PCB 板载蓝牙天线测试报告
PCB BT Antenna Test Report

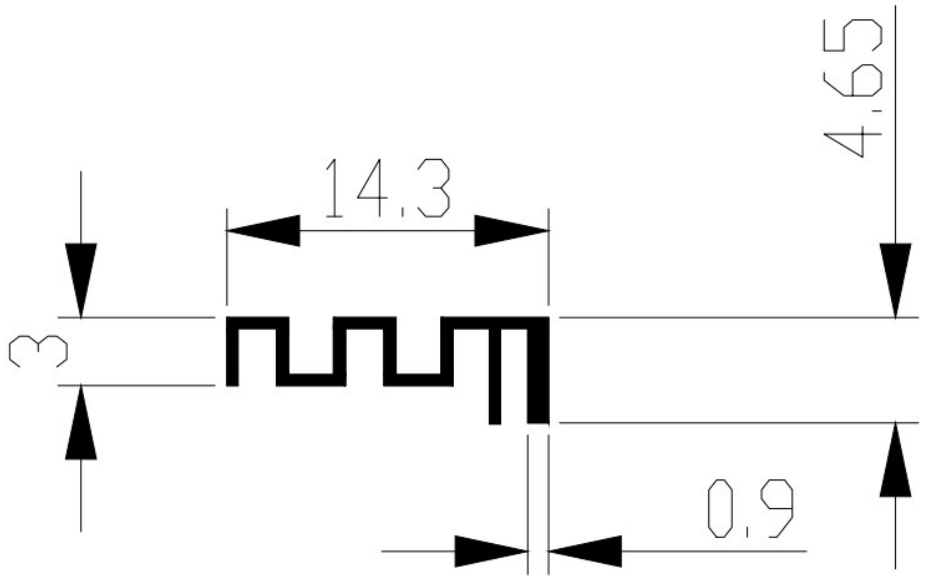
一、天线简介/ Introduction of antenna

我司使用的蓝牙模块的蓝牙天线直接采用做在主板 PCB 板上的方式，天线为铜泊加喷锡工艺，铜箔厚度：1OZ，板材为 FR－4 厚度 1.6mm 材料。

Our Bluetooth speaker's antenna is directly made on the Main PCB board. The antenna is copper potable tin injection process, copper foil thickness: 1OZ, sheet material is FR - 4 thickness 1.6mm material.

二、天线外形/ Antenna shape

1.尺寸图/ Size（mm）：



三、天线参数/ Antenna parameters

蓝牙天线工作频率在 2402-2480MHz，在此频段产生谐振。下表为天线的主要参数。

The Bluetooth antenna operates at 2402-2480MHz and generates resonance in this frequency band. The next table is the main parameter of the antenna.

蓝牙内置天线/Bluetooth built-in antenna	
Frequency(MHz)	2402 ~ 2480 MHz
VSWR	≤ 1.92
Impedance	50 Ohm Nominal
Return Loss	-8.5 dB Max
Radiation	Omni-directional
Gain (Peak)	0 dB
Polarization	Linear, Vertical
Admitted Power	2W
Connector	Tin

四、天线增益检测报告/ Antenna gain detection report

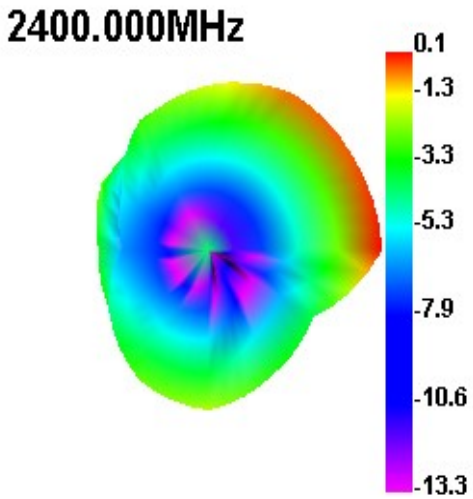
Spectrum Detector:	Agilent E5071B	Test Date :	Mar 15, 2019
Test By:	Tang	Temperature :	21℃
Test Result:	PASS	Humidity :	65 %
Modulation:	GFSK		

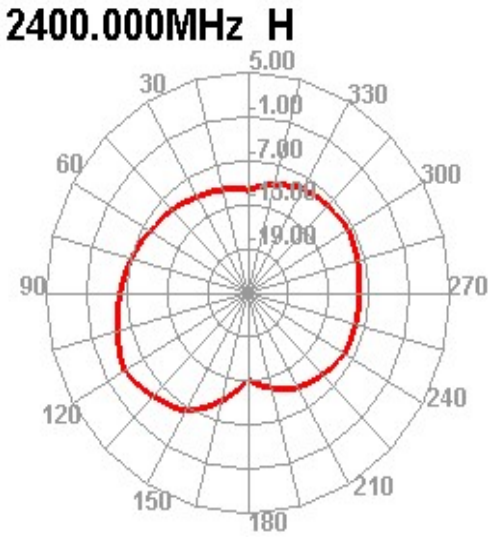
最大增益值/ Maximum gain value

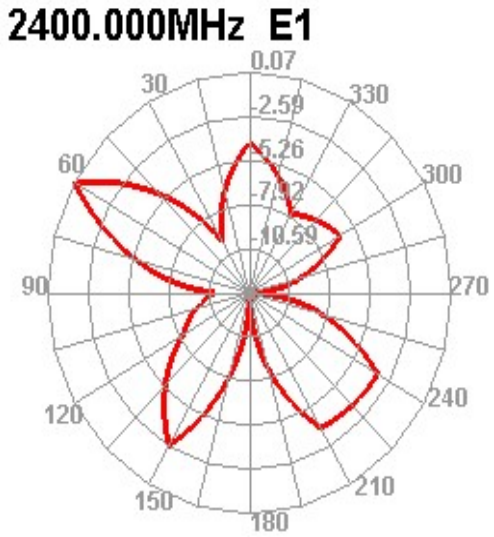
Frequency VNA (MHz)	Max Gain(dB)
2400	-0.45
2410	-0.35

