

# PCB 板载蓝牙天线测试报告

## PCB BT Antenna Test Report

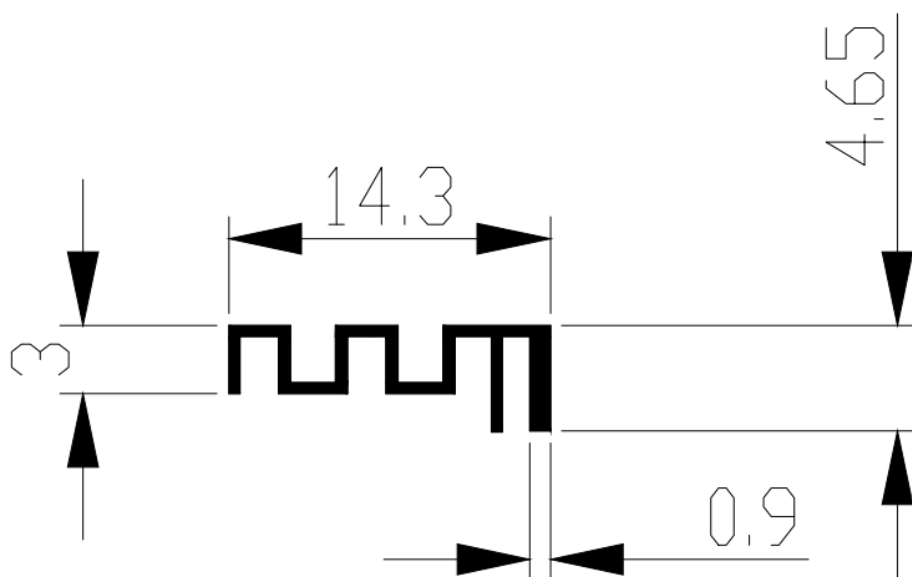
### 一、天线简介/ Introduction of antenna

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，天线为铜箔加喷锡工艺，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 :



### 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	$\leq 1.92$
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°C
Test Result:	PASS	Humidity :	65 %
Modulation:	GFSK		

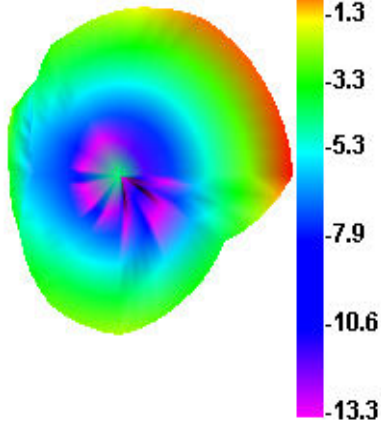
#### 最大增益值/ Maximum gain value

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

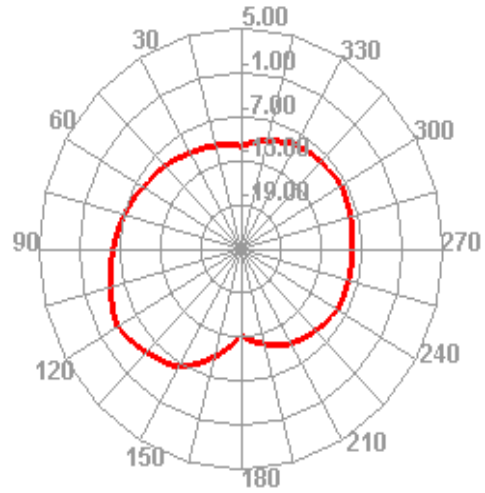
2420	-0.1
2430	-1.19
2440	-1.64
2450	-0.39
2460	-1.12
2470	-1.18
2480	0.00
2490	-1.28
2500	-1.32

方向图/ Directional map:

