

规格承认书  
SPECIFICATION FOR APPROVAL

日期  
DATE: 2024.07.03

版本  
REV.: V1.0

客 户  
CUSTOMER: 德明通讯（上海）股份有限公司

客 户 料 号  
CUSTOMER P/N: \*\*\*\*\*

品 名  
PART NAME: PW550-NA Antenna

供 方 料 号  
SUPPLIER P/N: N12-7548-R0A

送样日期 Date: 送样数量 Q'TY: Pcs

| 客户确认 CUSTOMER APPROVED BY |                |             |
|---------------------------|----------------|-------------|
| 工程研发部                     | 生产采购部          | 承认          |
| ENGINEER R&D DEPT         | BUSSINESS DEPT | APPROVED BY |
|                           |                |             |

| 供方确认 SUPPLIER SIGNATURE |                   |          |
|-------------------------|-------------------|----------|
| 研发部                     | 工程部               | 批准       |
| ENGINEER R&D DEPT       | ENGINEER R&D DEPT | APPROVAL |
|                         |                   |          |

# Revised History

[illegible]

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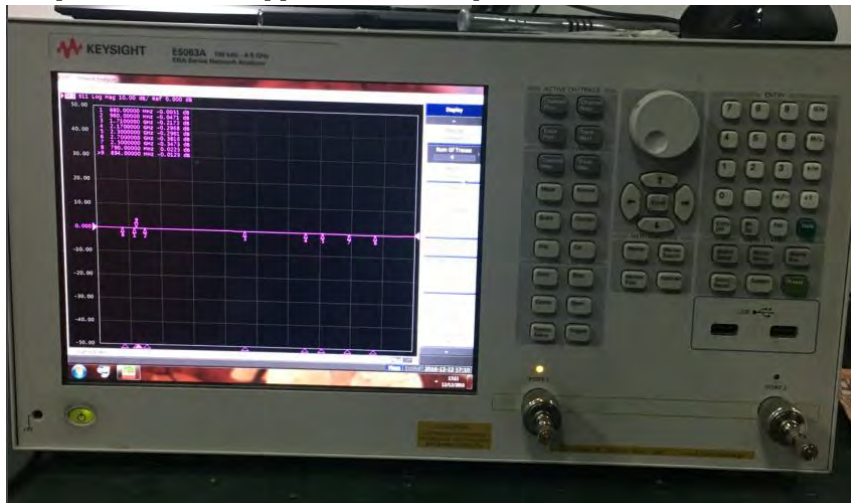
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## 1. RF Fixture Experiment

### 1.1 Test Setup

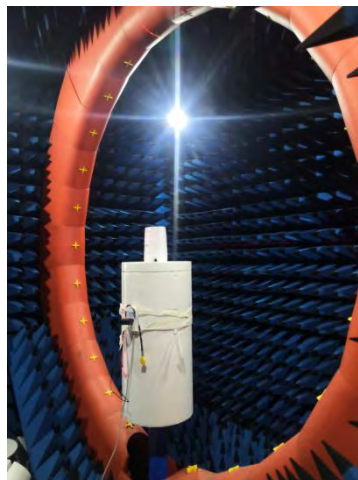
#### 1.1.1 VNA Test Setup

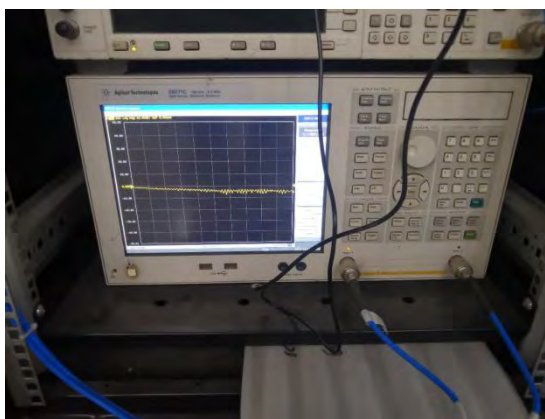
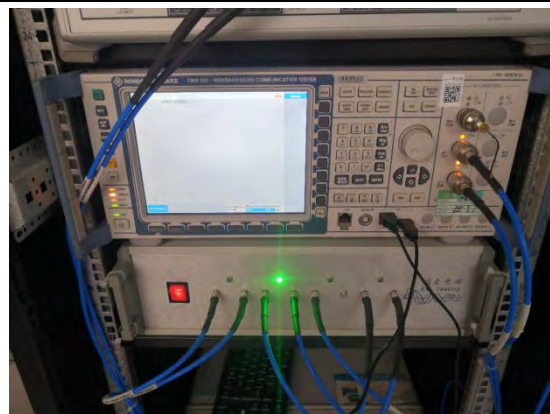
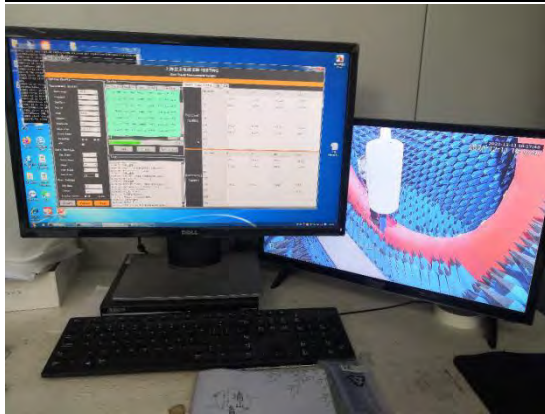
VSWR and Return Loss measurements (S11) were performed using an Keysight E5071C Network Analyzer. The isolation between antennas is also tested. The testing was performed with apparatus in free space.



#### 1.1.2 Anechoic Chamber Test Setup

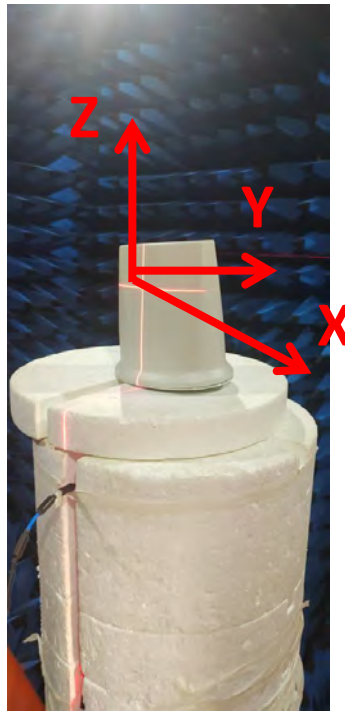
When we test Gain and Efficiency of the antenna, we will use the ETS 3D chamber. The chamber provides test frequency from 400MHz to 6GHz. The real test environment is showing as following picture



