SPECIFICATION

ShenZhen TianDa Communication CO., LTD

The TC1600-11J antenna
Product specification

client	Second pass radio	Frequency segment	2400-2500MHz
Antenna name/Model	TC1600-11J	edition	A
Item part number	MC-FT-11-BT-A	complexion	black
RF design	Wang Xinchuang	Structural design	Zhou Luhong
Maximum antenna gain	10dBm	date	2023.06.17

Customer confirmation：

Whether the assembly meets your company's requirements：□OK □NG

ShenZhen TianDa Communication CO., LTD.

302 Building A, J inGang science and Technology Park Qiaotou community, Fuhai Street, Bao'an District Shenzhen

catalogue

一、First, BT antenna

1. Specifications

The admission document mainly provides the test status of BT antenna electrical and structural performance parameters of FT11 project. The picture below

It's a picture of the BT antenna designed by Investec.

1.1 、 electrical specifications

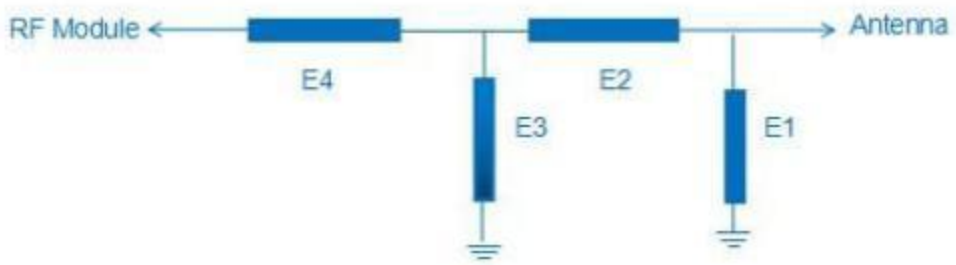
1.1.1. Electrical performance index

The antenna of this project works in the 2400-2500mhz frequency band. The following is the electrical performance of the antenna designed and produced by Investec

Indicators.

WIFI		
Frequency band	frequency（MHz）	VSWR
WIFI	2400~2500	≤2.0

1.1.2 、Match the circuit diagram



The matching circuit of the WIFI antenna is seen as a parallel electrostatic tube from the antenna end, with 2.2nH inductors in series and 2.2pF capacitors in parallel.

1.2. Test

1.2.1 Passive test

1.2.1.1Antenna Standing Wave Test (VSWR)

1.2.2 、Actual effect of earphone

BT test			
Antenna material：FPC	Test type: Music playback	Model: TC1600-11J	
Mobile phone model	content	distance	remark
Huawei nova6se	Headphones omnidirectional no interruption maximum distance	≤20m	
	Mobile phone close-up test without interruption		
Apple 12	Headphones omnidirectional no interruption maximum distance	≤20m	

