



ONE PLUS ONE
Wireless Communication

深圳市一加一无线通讯技术有限公司

承认书

APPROVAL SHEET

| | |
|---------------------|--------------------|
| 客户 Customer | |
| 项目名 Project | R22 |
| 料号 Part NO. | |
| 规格 Specification | BT Antennas |

| APPROVAL | | | |
|-------------|----------|----------|------------|
| OnePlusOne: | | | |
| RF Check | ME Check | QC Check | Confirm By |
| | | | |
| Customer: | | | |
| EE Check | PM Check | QC Check | Confirm By |
| | | | |

| | | |
|---|----------------------|-----------------------------|
| Project:S3 PRO | Author: Haiou.Zhu | File Name: R22_APP_A.doc |
| Date: 2024-4-15 | | |
| Revision: | A | |
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|-----------|-----------|----------------------|------------|
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| 2024.4.15 | A | Initial sheet | Haiou.Zhu |
| | | | |
| | | | |

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1 Antenna description

It summarize BT 5.3 antennas for project S3PRO antenna's frequency band is 2400-2480MHz. BT 5.3 antenna's type is Monopole

1.1 Part number

Part number of antenna: S3PRO

1.2 Antenna pictures



2 Electrical Performance

2.1 Specification

| BT | |
|-----------------|-----------------|
| Frequency Range | 2400MHz~2500MHz |
| Return Loss | <-5 |
| Efficiency | >25 |

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.

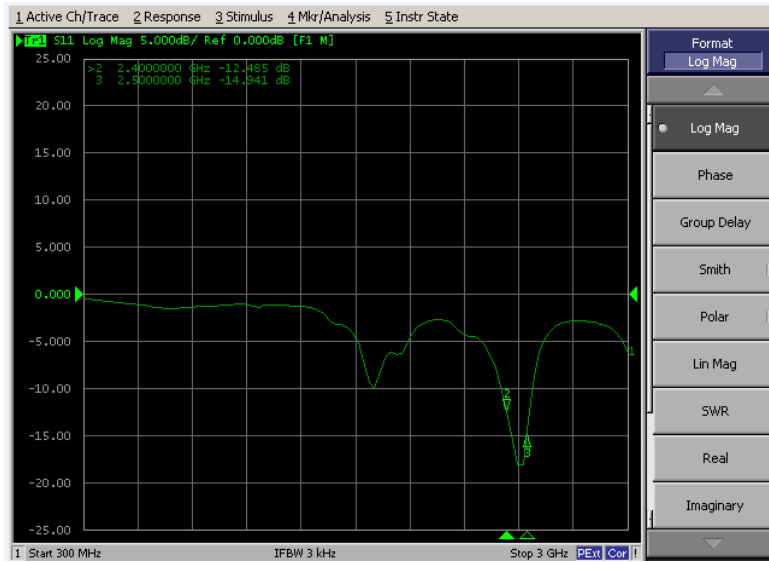
| | | |
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3 Reference measurement data

3.1 Passive



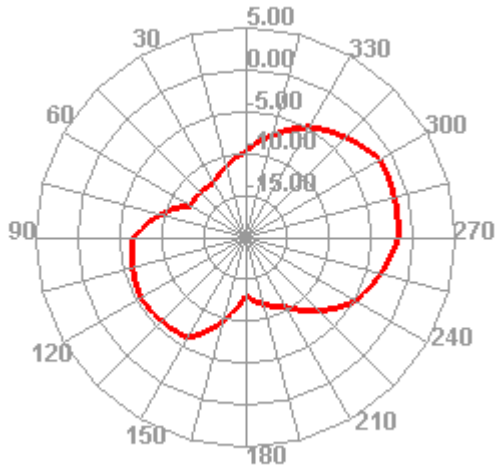
Return SWR

3.2 Active

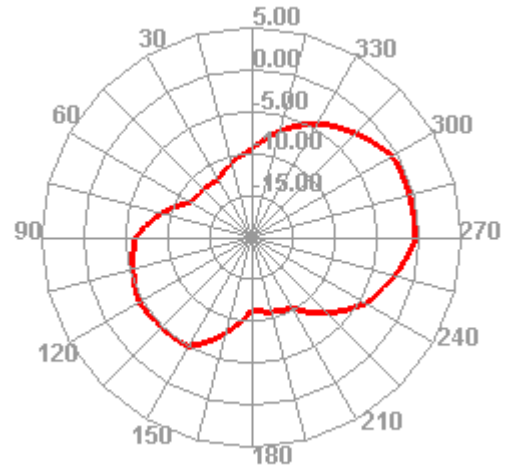
| Test Result | Bluetooth TRP | | |
|------------------------|---------------|--------|--------|
| | 0 | 39 | 78 |
| Frequency (MHz) | 2402 | 2441 | 2480 |
| Txp Ave (dBm) | -4.99 | -4.07 | -4.09 |
| NHPRP (dBm) | NULL | NULL | NULL |
| MAX (dBm) | -1.49 | -0.44 | -0.28 |
| EIRP peak (dBi) | -1.49 | -0.44 | -0.28 |
| Min (dBm) | -13.09 | -12.09 | -13.55 |
| Attenuation Horizontal | | 43.67 | 43.01 |

