

## DV6076Z WIFI A Antenna information

### Record for version modification

| Date      | Revision | Modify Content          | Author      |
|-----------|----------|-------------------------|-------------|
| 2022-9-23 | V1.0     | 1 <sup>st</sup> Version | Tan Zhigang |
|           |          |                         |             |
|           |          |                         |             |
|           |          |                         |             |
|           |          |                         |             |
|           |          |                         |             |
|           |          |                         |             |
|           |          |                         |             |

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# 1. Project information

|                   |             |
|-------------------|-------------|
| Model No.         | DV6076Z     |
| HW Version        | V1          |
| SW Version        |             |
| Antenna type      | FPC         |
| Installation mode |             |
| WIFI Model        |             |
| Antenna supplier  |             |
| Tester            | Tan Zhigang |
| Acceptance        |             |
| Reviewer          |             |
| Date              | 2022/9/23   |

## 2. Appearance and specification



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Technical drawing of a PCB (Printed Circuit Board) showing dimensions and specifications.

**Dimensions:**

- Overall width:  $20.4 \pm 0.2$
- Overall height:  $11 \pm 0.2$
- Release paper containing adhesive paper:  $0.35 \pm 0.05$

**Labels:**

- Through hole
- Gilding

**Table 1: Specifications**

| Version | Modifications | Date |
|---------|---------------|------|
| Ta      | 首次发行          |      |
| T3      |               |      |
| Tc      |               |      |

**Table 2: Product Information**

| UNIT: mm                                                                                                  | COLOR:                                                                                                  | SCALE: 1:1                                                                                                        | TER: T.A |
|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------|
| <b>TOLERANCE</b><br>X.X $\pm 0.20$<br>.XX $\pm 0.10$<br>.XXX $\pm 0.05$<br>ANGULAR $\angle \pm 0.5^\circ$ | <b>PART NAME:</b> Bait-in aerial<br><b>PART NO:</b> FWYALB1381<br><b>MATERIAL:</b><br><b>FINISHING:</b> | <b>DATE:</b> 22.09.23<br><b>DRAWN:</b> Dai Hongbo<br><b>CHECKED:</b> Zeng Fanlin<br><b>APPROVED:</b> Tong Xiaoyan |          |

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### 3. Performance parameter