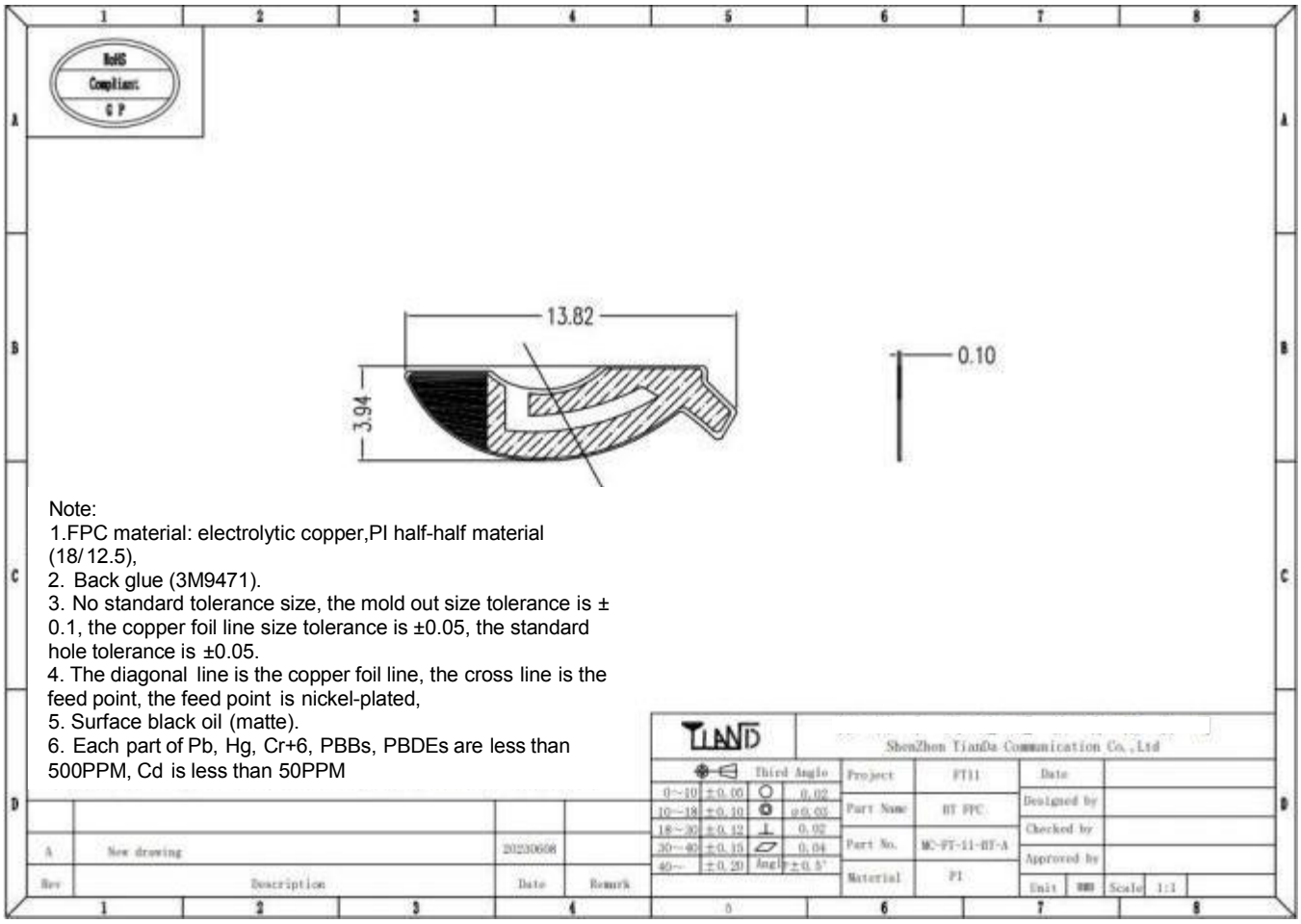
Test site: the roof of our company

二、Structural specification

2.1 Antenna composition

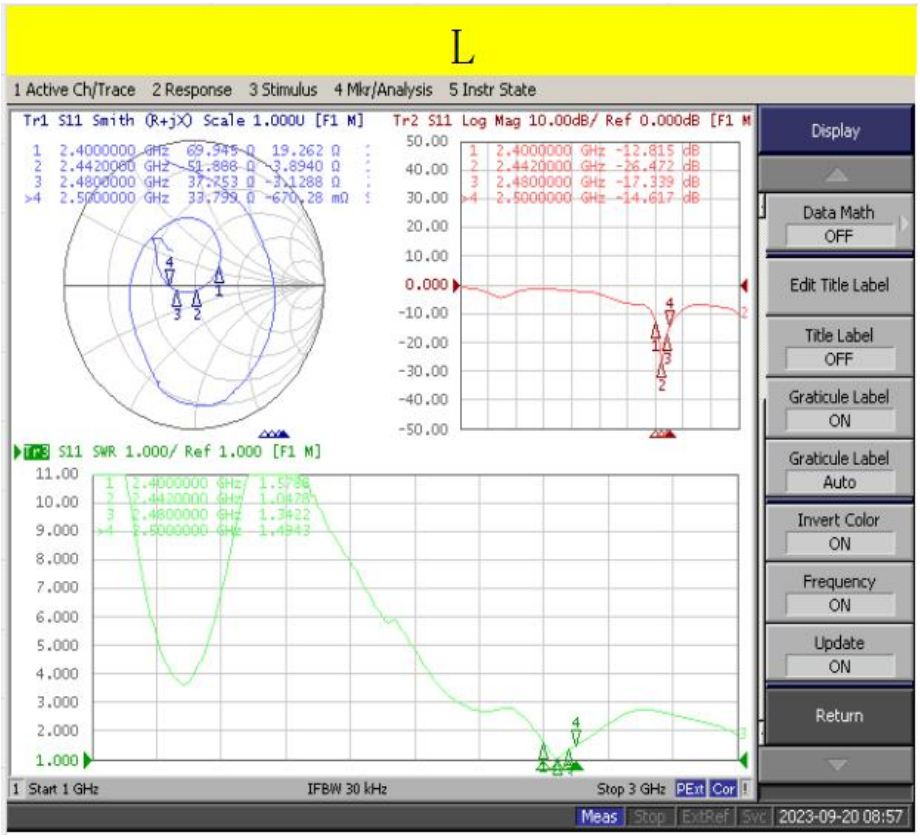
The BT antenna is mainly composed ofFPC.

