Antenna Specification for BT

1. Antenna Characteristic Specification

This specification describes the physical characteristics and electrical performance of the following 2.4 GHz Bluetooth antenna.

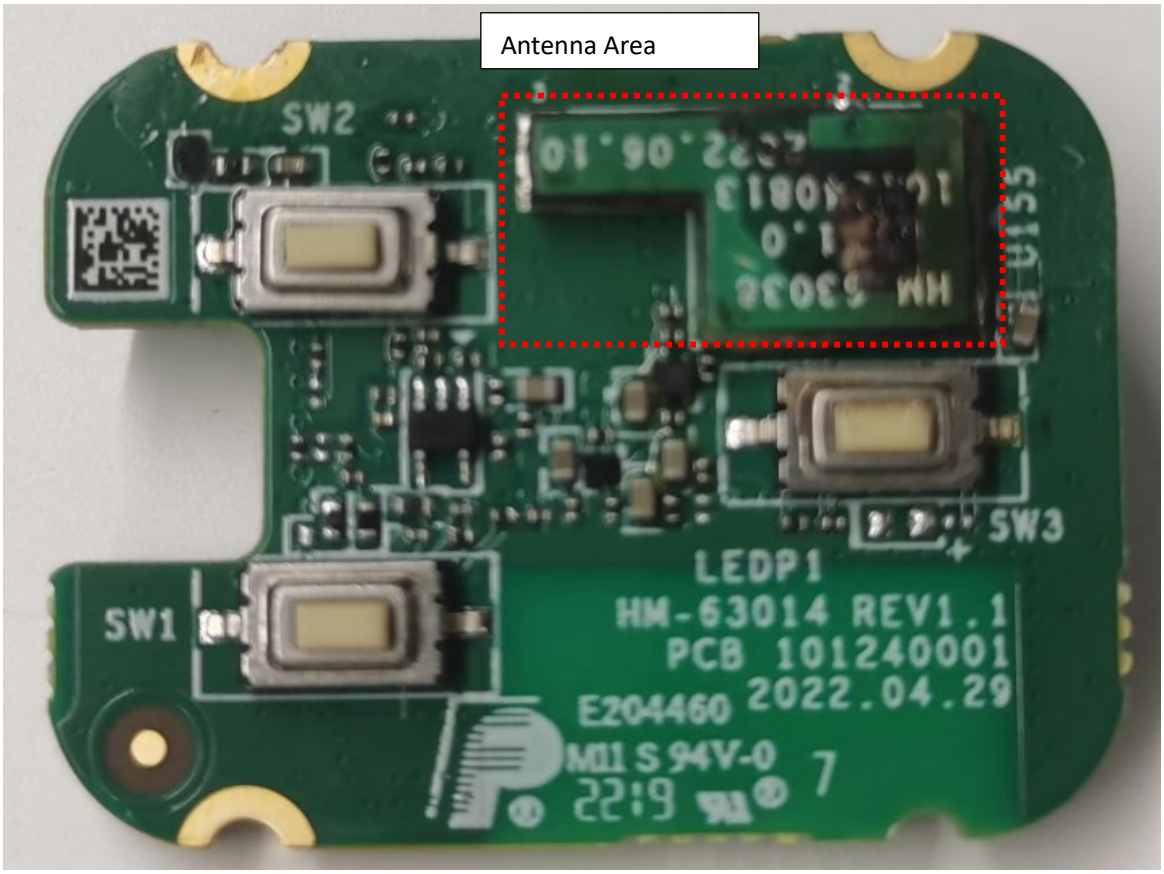


Figure 1. Antenna Actual Effect Picture

1.1 Antenna Structure

The antenna is mainly composed of on-board wiring on the PCB.