#### 3.1 Antenna passive test

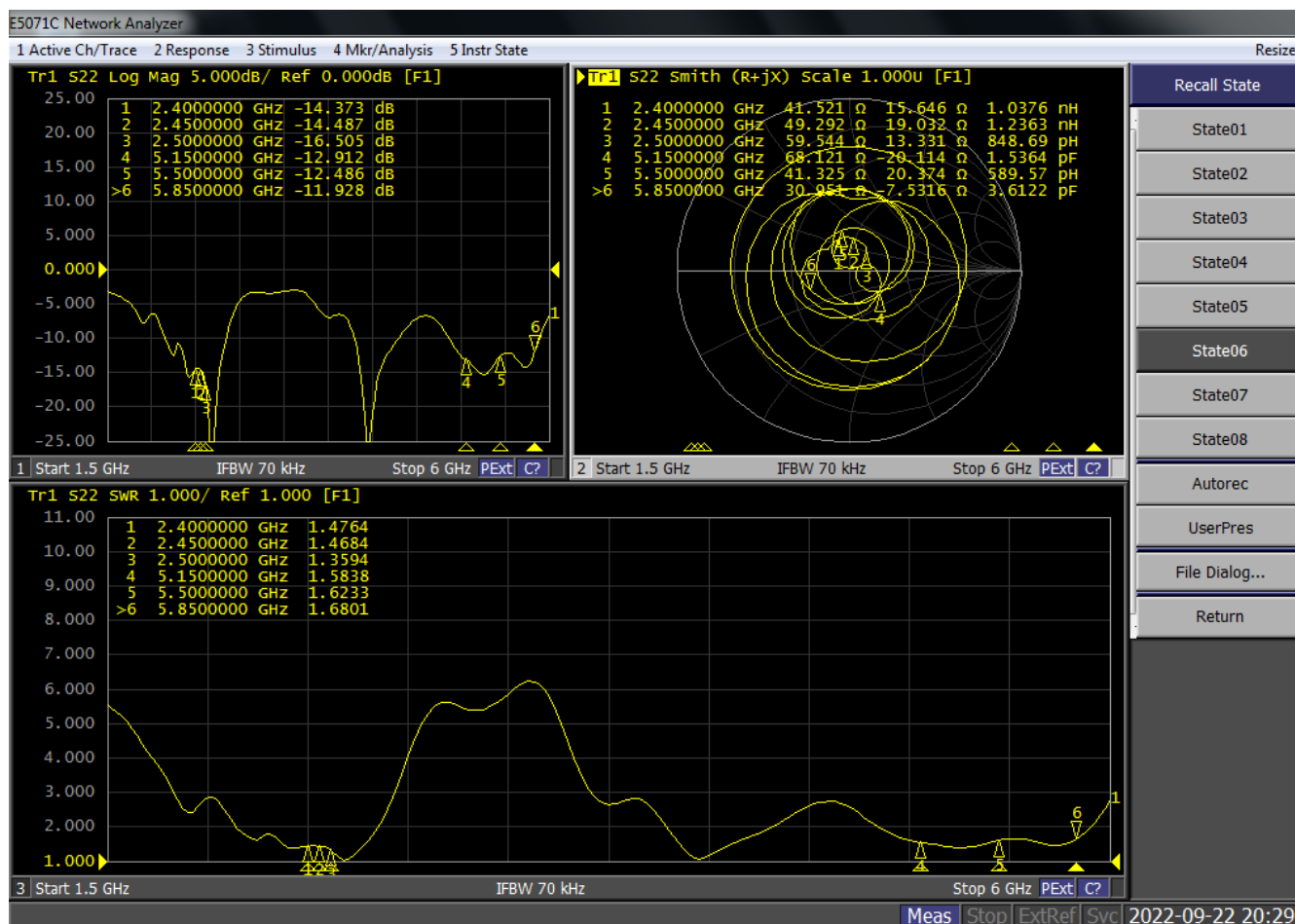
|                  |                                   |
|------------------|-----------------------------------|
| Frequency        | 2400Mhz~2483.5Mhz/5150Mhz~5850Mhz |
| Impedance        | 50Ω                               |
| Max Antenna Gain | 2.4G Antenna A: 2.51Bi;           |
|                  | 5G Antenna A: 3.19dBi;            |
| Power capacity   | <12w                              |
| Radiation        | Omni-directional                  |

### 3.1.1 Reflection loss&V.S.W.R

Test tools: network analyzer

Standard: Reflection loss $\leq$ -10db V.S.W.R $\leq$ 2

Antenna-WIFI A



V.S.W.R

|          |     |      |     |      |     |      |
|----------|-----|------|-----|------|-----|------|
| Freq/GHz | 2.4 | 2.45 | 2.5 | 5.15 | 5.5 | 5.85 |
| VSWR     | 1.4 | 1.4  | 1.3 | 1.5  | 1.6 | 1.6  |

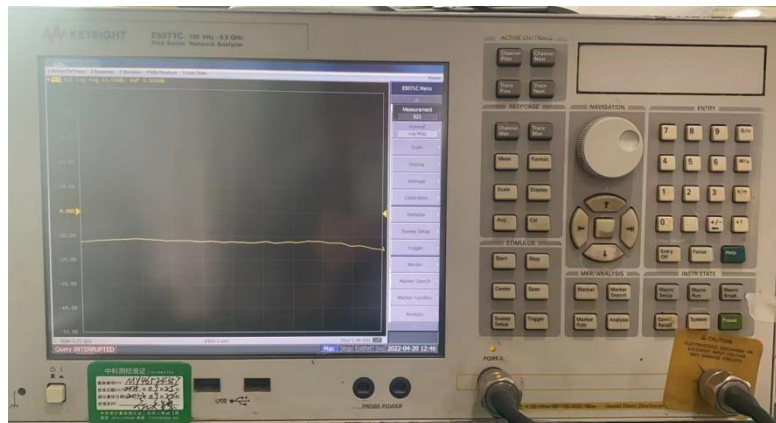
### 3.1.2 Gain & Efficiency

Test tools: Microwave Anechoic Chamber+Agilent Technologies E5071C

Standard: 2.4G  $1.5\text{dBi} \leq \text{Gain} \leq 6\text{dBi}$  Efficiency  $\geq 50\%$