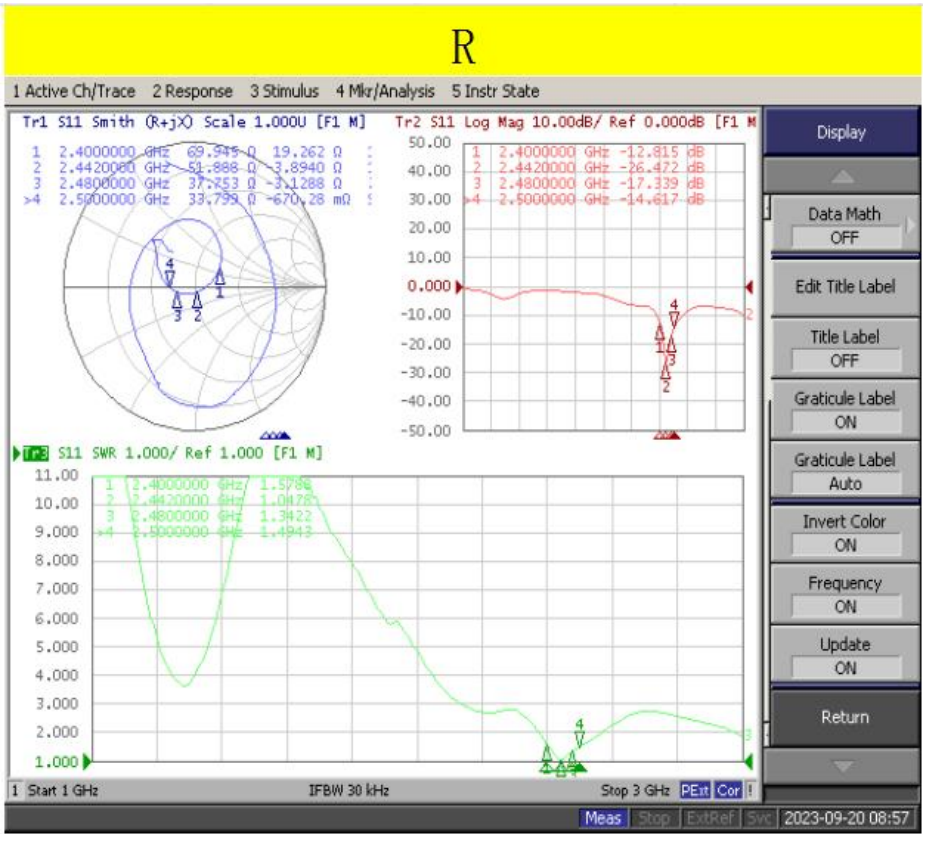
2.2. Engineering drawings



2.2. Antenna radiation pattern

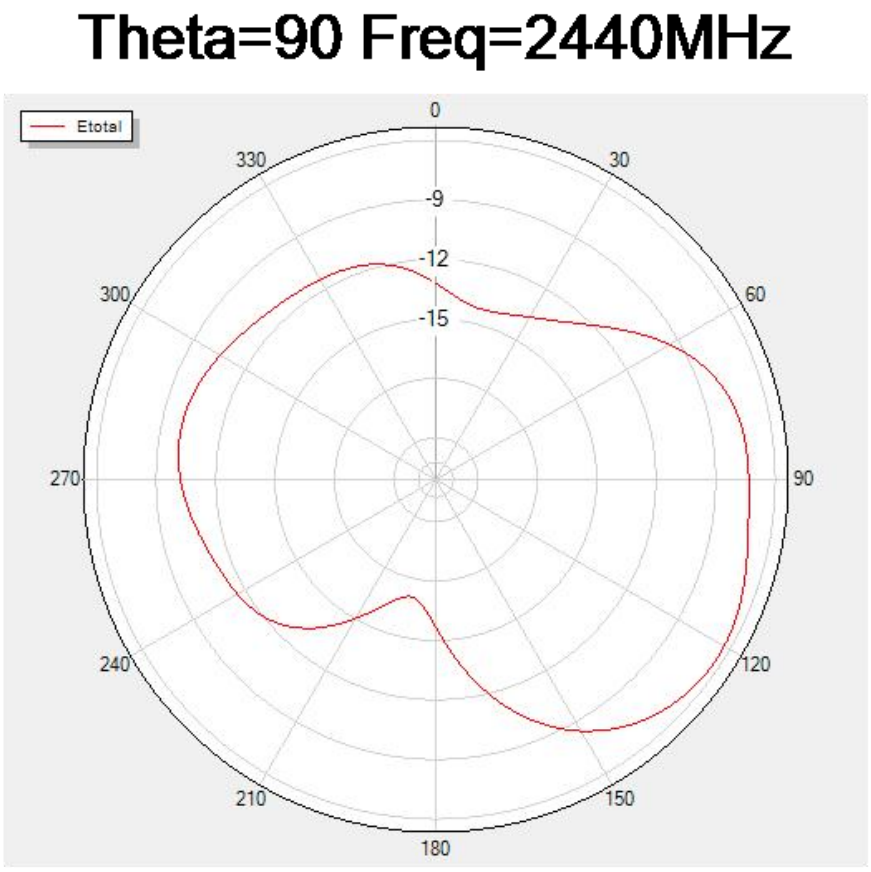
2.2.1Antenna impedance parameter test



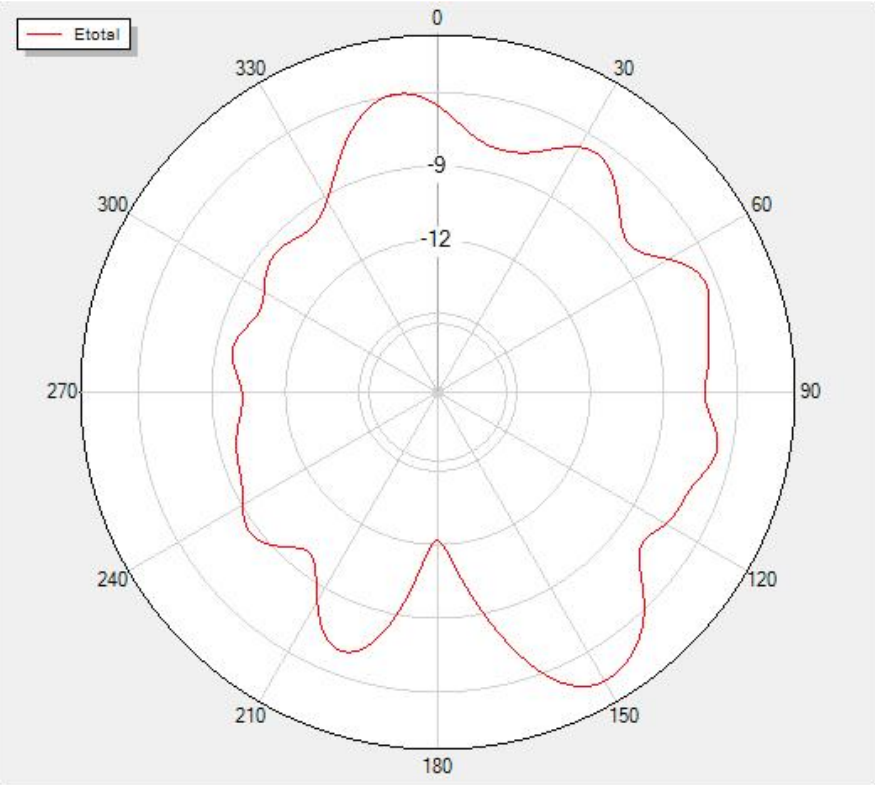


2.2.2Test of antenna passive efficiency

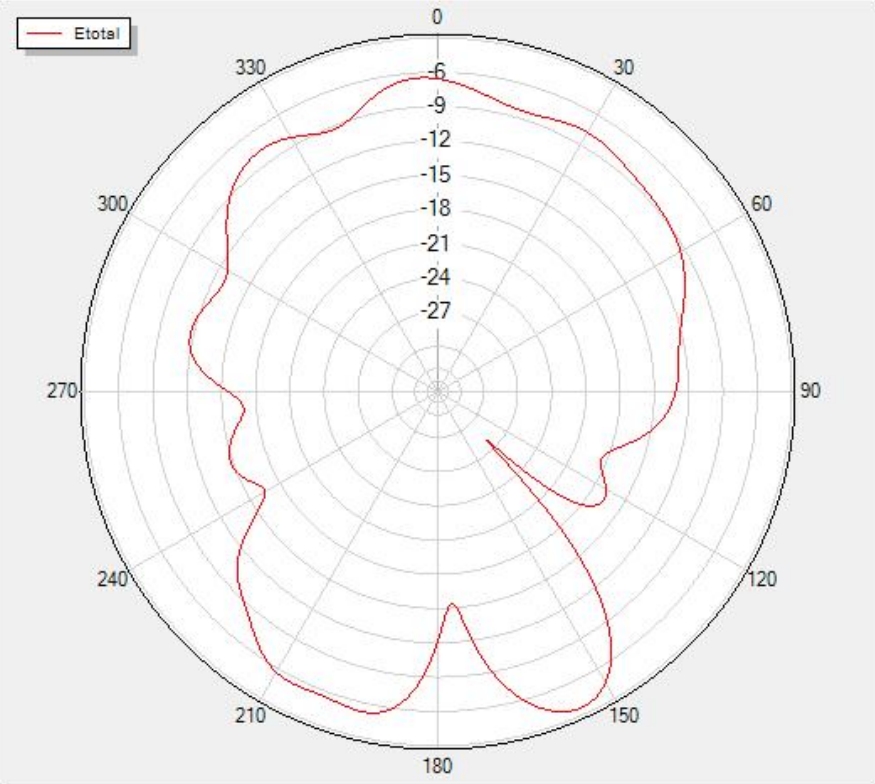
L			
Frequency point(MHz)	gain (dBi)	Efficiency（dB）	Efficiency（%）
2400	-2.45	-8.53	14.03
2410	-2.37	-8.29	14.82
2420	-2.34	-8.14	15.33
2430	-2.34	-8.08	15.57
2440	-2.42	-8.08	15.56
2450	-2.41	-8.05	15.68
2460	-2.42	-7.99	15.88
2470	-2.46	-7.97	15.97
2480	-2.6	-7.95	16.05
Mean value	-2.42	-8.12	15.43

