



**ONE PLUS ONE**  
Wireless Communication

## 深圳市一加一无线通讯技术有限公司

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# 承认书

## APPROVAL SHEET

客户 Customer	爱保护 SHENZHEN SMART CARE TECHNOLOGY LIMITED
项目名 Project	iTOUCH Air4
料号 Part NO.	R0.S0.LYTX.020B
规格 Specification	BLE V5.1 Antennas

Project: Itouch-Air4	Author: Haiou.Zhu	File Name: Itouch-Air4.doc
Date: 2023-2-2		
Revision:	A	
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APPROVAL			
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承认鉴章后请寄回承认书一份

: return to us one copy of “APPROVAL SHEET” with your approved signatures

Date:	Revision:	Updates and changes:	Issued by:
2022.12.21	A	Initial sheet	Haiou.Zhu

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# 1 Antenna description

It summarize **BT 5.1** antennas for project antenna's frequency band is **2400-2500MHz**. **BT 5.1** antenna's type is Bluetooth conductor

## 1.1 Part number

Part number of antenna: **Itouch-Air4**

## 1.2 Antenna pictures

See test report

# 2 Electrical Performance

## 2.1 Specification

BT	
Frequency Range	<b>2400MHz~2500MHz</b> <-5 >30
Return Loss	
Efficiency	

## 2.2 Measurement Set-up

### 2.2.1 VSWR and Return Loss

VSWR measurements ( $S_{11}$ ) were performed using an Agilent ENA series Network Analyzer and the previously described test fixture. Coaxial chokes were used to mitigate surface currents on the outside of the cabling. The testing was performed in free space.

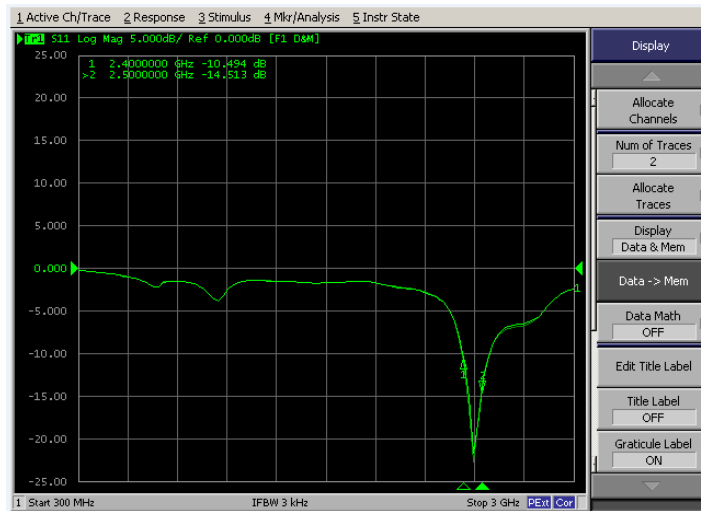
### 2.2.2 Efficiency and Gain

The gain of the antenna was measured in OPO's 3D anechoic chamber in Shenzhen, China. The chamber is a ETS system capable of doing tests from 380MHz to 6GHz. Coaxial chokes on the feed cable were used to mitigate surface currents during passive tests. The measurement results are calibrated using dipole standards. For TRP and TIS the chamber uses a 8960 / MT8820C to establish the connection with the mobile device and read the power.

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## 3 Reference measurement data