5G  $1.7\text{dBi} \leq \text{Gain} \leq 6\text{dBi}$  Efficiency  $\geq 50\%$

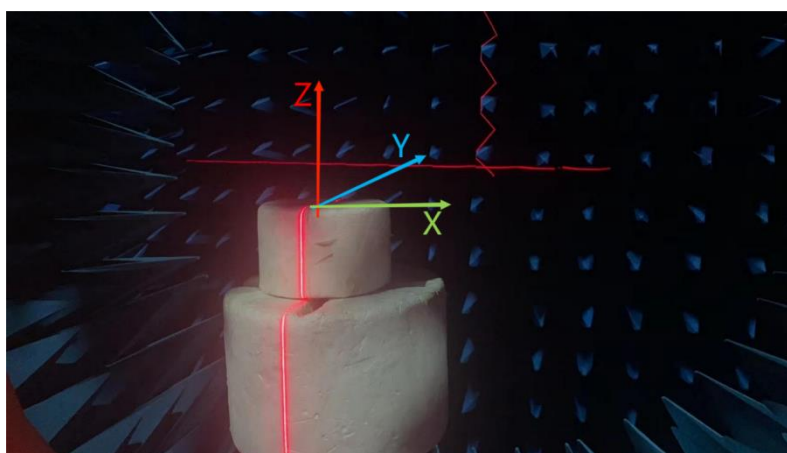
Testing Environment: As shown in the figure



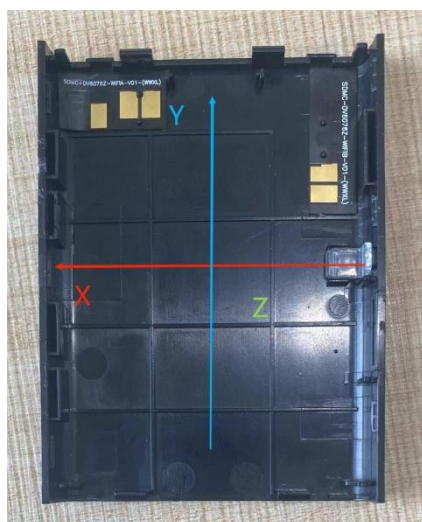
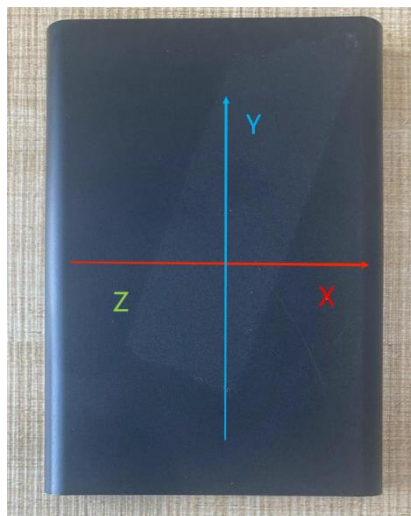
Agilent Technologies E5071C