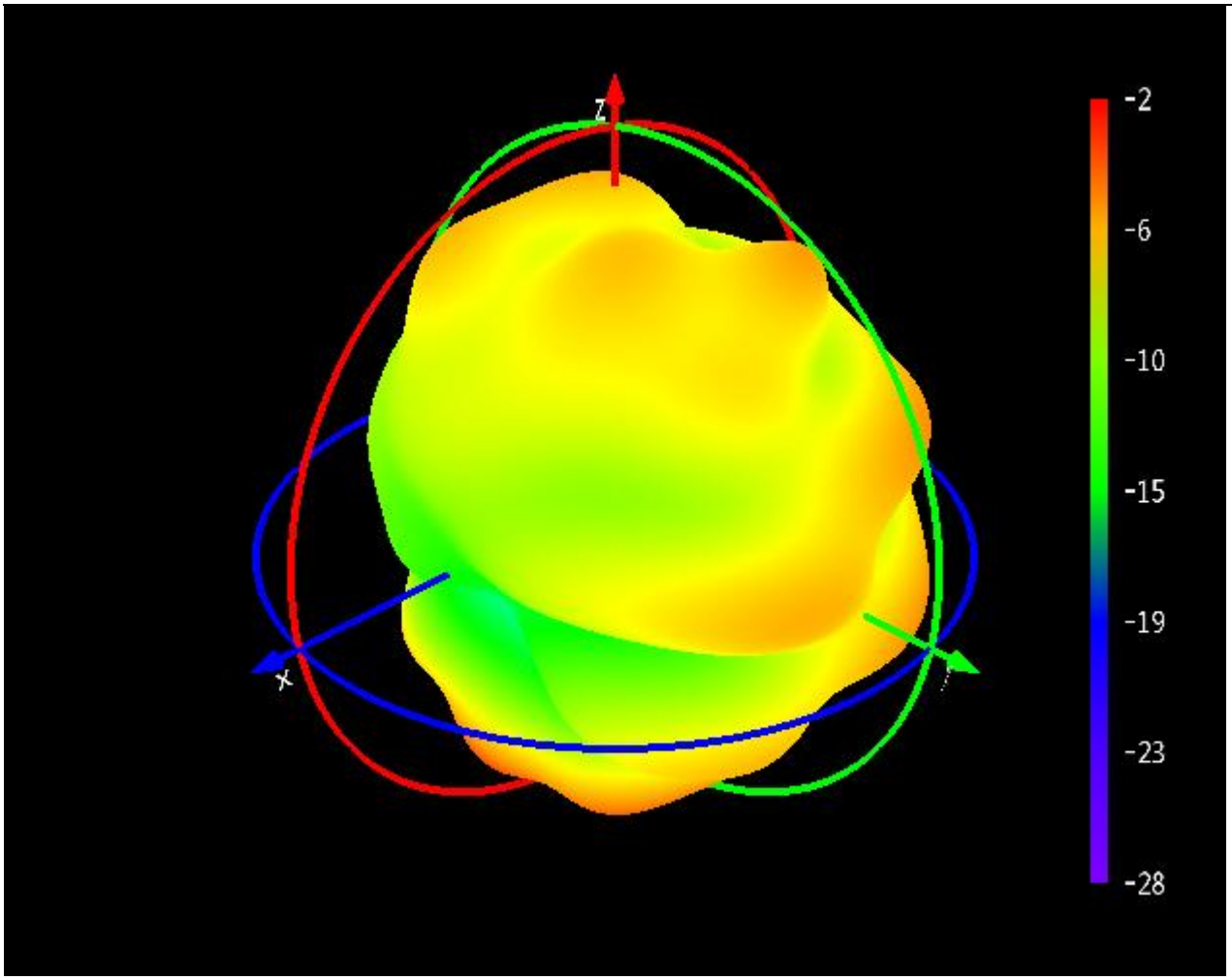


Phi=90 Freq=2440MHz



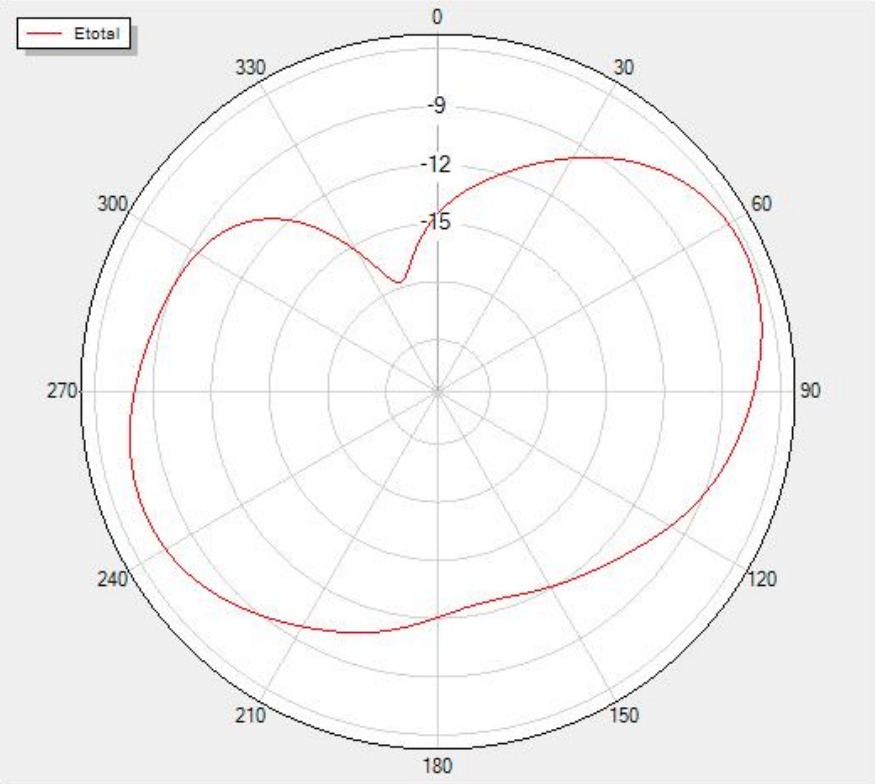
Phi=0 Freq=2440MHz



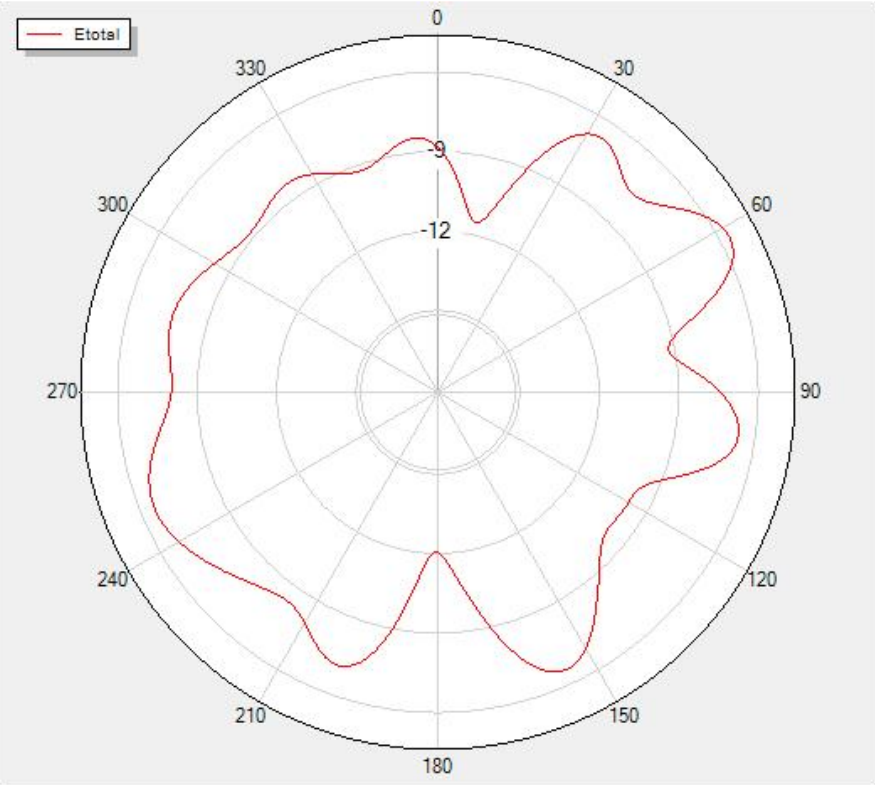

Z
X
-2
-6
-10
-15
-19
-23
-28

R			
Frequency point(MHz)	gain (dBi)	Efficiency（dB）	Efficiency（%）
2400	-3.47	-8.29	14.82
2410	-3.48	-8.09	15.51
2420	-3.48	-8.06	15.62
2430	-3.45	-8.06	15.62
2440	-3.37	-8.09	15.53
2450	-3.19	-8.07	15.59
2460	-3.05	-8.05	15.68
2470	-2.95	-8.03	15.75
2480	-2.9	-8.03	15.74
Mean value	-3.26	-8.09	15.54