1.2 Antenna Technical Parameters and Interface

Design Specifications	Typical	Units
Antenna Type	PCB	\
Frequency	2400-2500	MHz
Gain	High channel：-19.38	dBi
	Medium channel：-17.65	dBi
	Low channel：-17.47	dBi
Antenna Efficiency	*37*	%
VSWR	< 10	\
Polarization	Linear Polarization	\

Axial Ratio	\	\
Radiation pattern	Omnibearing	\
impedance	50	ohm
Power handling	33	dBm
Interface	\	\
Overall dimensions	5mm*2mm	\
Weight	\	\
Operation Temp.	-30-70	℃
Storing Temp.	-30-70	℃

2. Antenna Test Conditions

2.1 Test Equipment

Antenna Vector Network Analyzer ROHDE&SCHWARZ ZNB 20

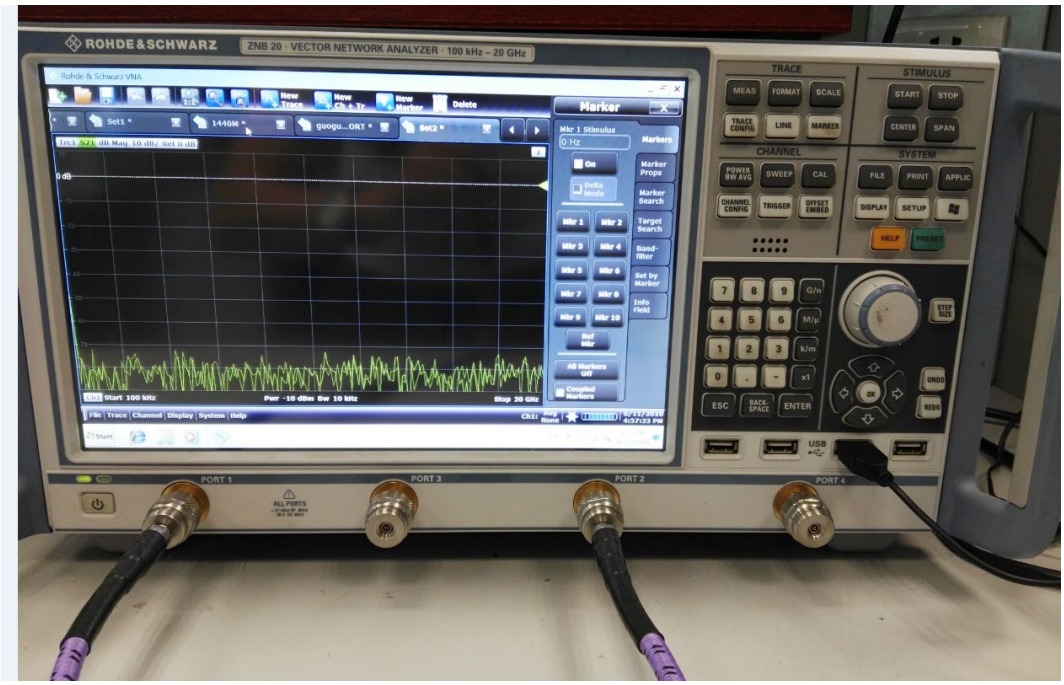


Figure 2.Vector Network Analyzer

2.2 Test Result

Return Loss (S11)