### 3.1 Passive

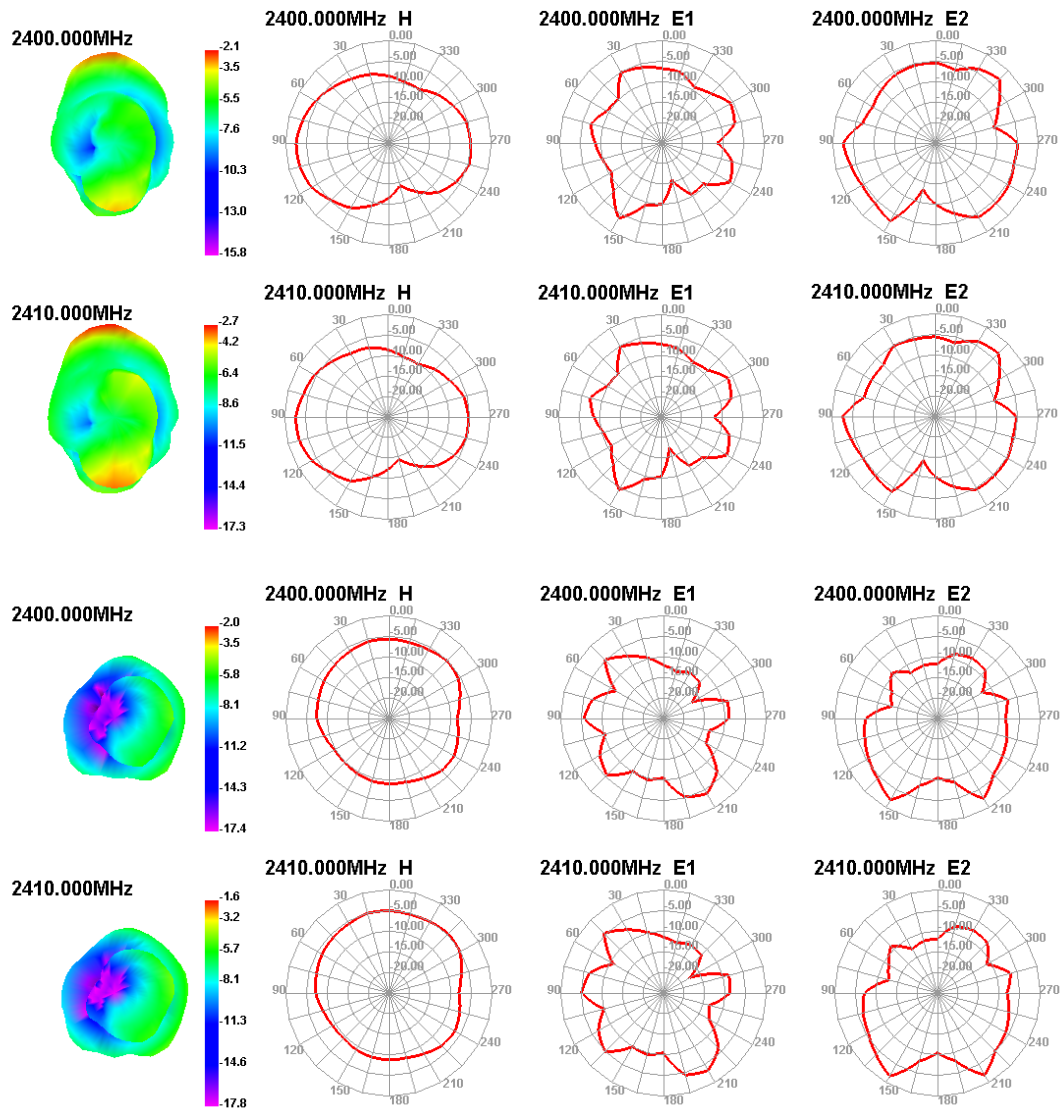


Return SWR

### 3.2 Active

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	31.63	-5	-1.5
2410	28.39	-5.47	-1.81
2420	28.69	-5.42	-1.65
2430	27.29	-5.64	-2.05
2440	25.73	-5.89	-2.25
2450	27.1	-5.67	-2.08
2460	26.39	-5.79	-1.93
2470	22.14	-6.55	-2.35
2480	24.14	-6.17	-2.18
2490	24.48	-6.11	-1.94
2500	22.85	-6.41	-1.82

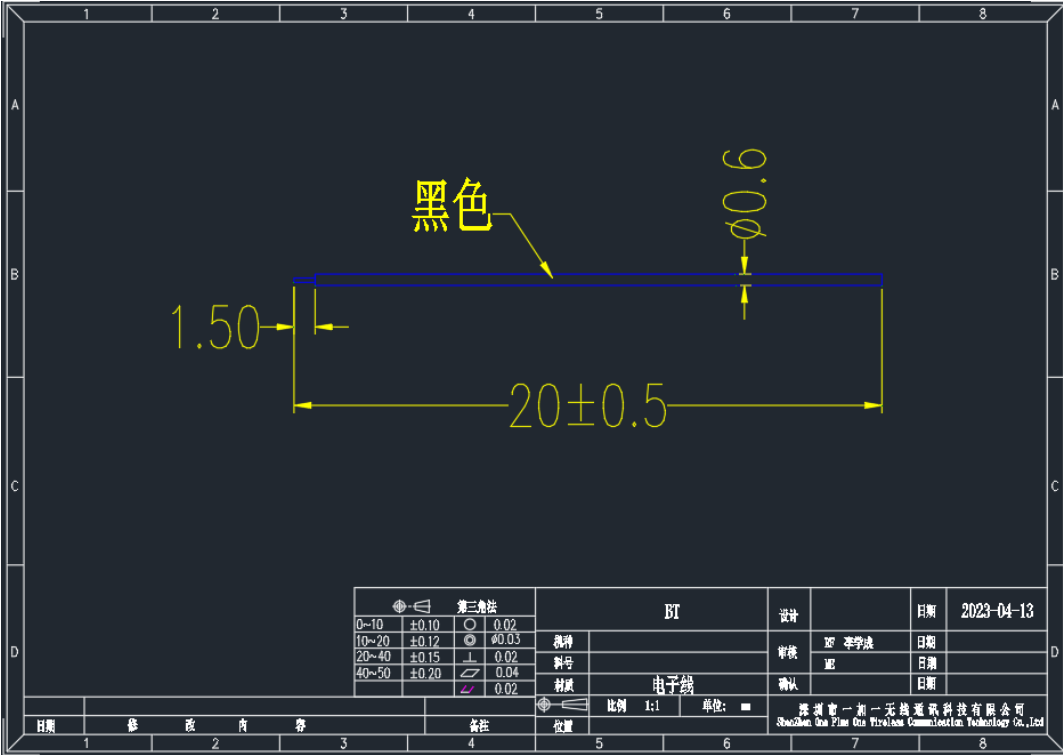
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4 Mechanical description

4.1 Drawings



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