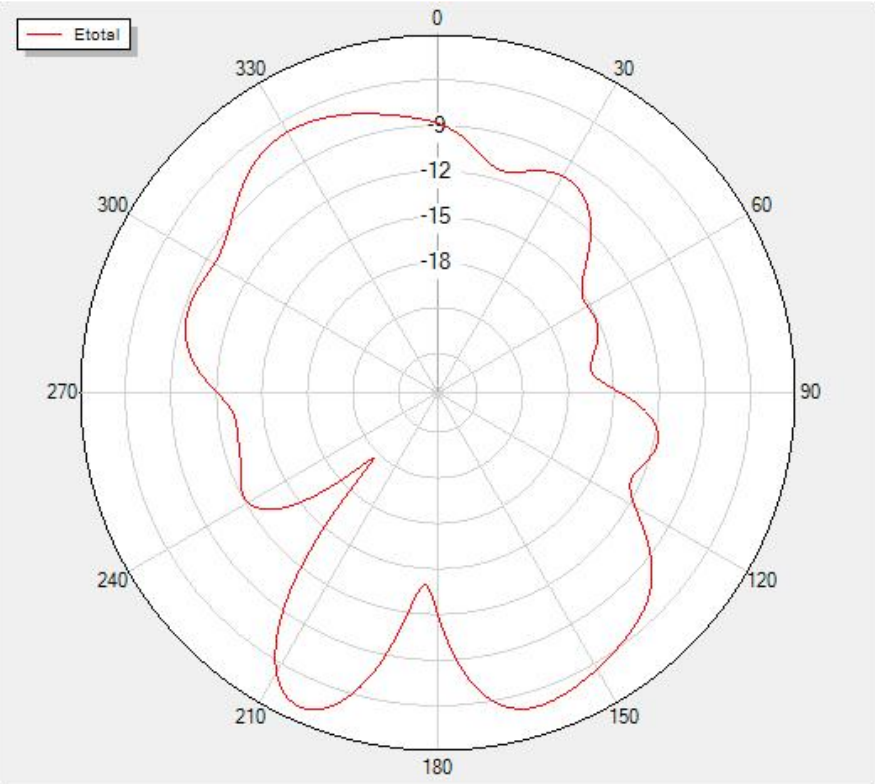
Theta=90 Freq=2440MHz

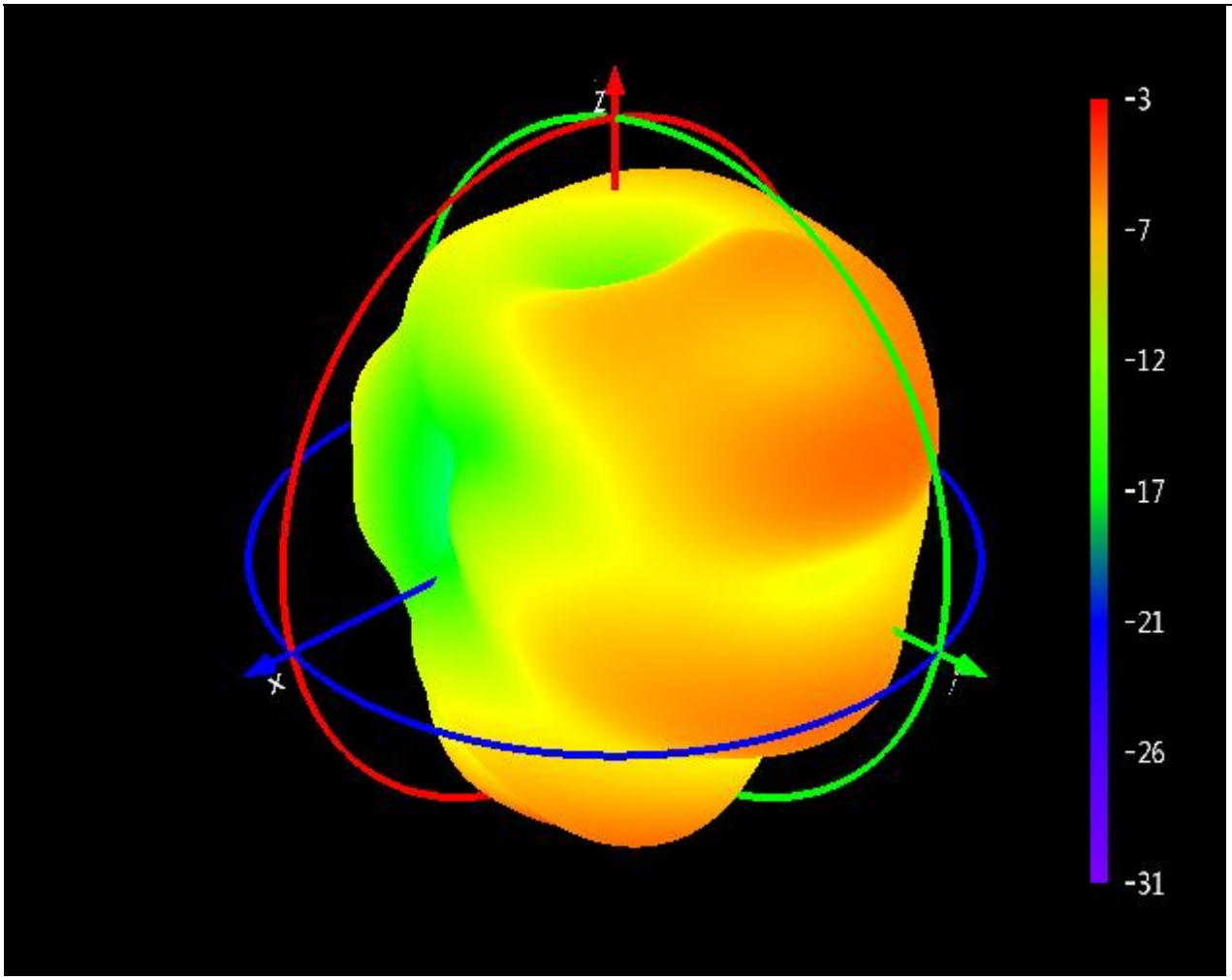


Phi=90 Freq=2440MHz



Phi=0 Freq=2440MHz



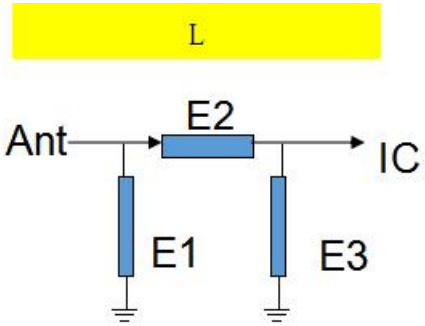

Z
X
Y
-3
-7
-12
-17
-21
-26
-31

2.2.3Active test data of the whole machine

liberty	Channel	TRP (dBm)	TRP (dBm)
L	CH 0	-2.36	-83.21
	CH 39	-1.51	-84.99
	CH 78	-2.63	-83.31
Head mold	Channel	TRP (dBm)	TIS (dBm)
L	CH 0	-6.39	-78.23
	CH 39	-5.03	-79.47
	CH 78	-6.82	-79.22
liberty	Channel	TRP (dBm)	TRP (dBm)
R	CH 0	-2.43	-83.21
	CH 39	-1.54	-84.46
	CH 78	-2.23	-83.32
Head mold	Channel	TRP (dBm)	TIS (dBm)
R	CH 0	-6.32	-79.45
	CH 39	-5.45	-79.9
	CH 78	-6.45	-79.21

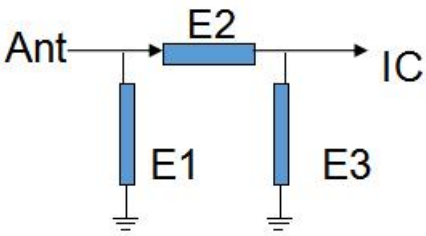
2.2.4Antenna matching circuit

L



Element	Value
E1	3NH
E2	3NH
E3	2.4PF

R



Element	Value
E1	3NH
E2	3NH
E3	2.4PF