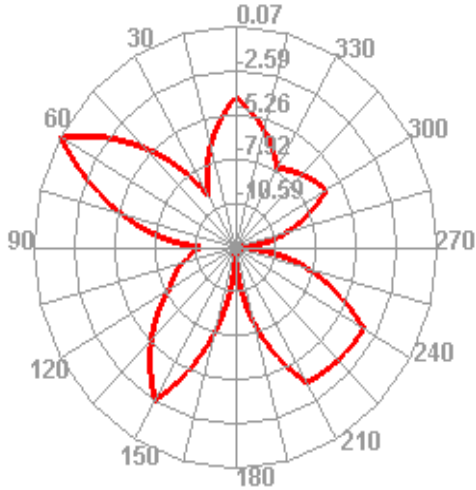
2400.000MHz



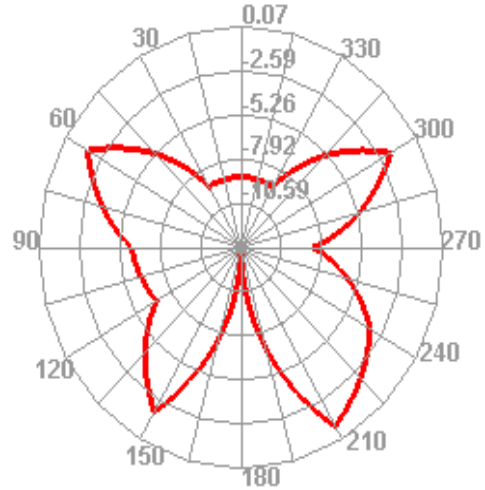
2400.000MHz H



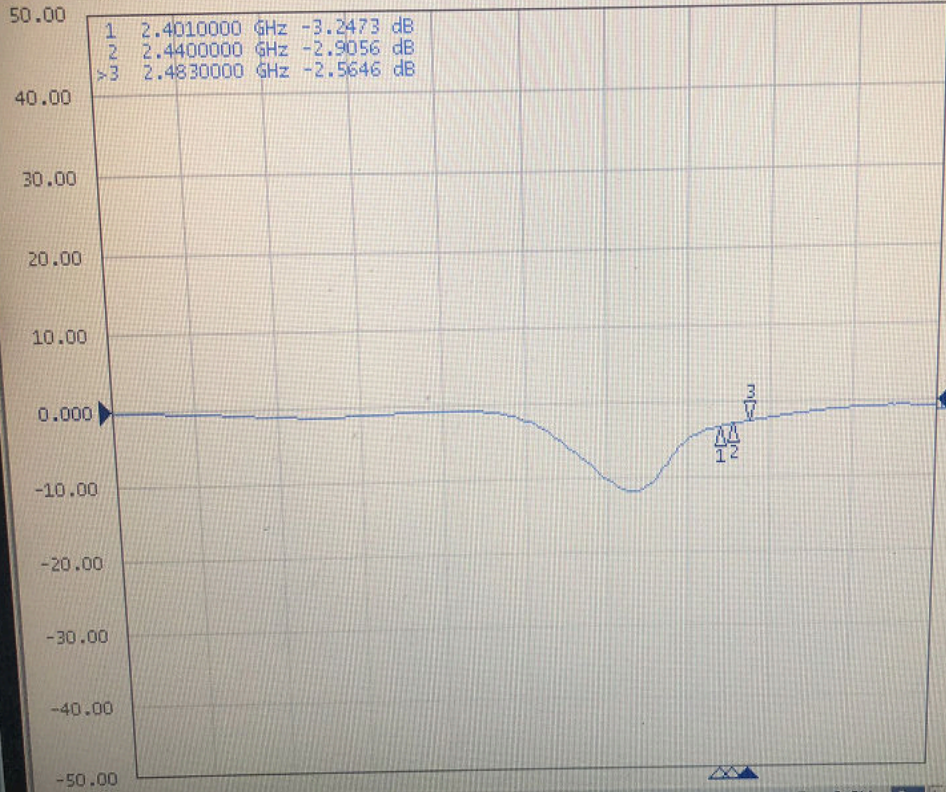
2400.000MHz E1



2400.000MHz E2



S22 Log Mag 10.00dB/ Ref 0.000dB [F1 M]



Start 700 MHz

IFBW 70 kHz

Stop 3 GHz

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