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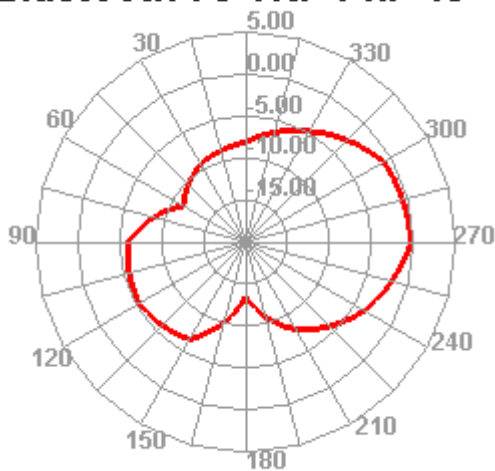
Bluetooth 0 TRP Phi=45



Bluetooth 39 TRP Phi=45



Bluetooth 78 TRP Phi=45

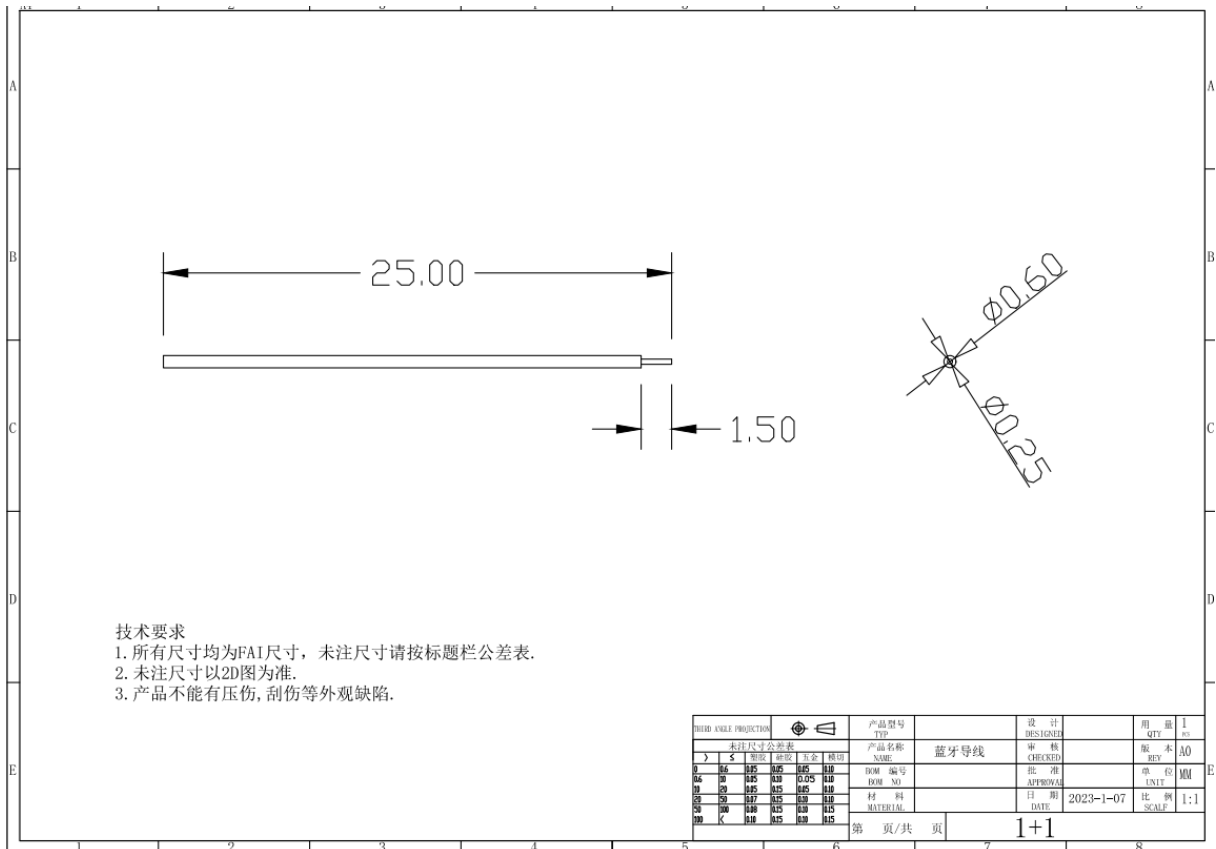


| Passive Test For BT | | |
|---------------------|----------|-----------|
| Freq (MHz) | Effi (%) | Effi (dB) |
| 2400 | 20.11 | -6.97 |
| 2410 | 19.79 | -7.04 |
| 2420 | 22.47 | -6.48 |
| 2430 | 20.84 | -6.81 |
| 2440 | 20.91 | -6.80 |
| 2450 | 19.74 | -7.05 |
| 2460 | 23.83 | -6.23 |
| 2470 | 20.19 | -6.95 |
| 2480 | 20.6 | -6.86 |
| 2490 | 20.43 | -6.90 |
| 2500 | 19.89 | -7.01 |

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4 Mechanical description

4.1 Drawings



| | | |
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