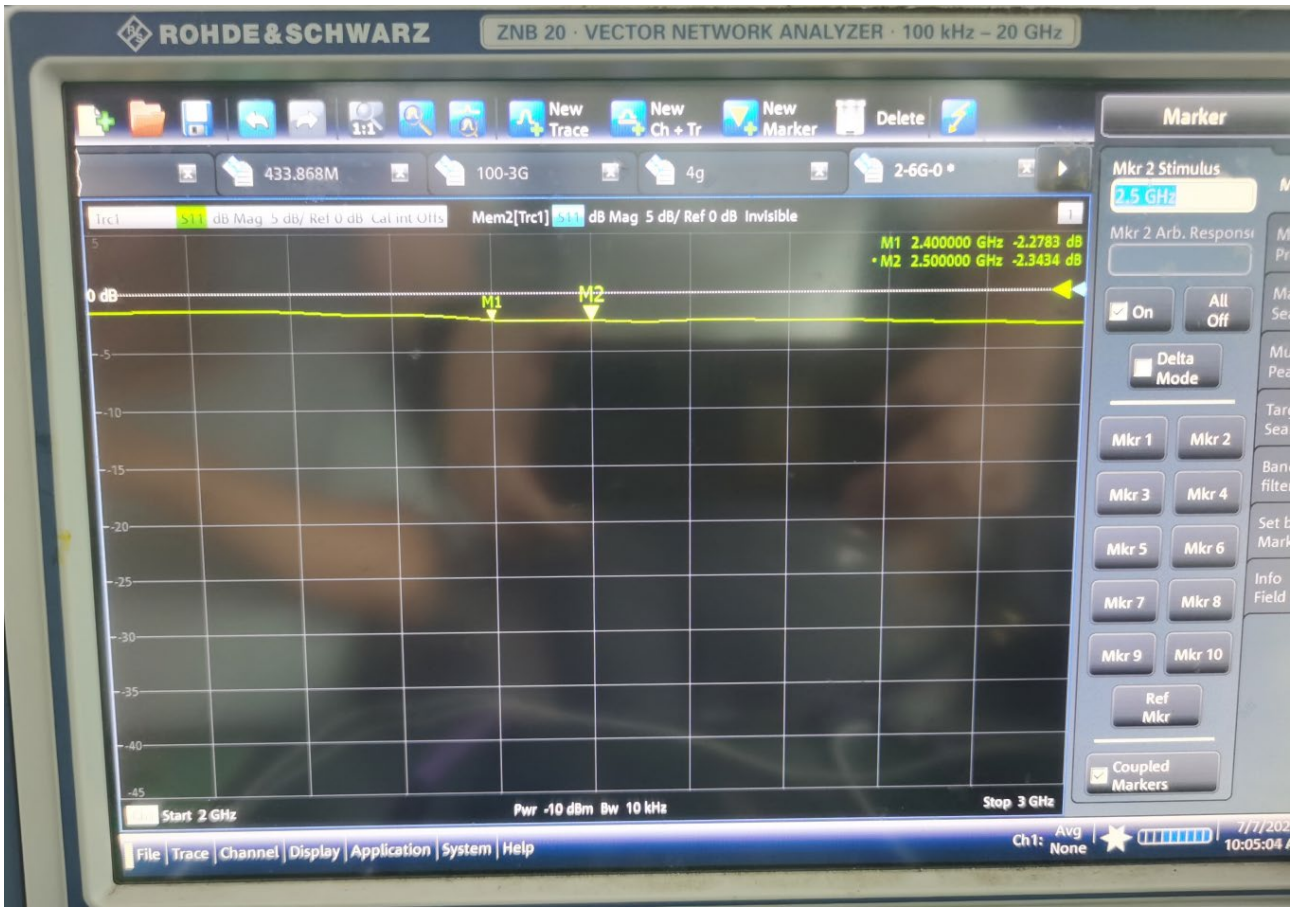


Figure 4.Return Loss

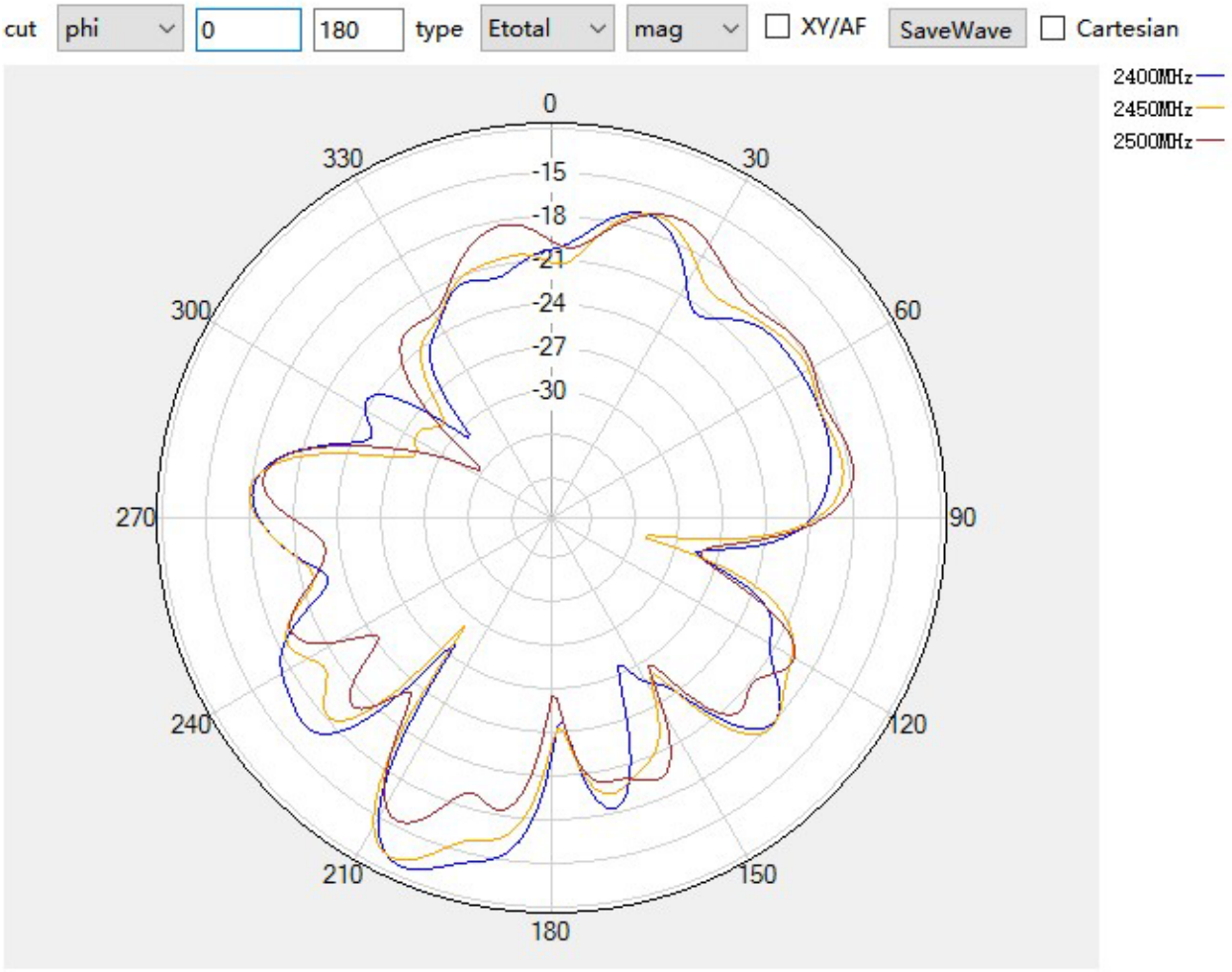
The yellow curve in the figure above shows that the antenna syntony is realized well, and the resistance condition matches well.