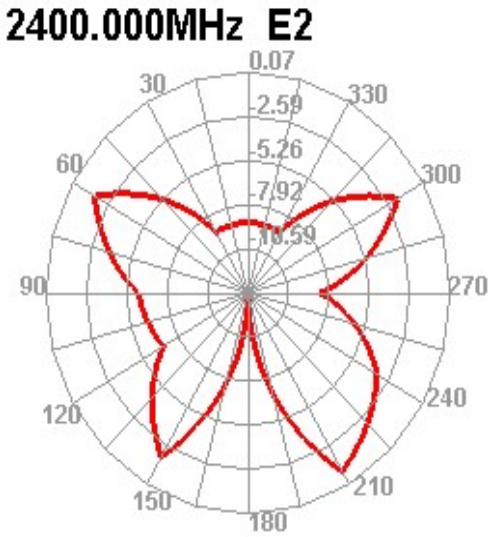
2420	-0.1
2430	-1.19
2440	-1.64
2450	-0.39
2460	-1.12
2470	-1.18
2480	0.00
2490	-1.28
2500	-1.32

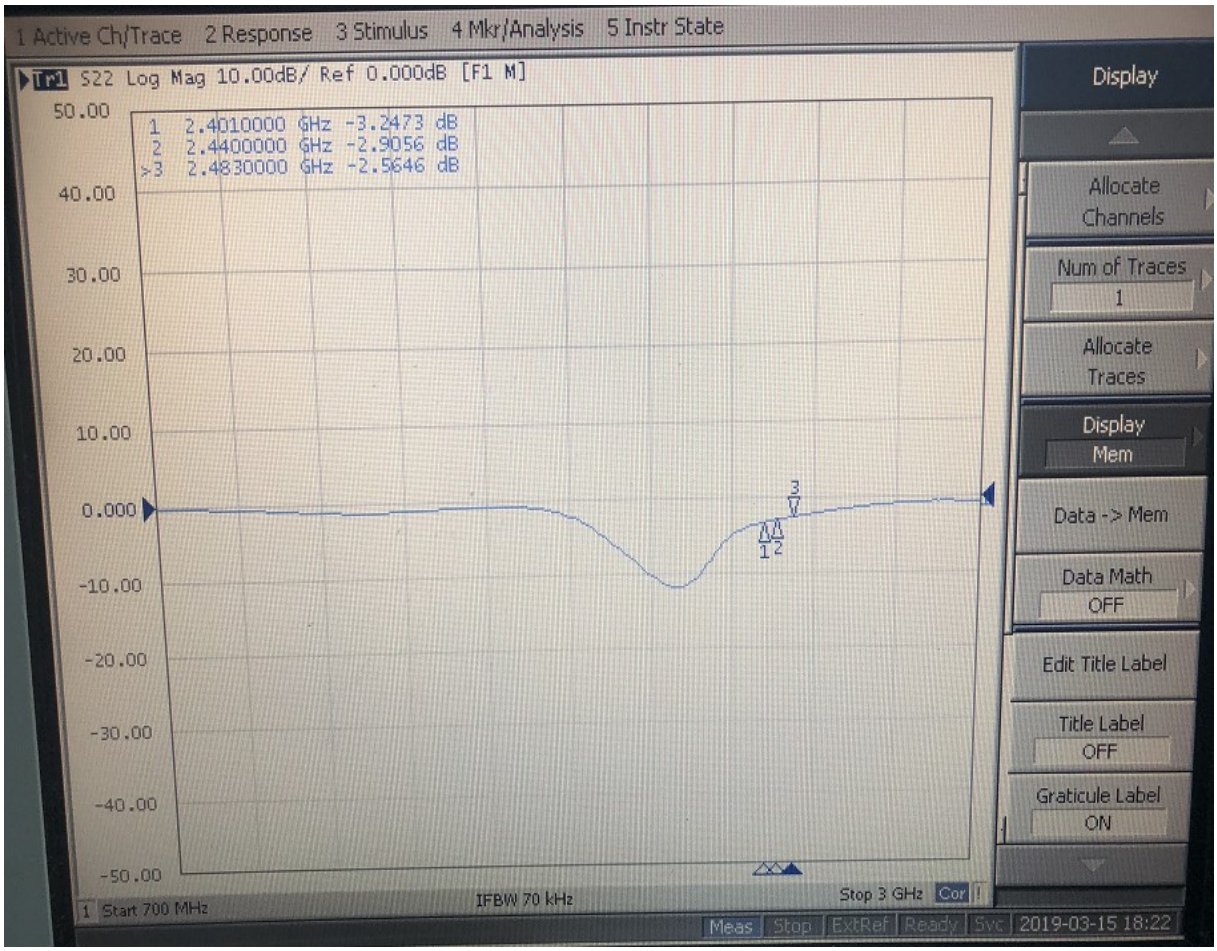
方向图/ Directional map：










1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1 M]
1 2.4010000 GHz -3.2473 dB
2 2.4400000 GHz -2.9056 dB
>3 2.4830000 GHz -2.5646 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 700 MHz
IFBW 70 kHz
Stop 3 GHz
Cor
Meas
Stop
ExtRef
Ready
Svc
2019-03-15 18:22
Display
Allocate Channels
Num of Traces
1
Allocate Traces
Display
Mem
Data -> Mem
Data Math
OFF
Edit Title Label
Title Label
OFF
Graticule Label
ON