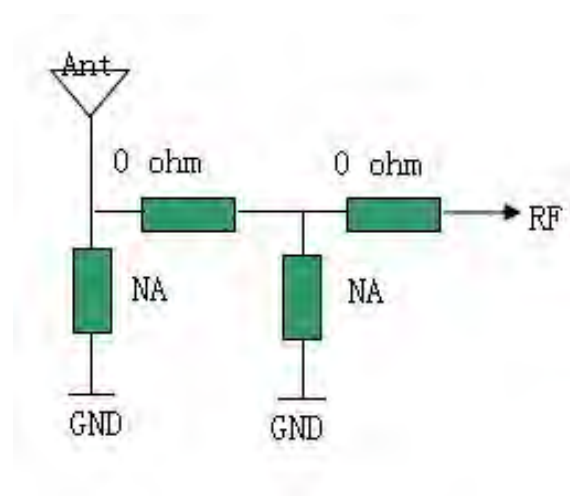


## 1.2 UE configuration

### 1.2.1 Antenna location pictures

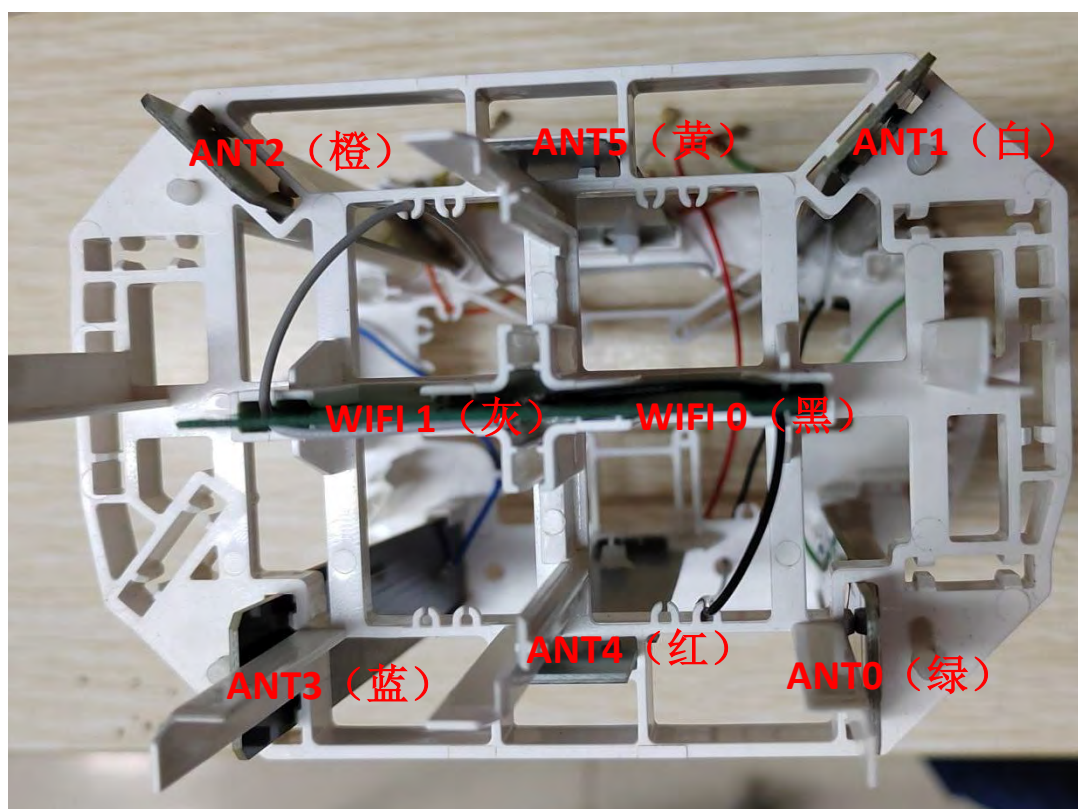


### 1.2.2 RF matching for different antennas



### 1.2.3

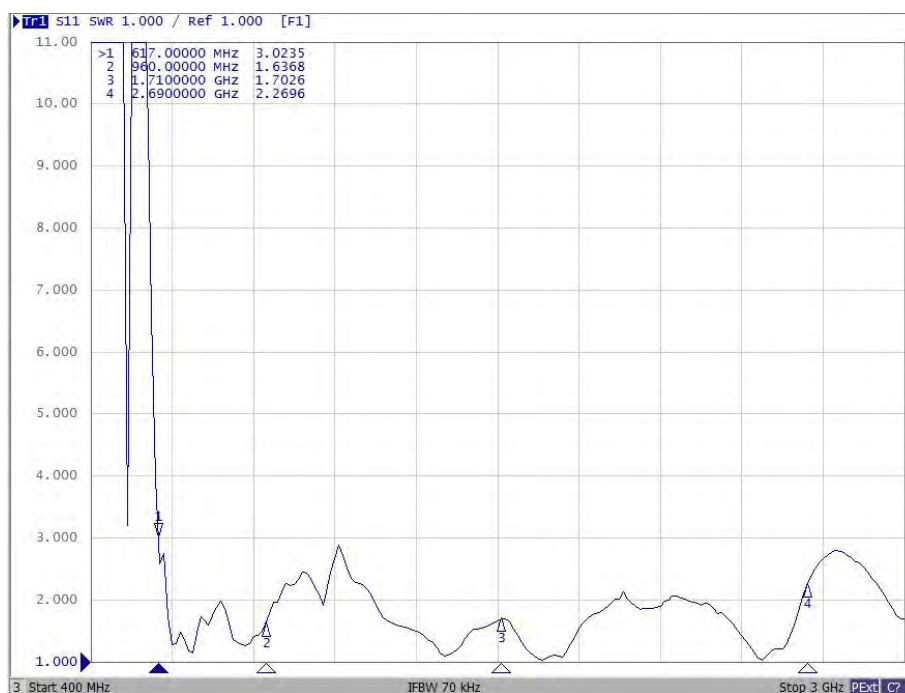
#### Physical figure



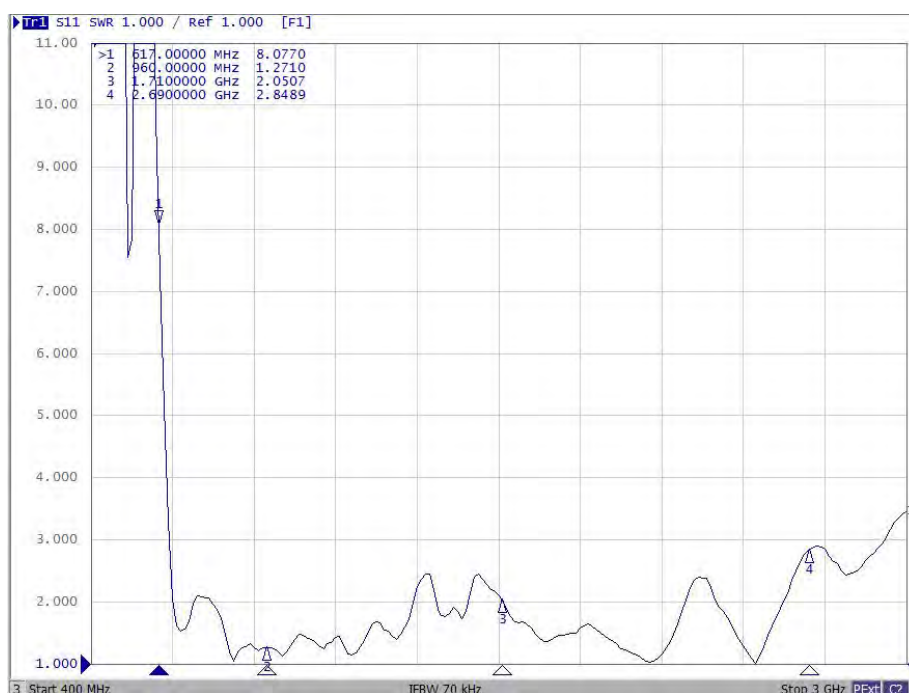
|          |              |              |              |
|----------|--------------|--------------|--------------|
| ANT0     | 617~960MHz   | 1710~2690MHz | /            |
| ANT2     | 617~960MHz   | 1710~2690MHz | /            |
| ANT4     | 3300~4200MHz | /            | /            |
| ANT1     | 1930~2690MHz | 3300~4200MHz | 5150~5925MHz |
| ANT3     | 1710~2690MHz | 3300~4200MHz | 5150~5925MHz |
| ANT5     | 3300~4200MHz | /            | /            |
| WIFI 0/1 | 2400~2500MHz | 5150~5850MHz | /            |