Antenna Efficiency

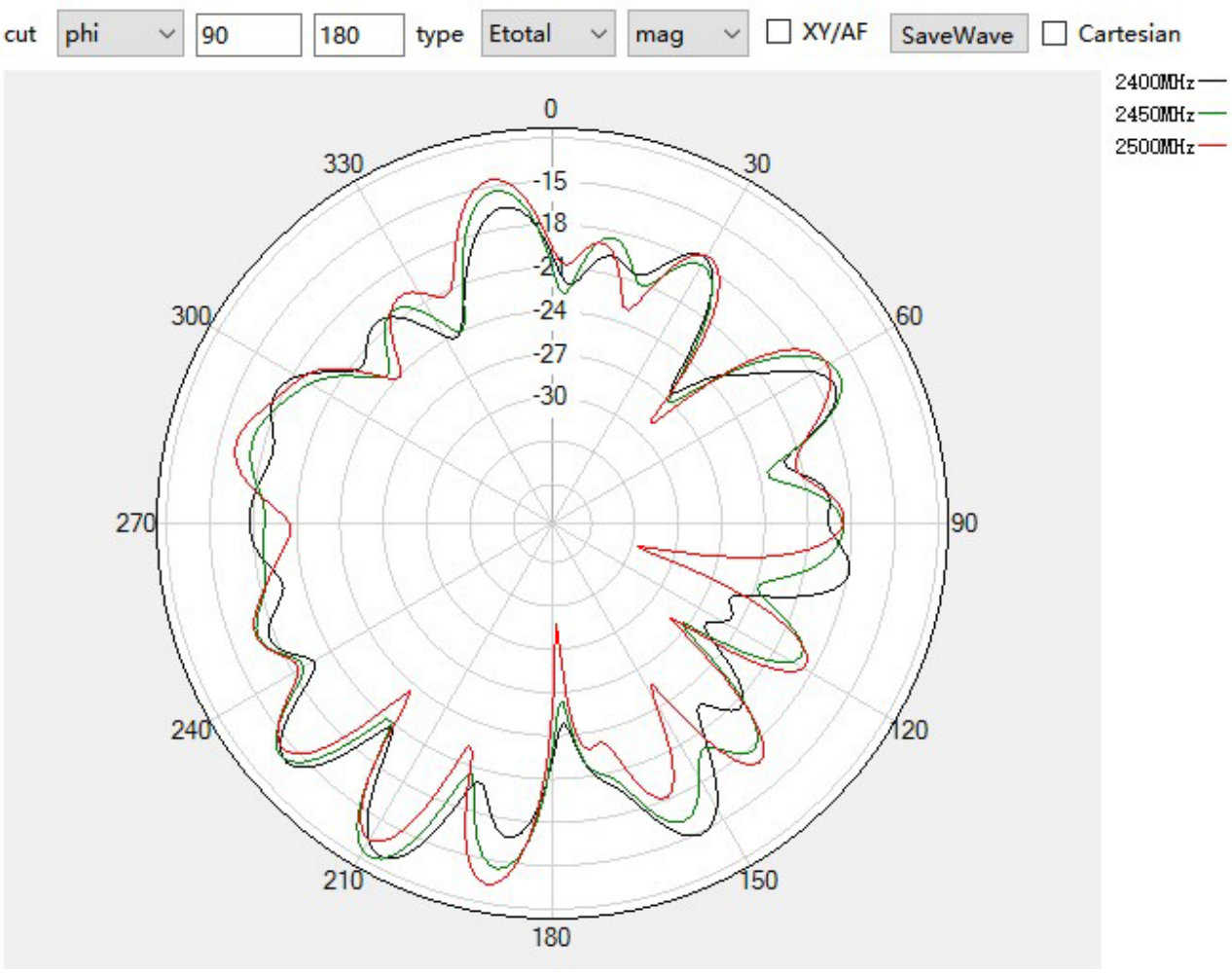
Frequency /MHz	Efficiency /%
2400	1.15
2410	1.18
2420	1.17
2430	1.16
2440	1.21
2450	1.16
2460	1.15
2470	1.13
2480	1.11
2490	1.06
2500	1.09

