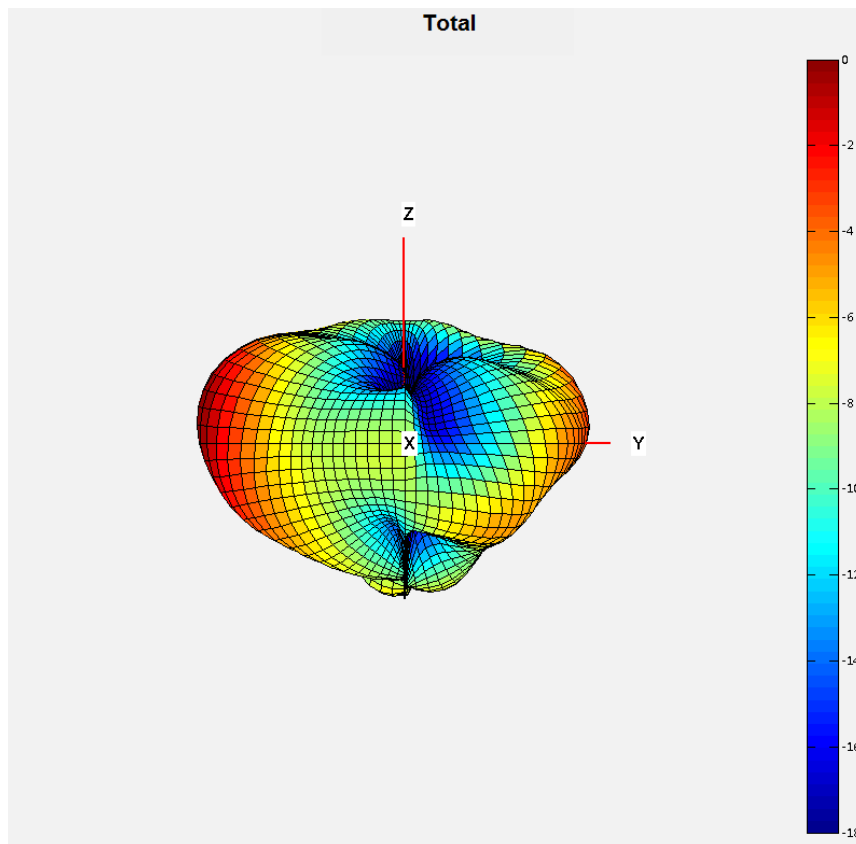
Radiation Pattern X-Y plane



X-Z plane



Y-Z plane



Passive Performance :

Frequency	Efficiency (dB)	Efficiency (%)	Gain (dBi)
2.4GHz	-5.07	31.14	0.23
2.41GHz	-5.15	30.55	-0.01
2.42GHz	-5.29	29.55	-0.08
2.43GHz	-5.48	28.31	0.12
2.44GHz	-5.54	27.91	-0.2
2.45GHz	-5.55	27.84	-0.02
2.46GHz	-5.62	27.44	-0.12
2.47GHz	-5.70	26.93	-0.19
2.48GHz	-5.79	26.35	-0.31

8. Test Result :

依目前客戶樣機測試無源特性，咪杆不打開時天線效率 27-33%之間，咪杆打開時天線效率 26-31%之間，附上調試 S11、3D radiation pattern，供客戶參考評估。