## 2.1 Passive Test Result(S parameters)

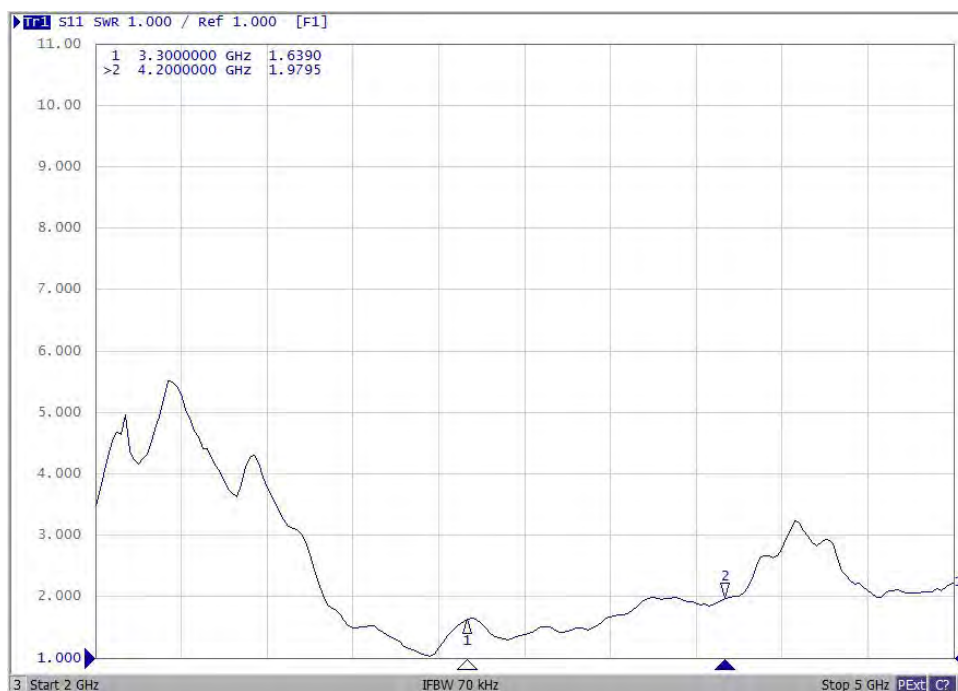
Antenna 0 617~960MHz 1710~2690MHz VSWR



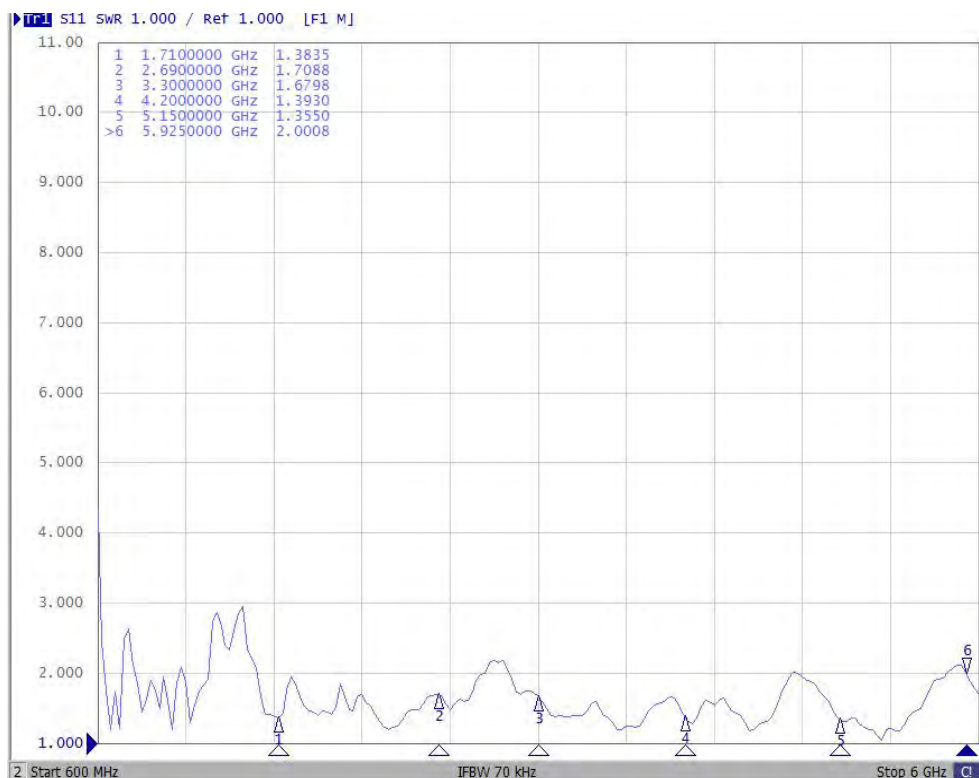
Antenna 2 617~960MHz 1710~2690MHz VSWR



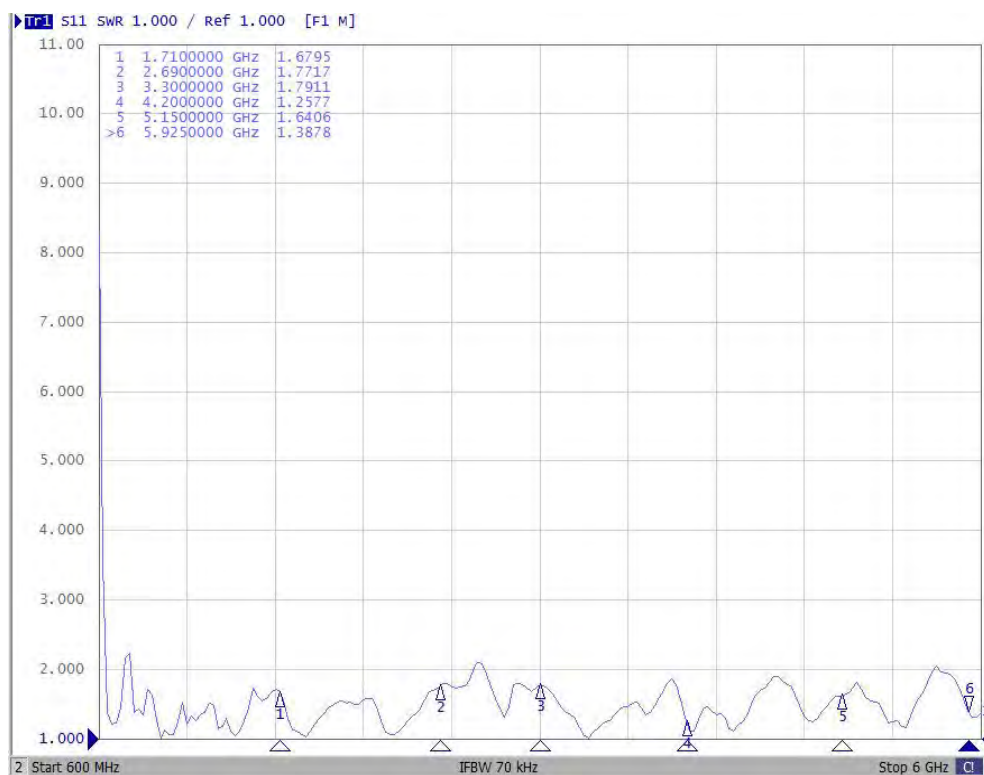
Antenna 4 3300~4200MHz VSWR



Antenna 1 1930~2690MHz 3300~4200MHz 5150~5925MHz VSWR



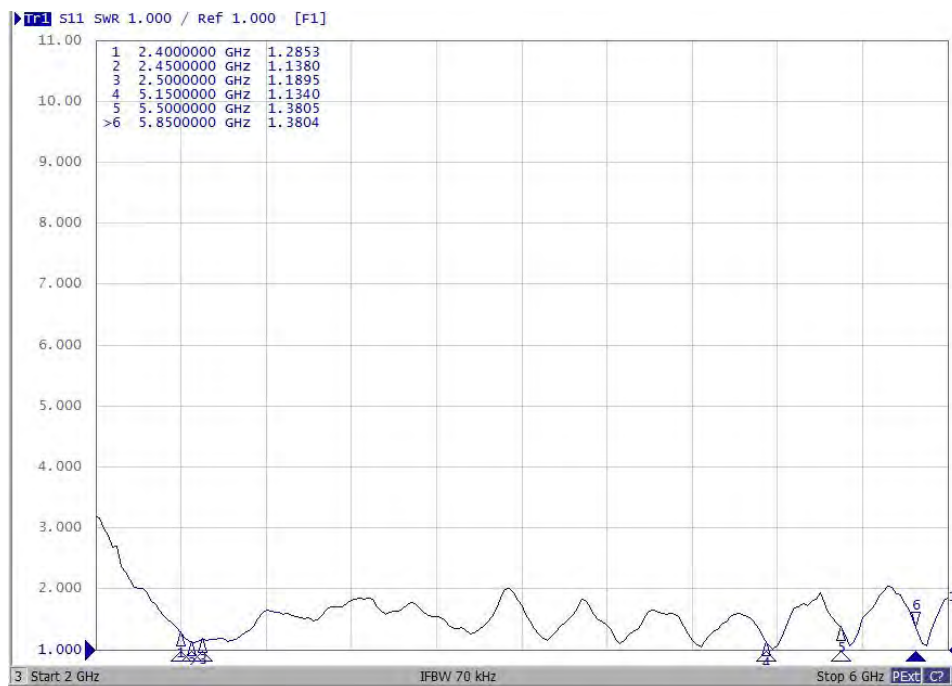
Antenna 3 1710~2690MHz 3300~4200MHz 5150~5925MHz VSWR



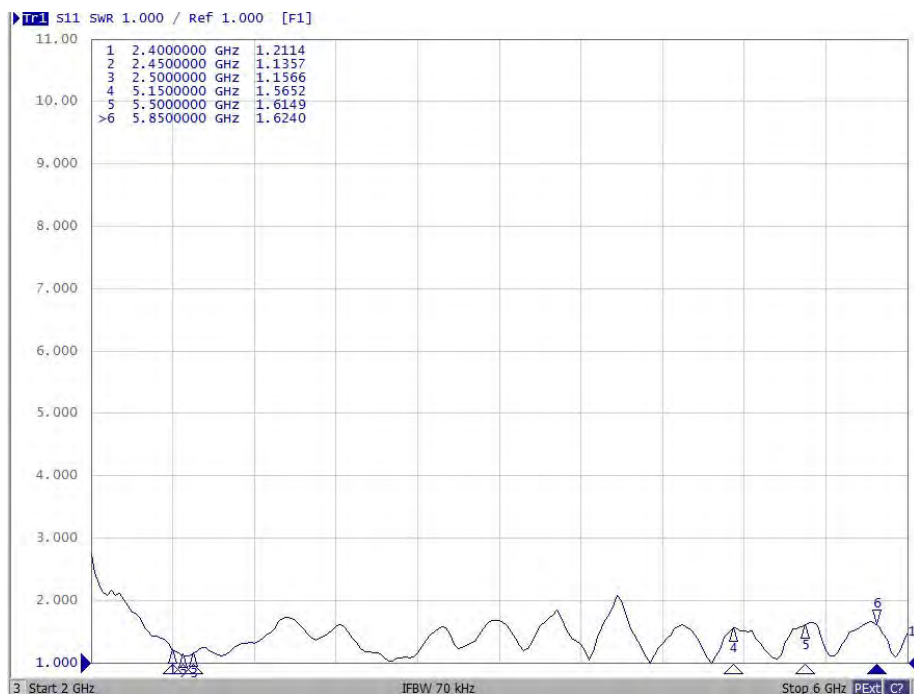
Antenna 5 3300~4200MHz VSWR



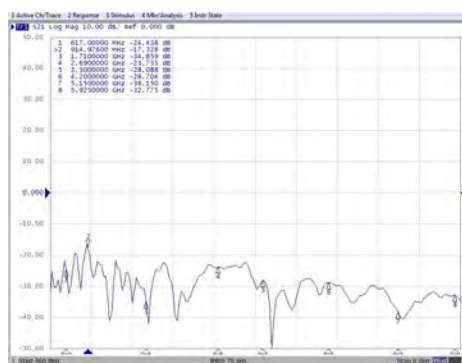
WIFI 0 2400~2500MHz 5150~5850MHz VSWR



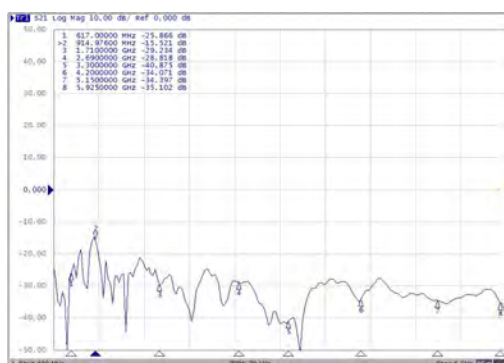
WIFI 1 2400~2500MHz 5150~5850MHz VSWR



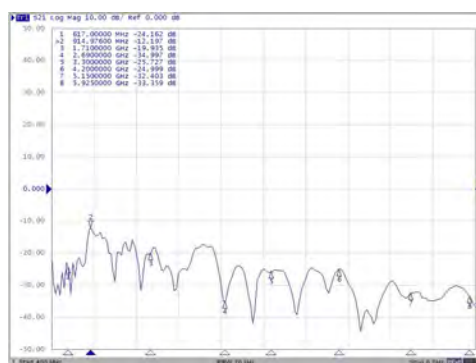
617~960MHz 1710~2690MHz Antenna 0 &  
617~960MHz 1710~2690MHz Antenna 2  
S21



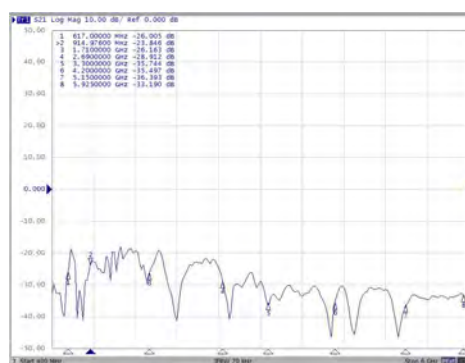
617~960MHz 1710~2690MHz Antenna 0 &  
3300~4200MHz Antenna 4 S21



617~960MHz 1710~2690MHz Antenna 0 &  
1930~2690MHz 3300~4200MHz  
5150~5925MHz Antenna 1 S21

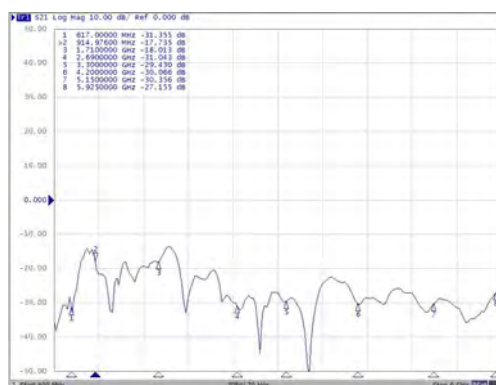
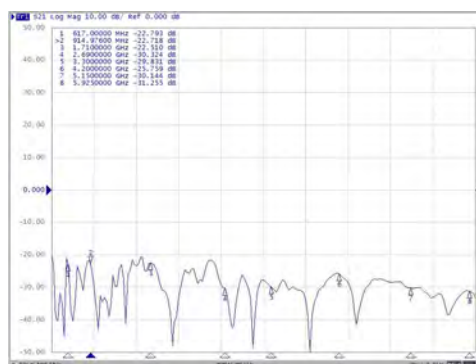


617~960MHz 1710~2690MHz Antenna 0 &  
1710~2690MHz 3300~4200MHz  
5150~5925MHz Antenna 3 S21



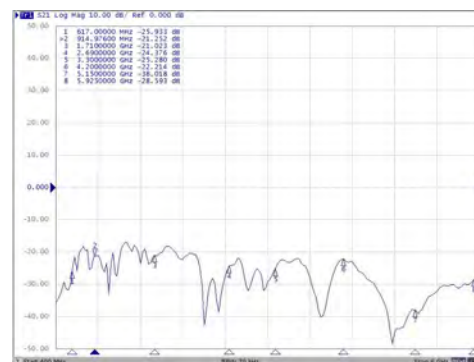
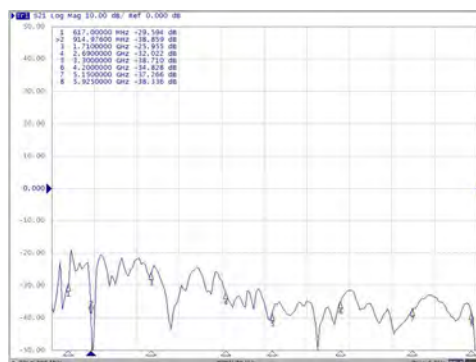
617~960MHz 1710~2690MHz Antenna 0 &  
3300~4200MHz Antenna 5 S21

617~960MHz 1710~2690MHz Antenna 0 &  
2400~2500MHz 5150~5850MHz WIFI 0  
S21



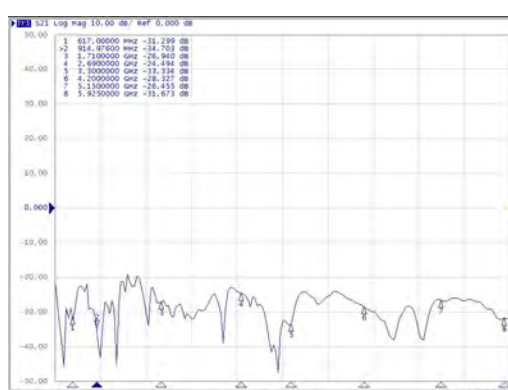
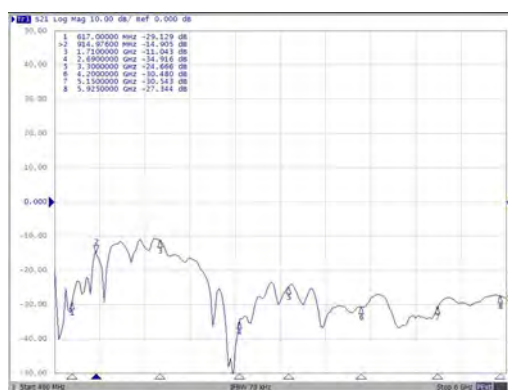
617~960MHz 1710~2690MHz Antenna 0 &  
2400~2500MHz 5150~5850MHz WIFI 1  
S21