ROHDE&SCHWARZ CMW500



Microwave Anechoic Chamber



Antenna test data

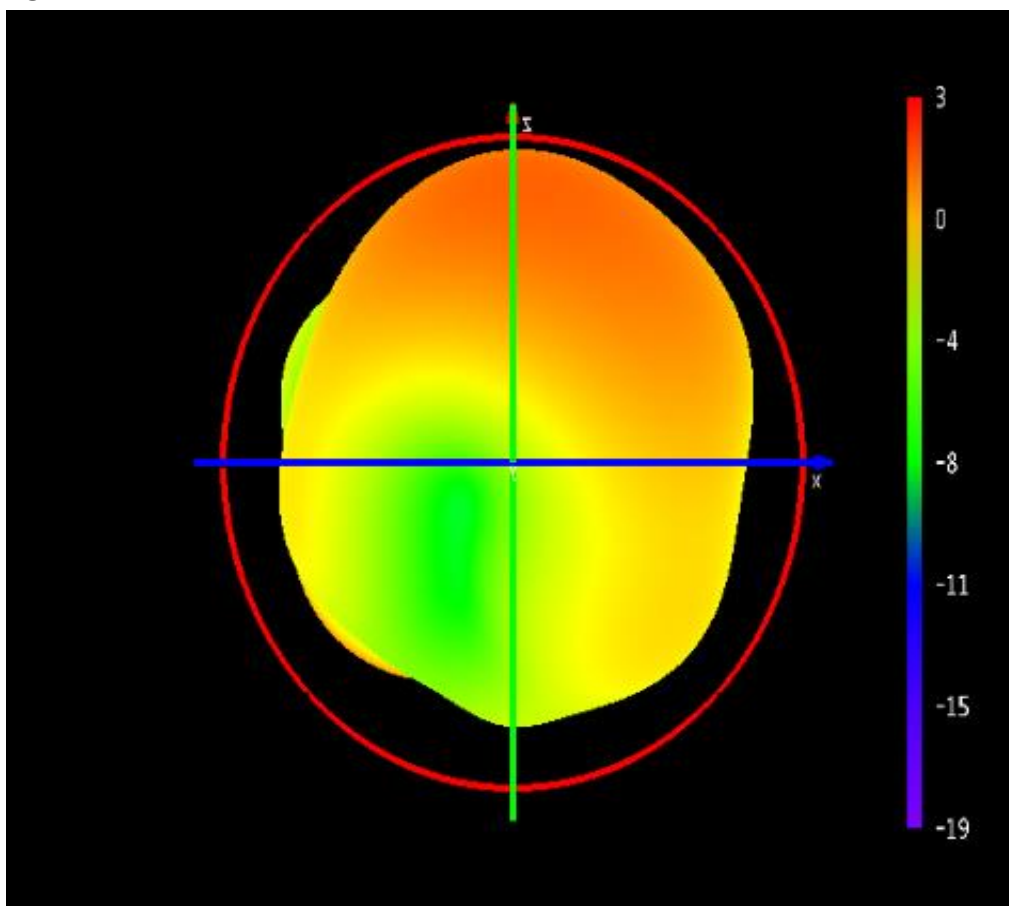
Unit: dBi

| WIFI-A          |           |                |                 |           |                |
|-----------------|-----------|----------------|-----------------|-----------|----------------|
| 2.4G            |           |                | 5G              |           |                |
| Frequency / MHz | Gain/ dBi | Efficiency / % | Frequency / MHz | Gain/ dBi | Efficiency / % |
| 2400            | 2         | 44.87          | 5150            | 2.91      | 52.4           |
| 2410            | 2.03      | 43.99          | 5200            | 3.19      | 53.5           |
| 2420            | 2.16      | 44.06          | 5250            | 3.11      | 52.82          |
| 2430            | 2.26      | 44.19          | 5300            | 3.11      | 52.97          |
| 2440            | 2.35      | 44.46          | 5350            | 3.08      | 53.54          |
| 2450            | 2.41      | 44.7           | 5400            | 2.94      | 53.25          |
| 2460            | 2.46      | 45.14          | 5450            | 2.84      | 52.65          |
| 2470            | 2.45      | 45.35          | 5500            | 2.75      | 52.47          |
| 2480            | 2.46      | 45.42          | 5550            | 2.76      | 51.75          |
| 2490            | 2.47      | 45.82          | 5600            | 2.71      | 50.49          |
| 2500            | 2.51      | 45.89          | 5650            | 2.74      | 50.17          |
|                 |           |                | 5700            | 2.74      | 49.38          |
|                 |           |                | 5750            | 2.56      | 48.05          |
|                 |           |                | 5800            | 2.35      | 47.14          |
|                 |           |                | 5850            | 2.16      | 46.64          |

3D directional diagram (maximum)