Antenna 2D Radiation Pattern

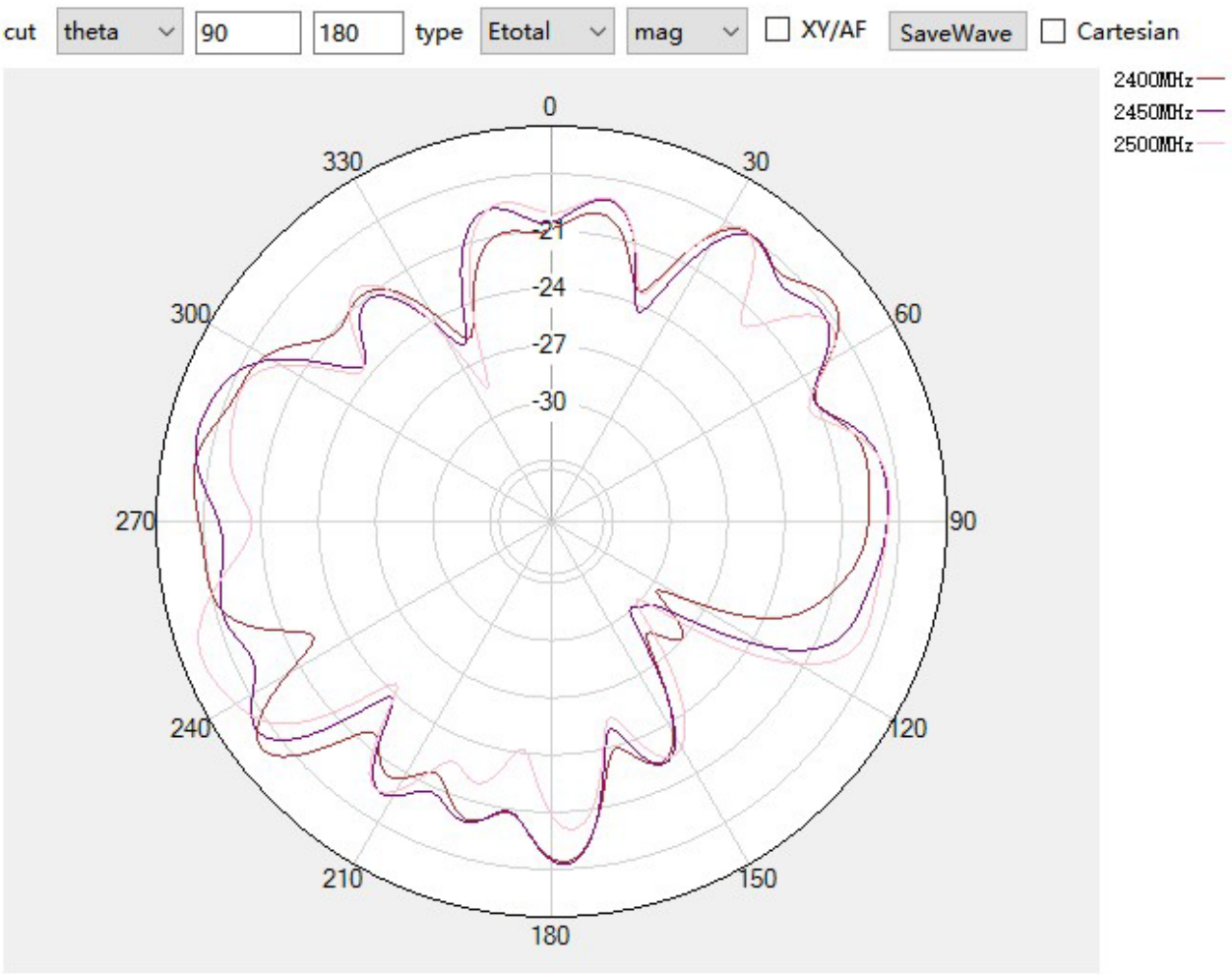
2400MHz:



Phi=0 deg


cut
phi
90
180
type
Etotal
mag
XY/AF
SaveWave
Cartesian
2400MHz
2450MHz
2500MHz
0
30
60
90
120
150
180
210
240
270
300
330
-15
-18
-21
-24
-27
-30

Phi=90 deg


cut
theta
90
180
type
Etotal
mag
XY/AF
SaveWave
Cartesian
2400MHz
2450MHz
2500MHz
0
30
60
90
120
150
180
210
240
270
300
330
-21
-24
-27
-30

Theta=90 deg