617~960MHz 1710~2690MHz Antenna 2 &  
3300~4200MHz Antenna 4 S21



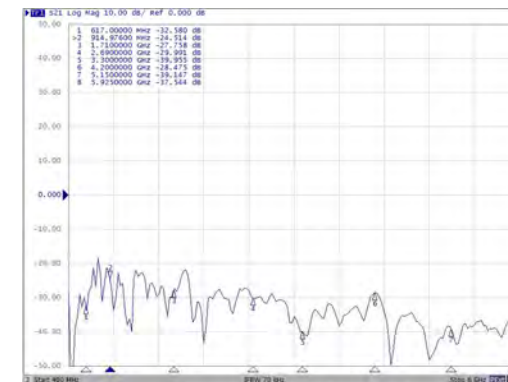
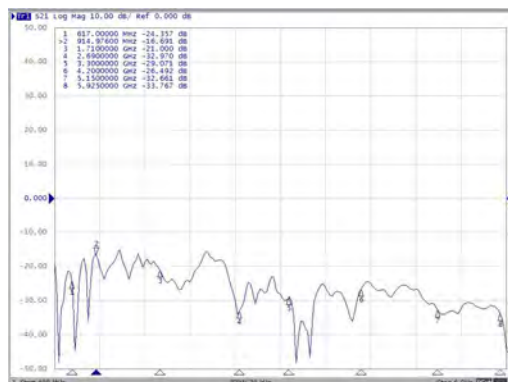
617~960MHz 1710~2690MHz Antenna 2 &  
1930~2690MHz 3300~4200MHz  
5150~5925MHz Antenna 1 S21

617~960MHz 1710~2690MHz Antenna 2 &  
1710~2690MHz 3300~4200MHz  
5150~5925MHz  
Antenna 3 S21



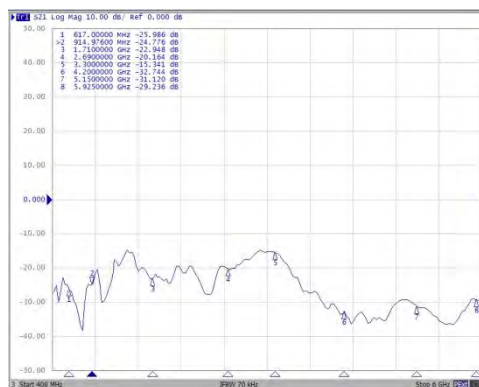
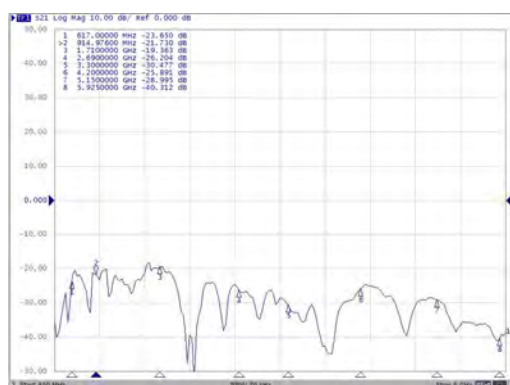
617~960MHz 1710~2690MHz Antenna 2 &  
3300~4200MHz Antenna 5 S21

617~960MHz 1710~2690MHz Antenna 2 &  
2400~2500MHz 5150~5850MHz WIFI 0  
S21



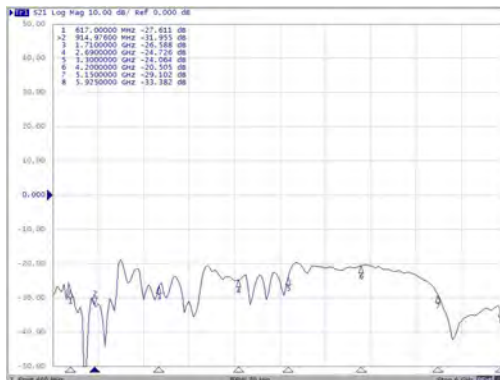
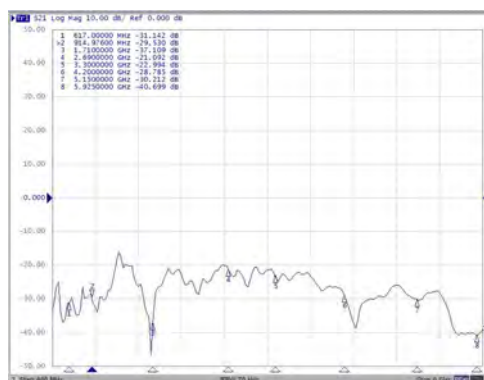
617~960MHz 1710~2690MHz Antenna2 &  
2400~2500MHz 5150~5850MHz  
WIFI 1 S21

3300~4200MHz Antenna 4 &  
1930~2690MHz 3300~4200MHz  
5150~5925MHz  
Antenna 1 S21



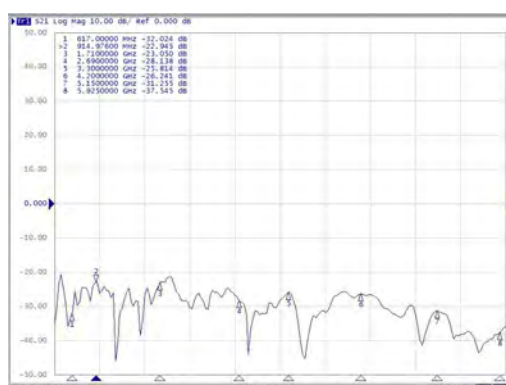
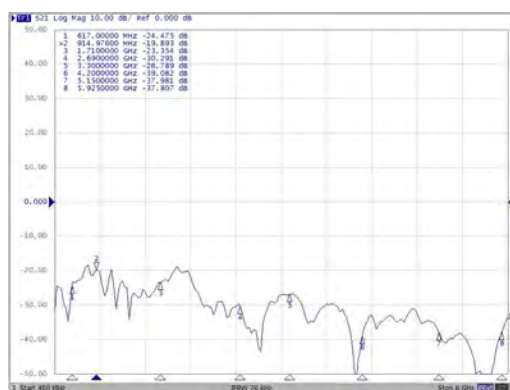
3300~4200MHz Antenna4 &  
1710~2690MHz 3300~4200MHz  
5150~5925MHz  
Antenna 3 S21

3300~4200MHz Antenna 4 &  
3300~4200MHz Antenna 5 S21



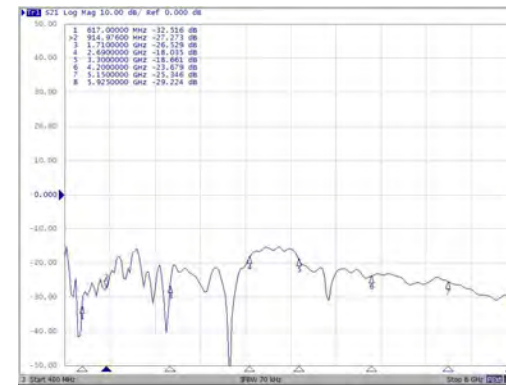
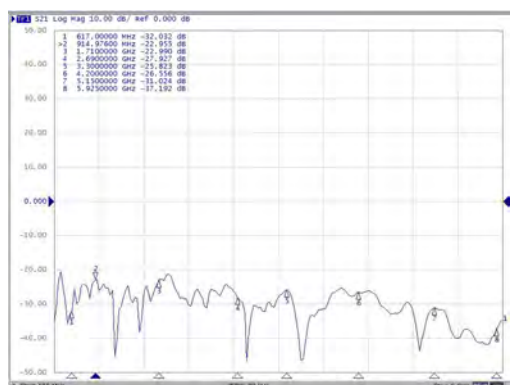
3300~4200MHz Antenna4 &  
2400~2500MHz 5150~5850MHz WIFI 0  
S21

3300~4200MHz Antenna 4&  
2400~2500MHz 5150~5850MHz WIFI 1  
S21



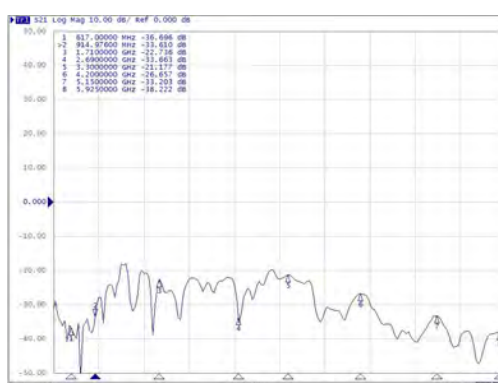
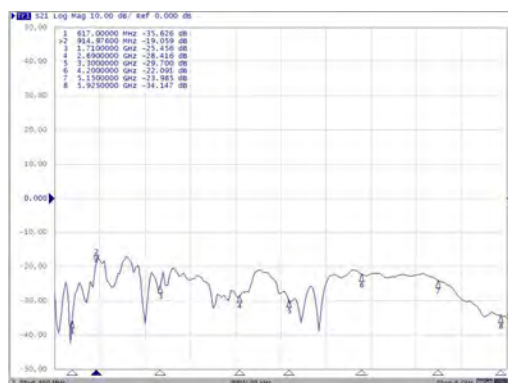
1930~2690MHz 3300~4200MHz  
5150~5925MHz Antenna 1 &  
1710~2690MHz 3300~4200MHz  
5150~5925MHz  
Antenna 3 S21

1930~2690MHz 3300~4200MHz  
5150~5925MHz Antenna 1 &  
3300~4200MHz Antenna 5 S21



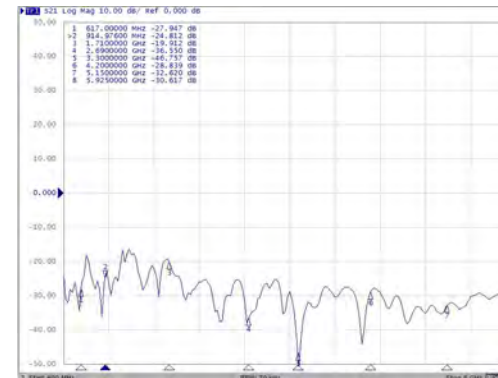
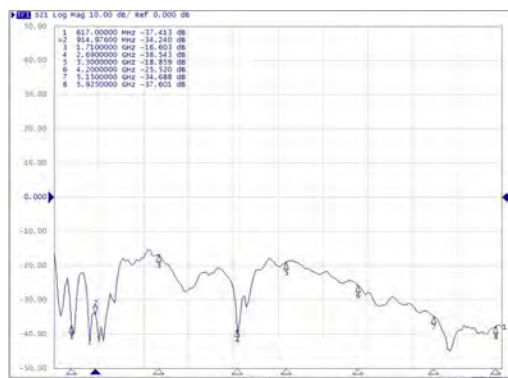
1930~2690MHz 3300~4200MHz  
5150~5925MHz Antenna1 &  
2400~2500MHz 5150~5850MHz WIFI 0  
S21