2500MHz

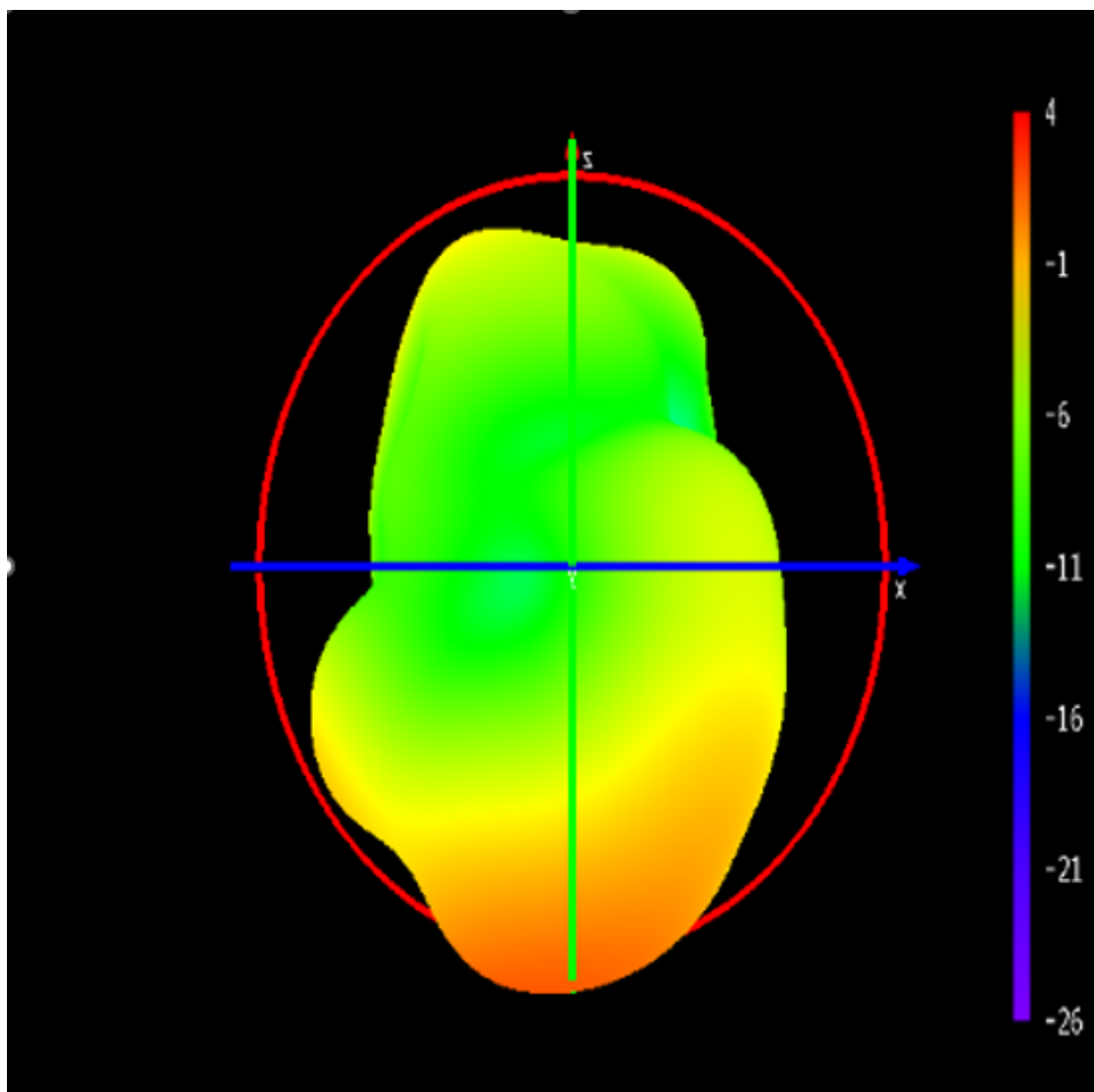
Unit: dBi



3D directional diagram (maximum)

5200MHz

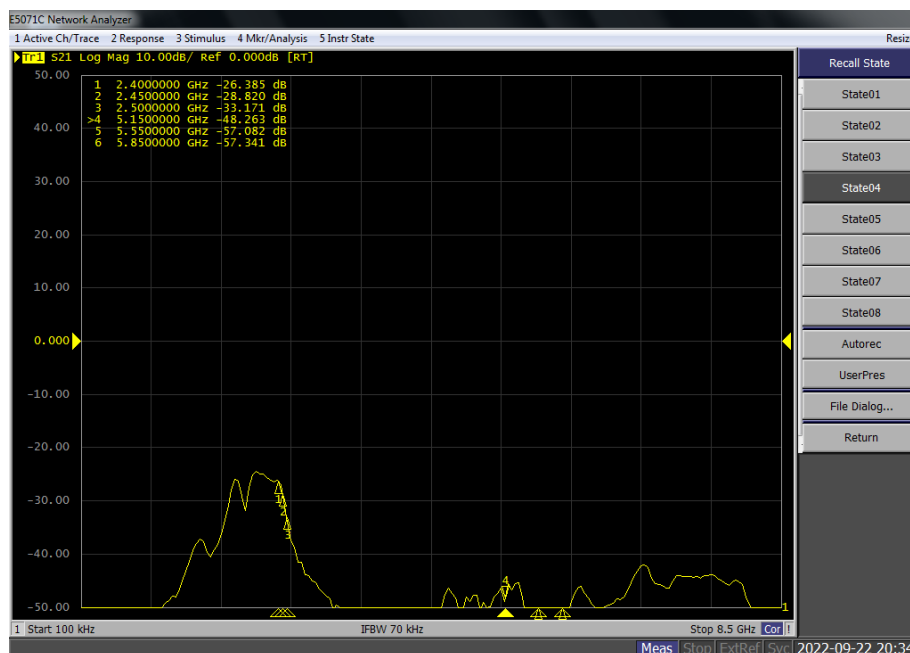
Unit: dBi



### 3.1.3 Antenna isolation

Test tools: network analyzer

Standard: Isolation  $\leq$  -20dB



Isolation of antenna A and antenna B(2.4G+5.8G)