1930~2690MHz 3300~4200MHz  
5150~5925MHz Antenna 1 &  
2400~2500MHz 5150~5850MHz WIFI 1  
S21



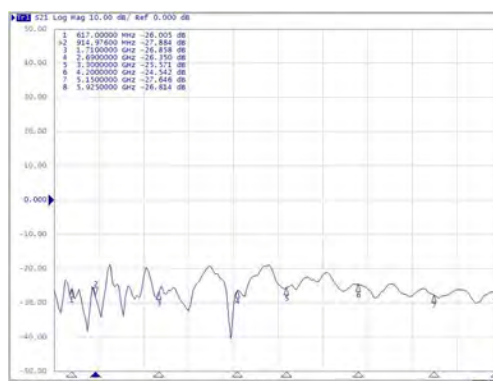
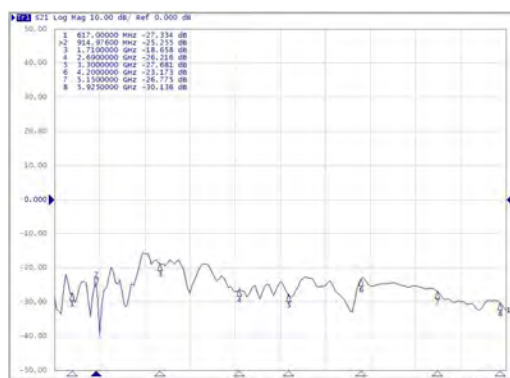
1710~2690MHz 3300~4200MHz  
5150~5925MHz Antenna 3 &  
3300~4200MHz Antenna 5 S21

1710~2690MHz 3300~4200MHz  
5150~5925MHz Antenna3 &  
2400~2500MHz 5150~5850MHz WIFI 0  
S21



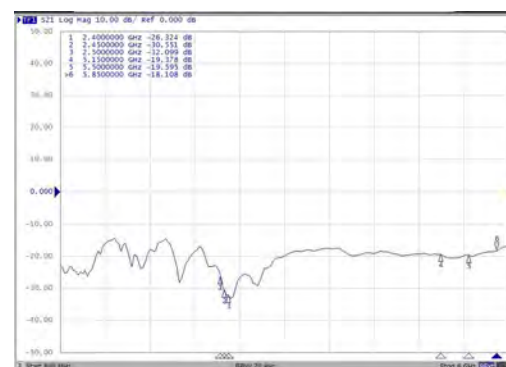
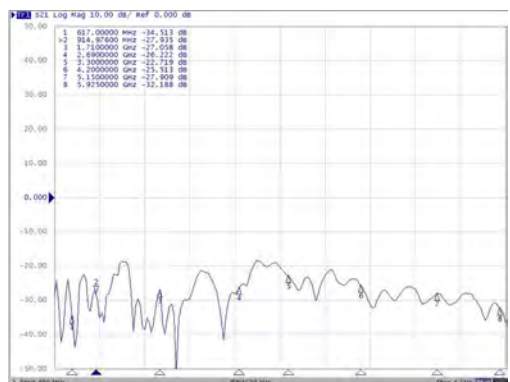
1710~2690MHz 3300~4200MHz  
5150~5925MHz Antenna3&  
2400~2500MHz 5150~5850MHz WIFI 1  
S21

3300~4200MHz Antenna 5 &  
2400~2500MHz 5150~5850MHz WIFI 0  
S21



3300~4200MHz Antenna 5 &  
2400~2500MHz 5150~5850MHz WIFI 1  
S21

2400~2500MHz 5150~5850MHz WIFI 0 &  
2400~2500MHz 5150~5850MHz WIFI 1 S21



Antenna 0    617~960MHz 1710~2690MHz    Efficiency

| Frequency<br>(MHz) | Gain(dBi) | Efficiency(%) | Frequency<br>(MHz) | Gain(dBi) | Efficiency(%) |
|--------------------|-----------|---------------|--------------------|-----------|---------------|
| 600                | -3.28     | 16.69         | 1700               | 1.24      | 55.53         |
| 620                | 0.56      | 31.26         | 1740               | 1.30      | 55.16         |
| 640                | -0.48     | 28.03         | 1780               | 1.47      | 59.50         |
| 660                | -1.33     | 20.84         | 1820               | 1.20      | 50.75         |
| 680                | -1.12     | 22.30         | 1860               | 1.46      | 50.86         |
| 700                | 0.29      | 33.88         | 1900               | 1.53      | 55.98         |
| 720                | 1.86      | 32.84         | 1940               | 1.81      | 53.63         |
| 740                | 1.22      | 41.73         | 1980               | 1.82      | 54.61         |
| 760                | 1.31      | 43.54         | 2020               | 1.38      | 54.68         |
| 780                | 1.60      | 39.26         | 2060               | 1.02      | 52.21         |
| 800                | 0.87      | 38.70         | 2100               | 1.97      | 59.49         |
| 820                | 0.68      | 32.47         | 2140               | 1.03      | 51.94         |
| 840                | 0.90      | 35.30         | 2180               | 1.03      | 56.39         |
| 860                | 1.05      | 40.81         | 2220               | 1.39      | 52.31         |
| 880                | 1.63      | 46.45         | 2260               | 0.86      | 58.02         |
| 900                | 1.22      | 45.08         | 2300               | 0.22      | 58.11         |
| 920                | 1.31      | 47.38         | 2340               | 0.22      | 58.02         |
| 940                | 1.17      | 50.34         | 2380               | 0.79      | 55.70         |
| 960                | 1.60      | 49.19         | 2420               | 1.44      | 55.06         |
|                    |           |               | 2460               | 1.03      | 56.97         |
|                    |           |               | 2500               | 1.05      | 53.18         |
|                    |           |               | 2540               | 1.03      | 51.60         |
|                    |           |               | 2580               | 1.07      | 50.22         |
|                    |           |               | 2620               | 1.35      | 59.56         |
|                    |           |               | 2660               | 1.54      | 57.44         |
|                    |           |               | 2700               | 1.77      | 52.85         |

Antenna 2      617~960MHz 1710~2690MHz      Efficiency

| Frequency<br>(MHz) | Gain(dBi) | Efficiency(%) | Frequency<br>(MHz) | Gain(dBi) | Efficiency(%) |
|--------------------|-----------|---------------|--------------------|-----------|---------------|
| 600                | -8.08     | 8.73          | 1700               | 1.34      | 49.95         |
| 620                | -5.51     | 13.44         | 1740               | 1.82      | 52.61         |
| 640                | -4.19     | 17.83         | 1780               | 1.75      | 57.80         |
| 660                | -1.18     | 21.36         | 1820               | 1.70      | 55.55         |
| 680                | 0.06      | 32.14         | 1860               | 1.70      | 56.89         |
| 700                | 0.92      | 39.01         | 1900               | 1.00      | 57.68         |
| 720                | 0.33      | 45.19         | 1940               | 1.13      | 58.19         |
| 740                | 1.43      | 50.27         | 1980               | 1.65      | 58.46         |
| 760                | -0.06     | 47.13         | 2020               | 1.00      | 59.59         |
| 780                | 0.43      | 46.77         | 2060               | 1.37      | 58.73         |
| 800                | -0.25     | 41.65         | 2100               | 1.35      | 56.43         |
| 820                | 0.85      | 37.72         | 2140               | 1.15      | 57.02         |
| 840                | 1.56      | 44.91         | 2180               | 1.50      | 59.18         |
| 860                | 1.43      | 48.84         | 2220               | 1.38      | 53.38         |
| 880                | 1.32      | 55.62         | 2260               | 0.86      | 52.07         |
| 900                | 1.56      | 58.41         | 2300               | 0.22      | 43.88         |
| 920                | 1.60      | 54.06         | 2340               | 0.22      | 39.69         |
| 940                | 1.27      | 53.54         | 2380               | 0.56      | 41.66         |
| 960                | 0.97      | 52.39         | 2420               | 0.92      | 51.20         |
|                    |           |               | 2460               | 1.12      | 50.42         |
|                    |           |               | 2500               | 1.07      | 59.83         |
|                    |           |               | 2540               | 1.04      | 50.67         |
|                    |           |               | 2580               | 1.04      | 56.27         |
|                    |           |               | 2620               | 1.58      | 57.59         |
|                    |           |               | 2660               | 1.77      | 51.41         |
|                    |           |               | 2700               | 1.04      | 45.91         |

Antenna 4      3300~4200MHz      Efficiency

| Frequency (MHz) | Gain(dBi) | Efficiency(%) | Frequency (MHz) | Gain(dBi) | Efficiency(%) |
|-----------------|-----------|---------------|-----------------|-----------|---------------|
| 3300            | 3.34      | 50.52         |                 |           |               |
| 3350            | 4.55      | 52.13         |                 |           |               |
| 3400            | 4.86      | 53.08         |                 |           |               |
| 3450            | 5.18      | 53.56         |                 |           |               |
| 3500            | 5.84      | 54.00         |                 |           |               |
| 3550            | 5.84      | 55.58         |                 |           |               |
| 3600            | 5.09      | 54.66         |                 |           |               |
| 3650            | 5.41      | 56.90         |                 |           |               |
| 3700            | 5.43      | 58.27         |                 |           |               |
| 3750            | 4.95      | 58.21         |                 |           |               |
| 3800            | 4.58      | 57.89         |                 |           |               |
| 3850            | 3.30      | 55.20         |                 |           |               |
| 3900            | 4.02      | 54.44         |                 |           |               |
| 3950            | 4.45      | 52.76         |                 |           |               |
| 4000            | 4.70      | 50.25         |                 |           |               |
| 4050            | 4.67      | 59.52         |                 |           |               |
| 4100            | 4.45      | 50.59         |                 |           |               |
| 4150            | 4.38      | 53.05         |                 |           |               |
| 4200            | 4.10      | 52.49         |                 |           |               |