### 3.2 Antenna active test

Test tools: Microwave Anechoic Chamber+ROHDE&SCHWARZ CMW 500

Standard: As shown in the table

Testing Environment: Same as passive test

Test mode: 802.11b 11Mbps BW 20M

Standard: TRP  $\geq$  10dbm TIS  $\leq$  -60dbm

| Test            | Wifi 2G TRP |       |       |  | Test            | Wifi 2G TIS |       |        |
|-----------------|-------------|-------|-------|--|-----------------|-------------|-------|--------|
| CH              | 1           | 6     | 11    |  | CH              | 1           | 6     | 11     |
| Frequency (MHz) | 2412        | 2437  | 2462  |  | Frequency (MHz) | 2412        | 2437  | 2462   |
| TRP(dBm)        | 14.02       | 15.01 | 15.83 |  | TIS(dBm)        | -79.89      | -82.4 | -78.87 |

Test mode: 802.11g 54Mbps BW 20M

Standard: TRP≥10dbm TIS≤-60dbm

| Test            | Wifi 2G TRP |       |       | Test            | Wifi 2G TIS |        |        |
|-----------------|-------------|-------|-------|-----------------|-------------|--------|--------|
| CH              | 1           | 6     | 11    | CH              | 1           | 6      | 11     |
| Frequency (MHz) | 2412        | 2437  | 2462  | Frequency (MHz) | 2412        | 2437   | 2462   |
| TRP(dBm)        | 12.59       | 13.92 | 14.14 | TIS(dBm)        | -72.12      | -72.63 | -71.61 |

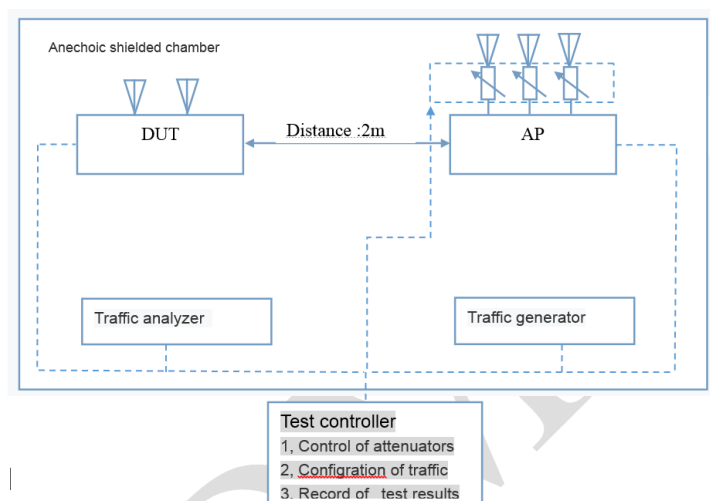
Test mode: 802.11a 54Mbps BW 20M

Standard: TRP≥10dbm TIS≤-60dbm

| Test            | Wifi 5G TRP |       |      |       | Test            | Wifi 5G TIS |        |        |        |
|-----------------|-------------|-------|------|-------|-----------------|-------------|--------|--------|--------|
| CH              | 36          | 48    | 149  | 161   | CH              | 36          | 48     | 149    | 161    |
| Frequency (MHz) | 5180        | 5240  | 5745 | 5805  | Frequency (MHz) | 5180        | 5240   | 5745   | 5805   |
| TRP(dBm)        | 11.09       | 11.09 | 16.2 | 16.12 | TIS(dBm)        | -78.12      | -77.86 | -74.23 | -77.15 |

## 4.Throughput Test

### 4.1 Test Setup(根据自己实际情况，描述下组网情况)



1. The test setup SHALL locate in the anechoic shielded chamber.
2. A Traffic Generator/Analyzer, sending the Ethernet packets, connects to the LAN interface of the AP. The peer AP antenna is located in 2 meter to the DUT.
3. Additional attenuation is added in each RF chain of AP to simulate the incremental distance.
4. The host SHALL send the Ethernet packet at the maximum rate which the DUT can achieve theoretically.
5. TCP connection SHALL be used for Ethernet packet transmission in the test.

#### 4.2 Testing Environment(附环境照片)