Antenna 1      1930~2690MHz      3300~4200MHz      5150~5925MHz  
Efficiency

| Frequency (MHz) | Gain(dBi) | Efficiency(%) | Frequency (MHz) | Gain(dBi) | Efficiency(%) |
|-----------------|-----------|---------------|-----------------|-----------|---------------|
| 1900            | 1.91      | 51.59         | 5150            | 2.09      | 67.84         |
| 1950            | 1.19      | 52.12         | 5200            | 2.06      | 66.55         |
| 2000            | 1.84      | 56.05         | 5250            | 2.07      | 60.26         |
| 2050            | 1.10      | 59.26         | 5300            | 2.79      | 66.00         |
| 2100            | 1.22      | 58.78         | 5350            | 2.27      | 60.91         |
| 2150            | 1.75      | 57.60         | 5400            | 2.96      | 66.36         |

|      |      |       |      |      |       |
|------|------|-------|------|------|-------|
| 2200 | 1.17 | 51.27 | 5450 | 2.22 | 69.41 |
| 2250 | 0.37 | 56.65 | 5500 | 2.61 | 62.59 |
| 2300 | 0.22 | 54.74 | 5550 | 2.72 | 64.16 |
| 2350 | 0.22 | 50.79 | 5600 | 2.10 | 57.57 |
| 2400 | 0.39 | 50.20 | 5650 | 2.40 | 58.13 |
| 2450 | 1.15 | 51.48 | 5700 | 2.29 | 54.80 |
| 2500 | 1.07 | 59.28 | 5750 | 2.16 | 58.03 |
| 2550 | 1.02 | 52.47 | 5800 | 2.43 | 58.22 |
| 2600 | 1.01 | 53.60 | 5850 | 2.50 | 63.19 |
| 2650 | 1.24 | 59.50 | 5900 | 2.91 | 58.81 |
| 2700 | 1.71 | 59.95 | 5950 | 2.65 | 59.42 |
|      |      |       |      |      |       |
| 3300 | 4.12 | 50.74 |      |      |       |
| 3350 | 4.23 | 51.89 |      |      |       |
| 3400 | 3.95 | 51.14 |      |      |       |
| 3450 | 4.24 | 52.07 |      |      |       |
| 3500 | 4.69 | 52.77 |      |      |       |
| 3550 | 4.53 | 53.42 |      |      |       |
| 3600 | 4.58 | 52.54 |      |      |       |
| 3650 | 4.39 | 52.21 |      |      |       |
| 3700 | 4.58 | 54.67 |      |      |       |
| 3750 | 4.72 | 55.71 |      |      |       |
| 3800 | 4.66 | 56.54 |      |      |       |
| 3850 | 4.62 | 56.29 |      |      |       |
| 3900 | 4.53 | 55.27 |      |      |       |
| 3950 | 4.41 | 53.98 |      |      |       |
| 4000 | 4.28 | 52.29 |      |      |       |
| 4050 | 4.33 | 52.51 |      |      |       |
| 4100 | 4.38 | 53.09 |      |      |       |
| 4150 | 4.23 | 53.91 |      |      |       |
| 4200 | 4.33 | 53.74 |      |      |       |

Antenna 3

1710~2690MHz

3300~4200MHz

5150~5925MHz Efficiency

| Frequency (MHz) | Gain(dBi) | Efficiency(%) | Frequency (MHz) | Gain(dBi) | Efficiency(%) |
|-----------------|-----------|---------------|-----------------|-----------|---------------|
| 1700            | 1.87      | 58.16         | 5150            | 2.95      | 68.22         |
| 1750            | 1.77      | 51.56         | 5200            | 2.86      | 67.74         |

|      |      |       |      |      |       |
|------|------|-------|------|------|-------|
| 1800 | 1.20 | 48.26 | 5250 | 2.00 | 62.35 |
| 1850 | 1.57 | 56.24 | 5300 | 2.12 | 59.72 |
| 1900 | 1.26 | 51.47 | 5350 | 2.37 | 65.01 |
| 1950 | 1.52 | 52.18 | 5400 | 2.88 | 61.71 |
| 2000 | 1.67 | 54.92 | 5450 | 2.23 | 66.52 |
| 2050 | 1.22 | 59.45 | 5500 | 2.71 | 60.36 |
| 2100 | 1.84 | 50.40 | 5550 | 2.11 | 66.08 |
| 2150 | 1.56 | 52.63 | 5600 | 2.89 | 58.75 |
| 2200 | 1.37 | 55.17 | 5650 | 2.05 | 61.69 |
| 2250 | 0.74 | 53.45 | 5700 | 2.27 | 57.05 |
| 2300 | 0.22 | 54.41 | 5750 | 2.33 | 59.06 |
| 2350 | 0.17 | 53.75 | 5800 | 2.54 | 56.74 |
| 2400 | 0.22 | 52.23 | 5850 | 2.51 | 66.26 |
| 2450 | 1.08 | 59.57 | 5900 | 2.50 | 61.55 |
| 2500 | 1.05 | 55.11 | 5950 | 2.65 | 61.48 |
| 2550 | 1.07 | 51.14 |      |      |       |
| 2600 | 1.05 | 54.75 |      |      |       |
| 2650 | 1.92 | 50.12 |      |      |       |
| 2700 | 1.23 | 50.10 |      |      |       |
|      |      |       |      |      |       |
| 3300 | 4.26 | 52.32 |      |      |       |
| 3350 | 4.30 | 52.26 |      |      |       |
| 3400 | 4.25 | 52.51 |      |      |       |
| 3450 | 4.27 | 53.33 |      |      |       |
| 3500 | 4.33 | 54.59 |      |      |       |
| 3550 | 4.32 | 54.54 |      |      |       |
| 3600 | 4.39 | 55.28 |      |      |       |
| 3650 | 4.49 | 57.67 |      |      |       |
| 3700 | 4.64 | 58.42 |      |      |       |
| 3750 | 4.57 | 57.01 |      |      |       |
| 3800 | 4.46 | 55.45 |      |      |       |
| 3850 | 4.35 | 53.50 |      |      |       |
| 3900 | 4.26 | 52.50 |      |      |       |
| 3950 | 4.06 | 52.62 |      |      |       |
| 4000 | 4.11 | 52.42 |      |      |       |
| 4050 | 4.26 | 52.72 |      |      |       |
| 4100 | 4.32 | 52.42 |      |      |       |
| 4150 | 4.31 | 53.13 |      |      |       |
| 4200 | 4.29 | 53.46 |      |      |       |

Antenna 5 3300~4200MHz Efficiency

| Frequency (MHz) | Gain(dBi) | Efficiency(%) | Frequency (MHz) | Gain(dBi) | Efficiency(%) |
|-----------------|-----------|---------------|-----------------|-----------|---------------|
| 3300            | 2.73      | 57.52         |                 |           |               |
| 3350            | 3.35      | 51.45         |                 |           |               |
| 3400            | 4.23      | 57.40         |                 |           |               |
| 3450            | 4.14      | 56.72         |                 |           |               |
| 3500            | 3.87      | 57.03         |                 |           |               |
| 3550            | 3.69      | 57.00         |                 |           |               |
| 3600            | 4.21      | 56.74         |                 |           |               |
| 3650            | 4.54      | 57.59         |                 |           |               |
| 3700            | 4.61      | 50.17         |                 |           |               |
| 3750            | 4.20      | 54.41         |                 |           |               |
| 3800            | 4.11      | 51.62         |                 |           |               |
| 3850            | 4.52      | 50.57         |                 |           |               |
| 3900            | 3.23      | 51.56         |                 |           |               |
| 3950            | 4.03      | 53.79         |                 |           |               |
| 4000            | 4.14      | 54.23         |                 |           |               |
| 4050            | 4.01      | 51.81         |                 |           |               |
| 4100            | 4.29      | 52.99         |                 |           |               |
| 4150            | 4.75      | 55.75         |                 |           |               |
| 4200            | 4.91      | 55.99         |                 |           |               |

WIFI 0 2400~2500MHz 5150~5850MHz Efficiency

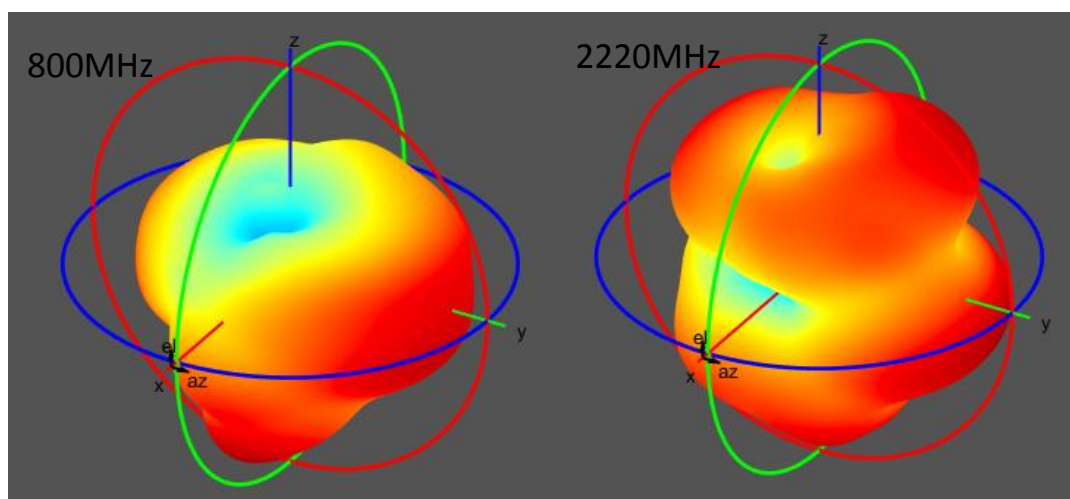
| Frequency (MHz) | Gain(dBi) | Efficiency(%) | Frequency (MHz) | Gain(dBi) | Efficiency(%) |
|-----------------|-----------|---------------|-----------------|-----------|---------------|
| 2400.00         | 4.48      | 66.79         | 5000.00         | 4.62      | 51.59         |
| 2410.00         | 4.53      | 66.44         | 5100.00         | 5.75      | 57.84         |
| 2420.00         | 4.56      | 68.26         | 5200.00         | 6.05      | 56.73         |
| 2430.00         | 4.36      | 68.49         | 5300.00         | 5.87      | 50.15         |
| 2440.00         | 4.14      | 66.92         | 5400.00         | 6.49      | 53.18         |
| 2450.00         | 4.03      | 67.11         | 5500.00         | 5.97      | 52.22         |
| 2460.00         | 3.93      | 69.02         | 5600.00         | 5.29      | 52.50         |
| 2470.00         | 3.74      | 67.52         | 5700.00         | 4.72      | 54.21         |

|         |      |       |         |      |       |
|---------|------|-------|---------|------|-------|
| 2480.00 | 3.72 | 67.42 | 5800.00 | 4.85 | 57.13 |
| 2490.00 | 3.49 | 66.61 | 5900.00 | 4.35 | 57.24 |
| 2500.00 | 3.31 | 66.43 | 6000.00 | 3.01 | 53.01 |

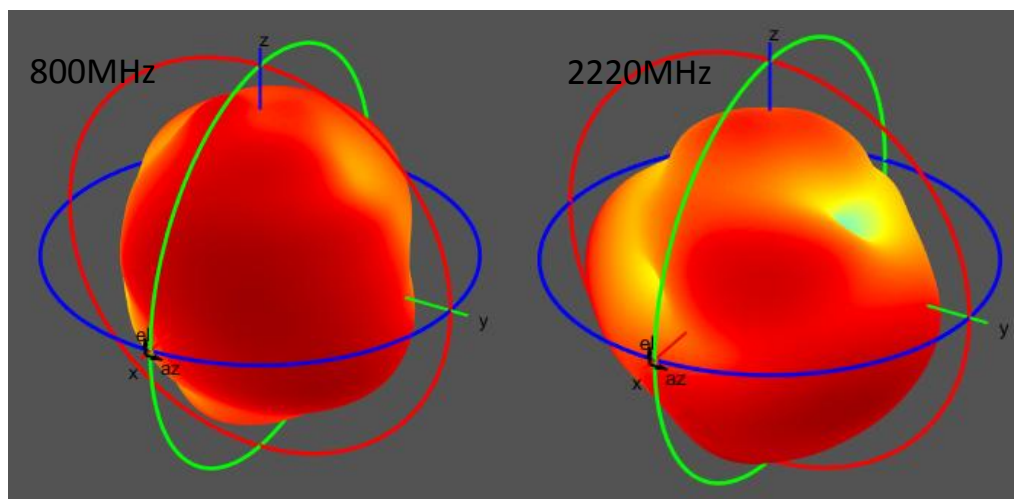
WIFI 1 2400~2500MHz 5150~5850MHz Efficiency

| Frequency (MHz) | Gain(dBi) | Efficiency(%) | Frequency (MHz) | Gain(dBi) | Efficiency(%) |
|-----------------|-----------|---------------|-----------------|-----------|---------------|
| 2400.00         | 2.69      | 65.67         | 5000.00         | 5.14      | 53.50         |
| 2410.00         | 2.67      | 65.73         | 5100.00         | 5.28      | 54.53         |
| 2420.00         | 3.08      | 67.40         | 5200.00         | 4.43      | 52.32         |
| 2430.00         | 3.42      | 67.67         | 5300.00         | 3.78      | 50.24         |
| 2440.00         | 3.13      | 66.22         | 5400.00         | 4.64      | 51.91         |
| 2450.00         | 3.12      | 66.27         | 5500.00         | 5.00      | 50.95         |
| 2460.00         | 3.49      | 68.05         | 5600.00         | 4.36      | 50.96         |
| 2470.00         | 3.64      | 67.70         | 5700.00         | 3.63      | 53.03         |
| 2480.00         | 3.64      | 68.02         | 5800.00         | 3.53      | 54.52         |
| 2490.00         | 3.83      | 68.45         | 5900.00         | 3.61      | 54.10         |
| 2500.00         | 3.93      | 68.03         | 6000.00         | 3.03      | 51.70         |

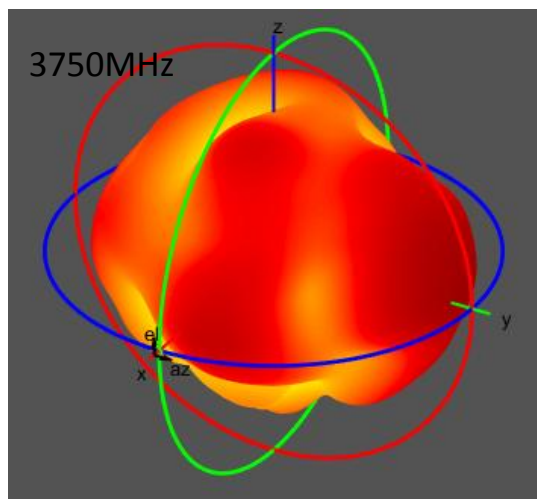
Antenna 0      617~960MHz 1710~2690MHz      3D



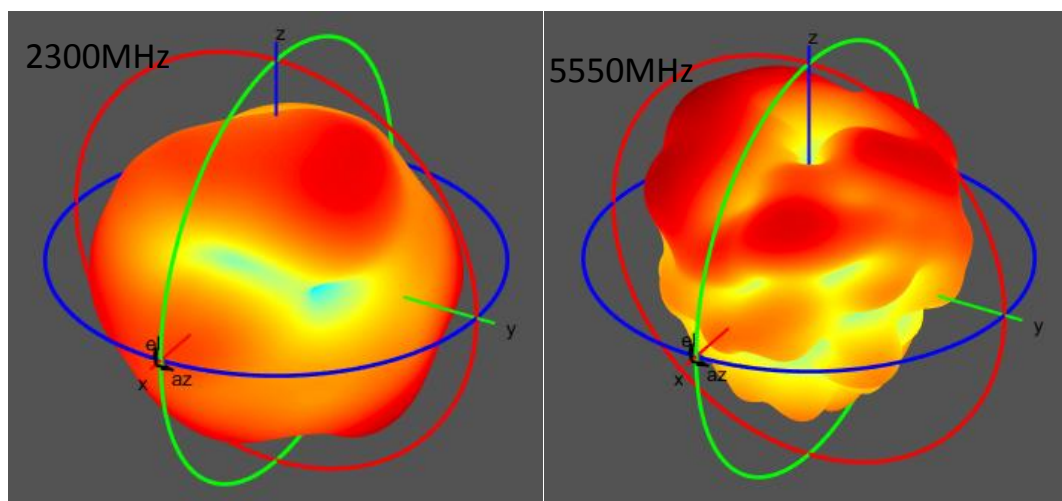
Antenna2      617~960MHz 1710~2690MHz      3D



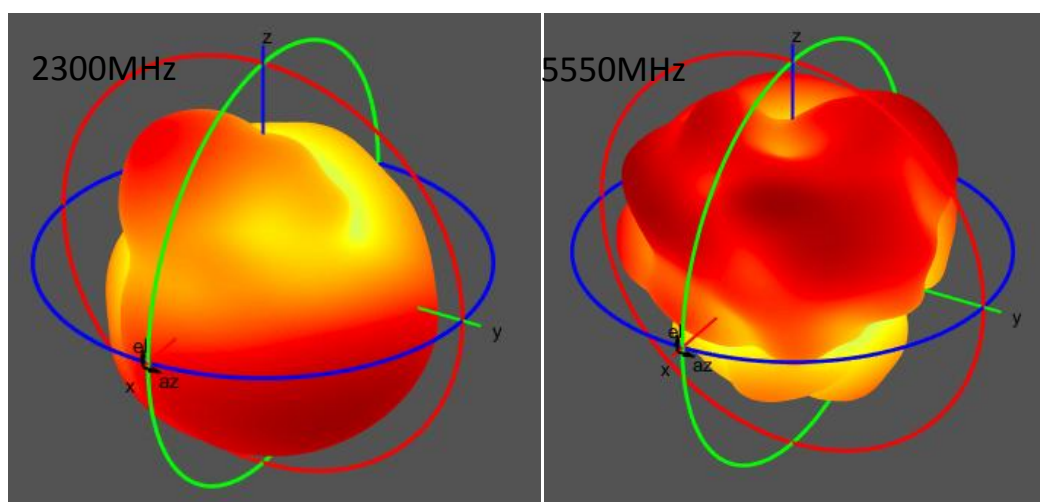
Antenna 4      3300~4200MHz      3D



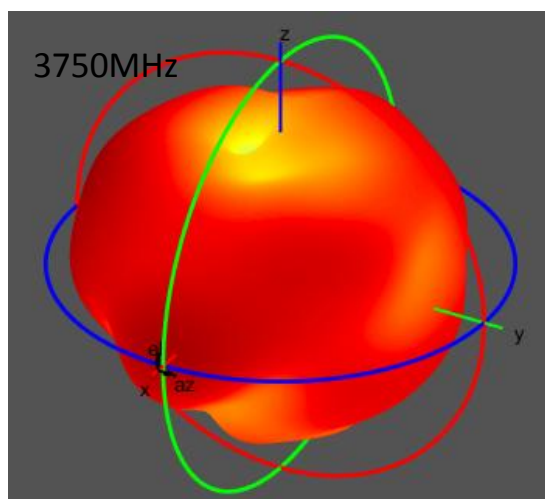
Antenna 1 1930~2690MHz 3300~4200MHz 5150~5925MHz 3D



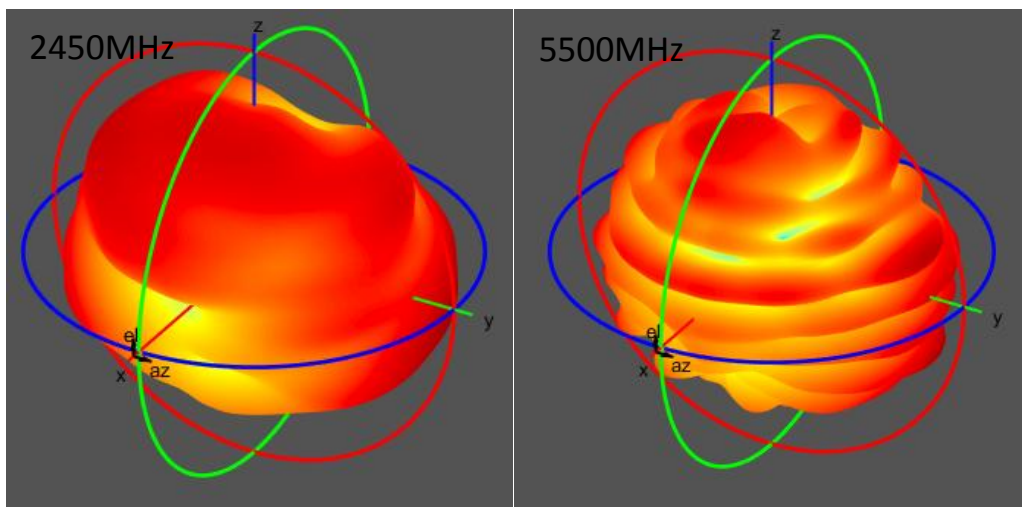
Antenna 3 2400~2500MHz 3300~4200MHz 5150~5850MHz 3D



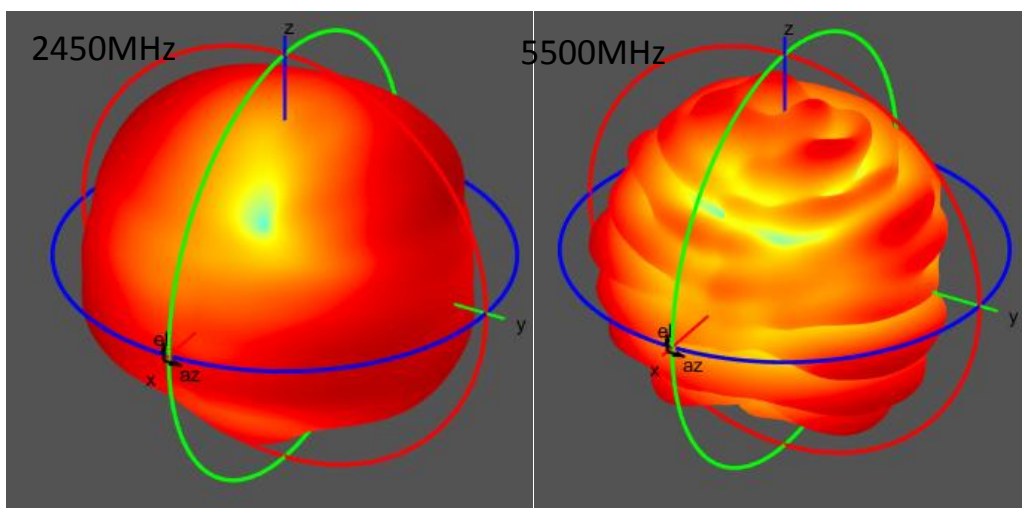
Antenna 5 3300~4200MHz 3D



WIFI 0 2400~2500MHz 5150~5850MHz 3D



WIFI 1 2400~2500MHz 5150~5850MHz 3D



## 2.2 Active Test Result(TRP TIS)

| LTE                           | Channel | TRP(dBm) | TIS(dBm) | LTE                            | Channel | TRP(dBm) | TIS(dBm) |
|-------------------------------|---------|----------|----------|--------------------------------|---------|----------|----------|
| Band 2(10M)                   | L       | 20.12    | -99.97   | Band 17(10M)                   | L       | 19.44    | -97.06   |
|                               | M       | 20.12    | -99.34   |                                | M       | 19.72    | -97.19   |
|                               | H       | 20.57    | -99.18   |                                | H       | 19.91    | -97.59   |
| Band 66(4)(10M)               | L       | 20.17    | -99.4    | Band 25(10M)                   | L       | 20.07    | -103.47  |
|                               | M       | 20.56    | -99.3    |                                | M       | 20.74    | -103.44  |
|                               | H       | 20.11    | -100.23  |                                | H       | 20.54    | -103.36  |
| Band 5(10M)                   | L       | 20.43    | -99.12   | Band 26(10M)                   | L       | 19.20    | -100.02  |
|                               | M       | 20.19    | -99.86   |                                | M       | 19.79    | -100.53  |
|                               | H       | 20.36    | -99.38   |                                | H       | 19.33    | -100.07  |
| Band 7(10M)<br>(TIS WIFI CH1) | L       | 19.31    | -99.73   | Band 30(10M)                   | M       | 18.47    | -97.57   |
|                               | M       | 19.89    | -98.66   | Band 41(20M)<br>(TIS WIFI CH1) | L       | 22.55    | -96.33   |
|                               | H       | 19.44    | -98.54   |                                | M       | 22.62    | -96.46   |
| Band 12(10M)                  | L       | 18.12    | -98.07   | Band 48(20M)                   | H       | 22.60    | -96.43   |
|                               | M       | 18.74    | -98.35   |                                | L       | 19.46    | -99.85   |
|                               | H       | 18.86    | -97.92   |                                | M       | 19.58    | -99.1    |
| Band 13(10M)                  | L       | 18.11    | -97.65   | Band 71(10M)                   | H       | 20.02    | -99.86   |
|                               | M       | 18.07    | -97.49   |                                | L       | 17.54    | -95.89   |
|                               | H       | 18.15    | -97.12   |                                | M       | 17.63    | -95.26   |
| Band 14(10M)                  | L       | 18.11    | -95.60   |                                | H       | 17.61    | -96.27   |
|                               | M       | 18.35    | -95.31   |                                |         |          |          |
|                               | H       | 18.76    | -95.53   |                                |         |          |          |

| 5G SA                       | Channels | SCS(KHz) | TRP(dBm) | TIS(dBm) |
|-----------------------------|----------|----------|----------|----------|
| N2 (10MHz)                  | L        | 15       | 20.04    | -97.99   |
|                             | M        | 15       | 20.18    | -97.41   |
|                             | H        | 15       | 20.05    | -97.14   |
| N5 (10MHz)                  | L        | 15       | 20.59    | -97.56   |
|                             | M        | 15       | 20.48    | -97.34   |
|                             | H        | 15       | 20.28    | -98.01   |
| n7 (10MHz) (TIS WIFI CH1)   | L        | 15       | 20.31    | -96.03   |
|                             | M        | 15       | 20.38    | -96.61   |
|                             | H        | 15       | 20.88    | -96.98   |
| N12 (15MHz)                 | L        | 15       | 19.01    | -93.65   |
|                             | M        | 15       | 19.61    | -93.23   |
|                             | H        | 15       | 18.96    | -93.04   |
| N14 (10MHz)                 | L        | 15       | 18.38    | -93.61   |
|                             | M        | 15       | 19.41    | -93.77   |
|                             | H        | 15       | 19.88    | -93.59   |
| N25 (20MHz)                 | L        | 15       | 20.34    | -98.82   |
|                             | M        | 15       | 20.84    | -98.79   |
|                             | H        | 15       | 20.16    | -99.45   |
| n30 (10MHz)                 | L        | 15       | 18.31    | -97.45   |
| n41 (100MHz) (TIS WIFI CH1) | L        | 30       | 22.78    | -87.18   |
|                             | M        | 30       | 22.50    | -87.57   |
|                             | H        | 30       | 22.56    | -87.93   |
| n48 (100MHz)                | L        | 30       | 19.4     | -91.06   |
|                             | M        | 30       | 19.54    | -91.33   |

|                     |          |           |              |               |
|---------------------|----------|-----------|--------------|---------------|
|                     | <b>H</b> | <b>30</b> | <b>19.75</b> | <b>-91.4</b>  |
| <b>N66 (20MHz)</b>  | <b>L</b> | <b>30</b> | <b>20.7</b>  | <b>-97.7</b>  |
|                     | <b>M</b> | <b>30</b> | <b>20.38</b> | <b>-97.88</b> |
|                     | <b>H</b> | <b>30</b> | <b>20.98</b> | <b>-98.87</b> |
| <b>N71 (20MHz)</b>  | <b>L</b> | <b>30</b> | <b>17.04</b> | <b>-91.3</b>  |
|                     | <b>M</b> | <b>30</b> | <b>17.86</b> | <b>-91.16</b> |
|                     | <b>H</b> | <b>30</b> | <b>18.29</b> | <b>-90.86</b> |
| <b>n77 (100MHz)</b> | <b>L</b> | <b>30</b> | <b>22.72</b> | <b>-91.34</b> |
|                     | <b>M</b> | <b>30</b> | <b>22.90</b> | <b>-91.66</b> |
|                     | <b>H</b> | <b>30</b> | <b>23.20</b> | <b>-92.77</b> |
| <b>n78 (100MHz)</b> | <b>L</b> | <b>30</b> | <b>22.78</b> | <b>-91.19</b> |
|                     | <b>M</b> | <b>30</b> | <b>22.86</b> | <b>-91.46</b> |
|                     | <b>H</b> | <b>30</b> | <b>23.02</b> | <b>-91.58</b> |

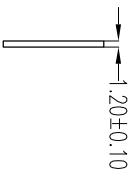
| 2.4G    WIFI/11b     |        |        |        |
|----------------------|--------|--------|--------|
| channel              | 1      | 6      | 11     |
| TRP(dBm)<br>(11Mbps) | 18.09  | 18.22  | 18.13  |
| TIS(dBm)<br>(11Mbps) | -90.36 | -90.12 | -90.77 |
| 5G    WIFI /11a      |        |        |        |
| channel              | 36     |        | 161    |
| TRP(dBm)<br>(6Mbps)  | 21.83  |        | 21.02  |
| TIS(dBm)<br>(54Mbps) | -80.50 |        | -80.71 |

[illegible]





[illegible]



|     |     |              |    |    |    |
|-----|-----|--------------|----|----|----|
| No. | 名称  | 规格           | 颜色 | 数量 | 备注 |
| 3   | 扎带  | 尼龙扎带         | 白色 | 1  |    |
| 2   | 射频线 | ø1.13mm；一代端子 | 红色 | 1  |    |
| 1   | PCB | FR4, 单面板     | 黑色 | 1  |    |

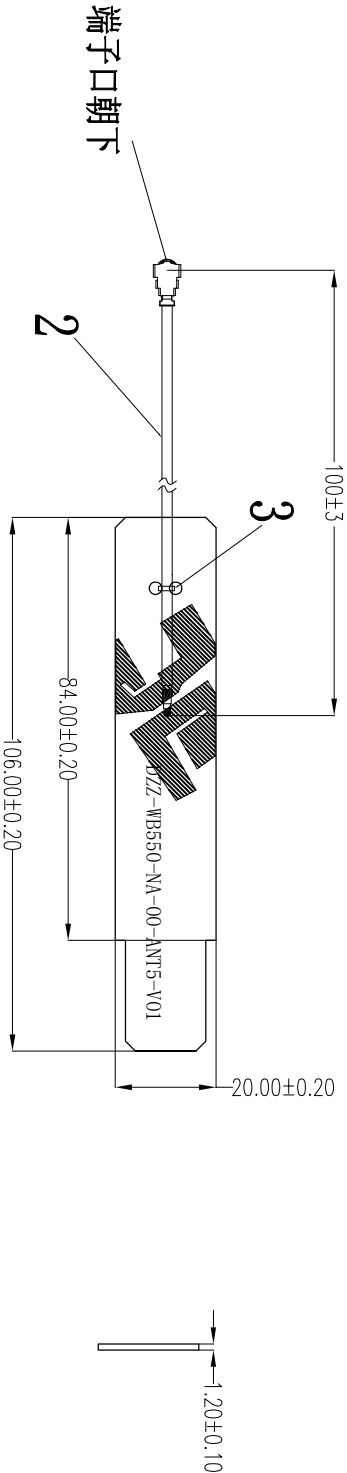
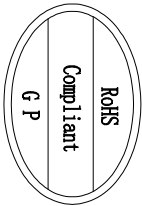
| 深圳得自在科技有限公司                                                                                     |       |       |         |           |             |              |      |             |     |    |
|-------------------------------------------------------------------------------------------------|-------|-------|---------|-----------|-------------|--------------|------|-------------|-----|----|
| SHEN ZHEN Be Comfortable CO., LTD                                                               |       |       |         |           |             |              |      |             |     |    |
|  Third angle |       |       | Project |           | WB550-NA-00 |              | Date |             |     |    |
| 0~10                                                                                            | ±0.05 | ○     | 0.02    | Part Name |             | ANT4         |      | Designed by |     |    |
| 10~18                                                                                           | ±0.10 | ◎     | ∅ 0.03  | Part No.  |             | NI2-7242-R0A |      | MD          |     |    |
| 18~30                                                                                           | ±0.12 | ┘     | 0.02    | Material  |             | N/A          |      | Checked by  |     |    |
| 30~40                                                                                           | ±0.15 | ∇     | 0.04    |           |             |              |      | RF          |     |    |
| 40~                                                                                             | ±0.20 | Angle | ±0.5°   | DWG No.   |             |              |      | Approved by |     |    |
| location                                                                                        | N/A   |       |         |           |             |              |      | Unit        |     | mm |
|                                                                                                 |       |       |         |           |             |              |      | 1:1         | Rev | A  |

| Rev | Description | Date | Remark |
|-----|-------------|------|--------|
| A   | New drawing |      |        |
|     |             |      |        |

备注:

1. 标注“\*”为重点尺寸, 未标公差尺寸按照 $\pm 0.15$ 检测
2. 未标注尺寸请依图纸。

3. 符合ROHS

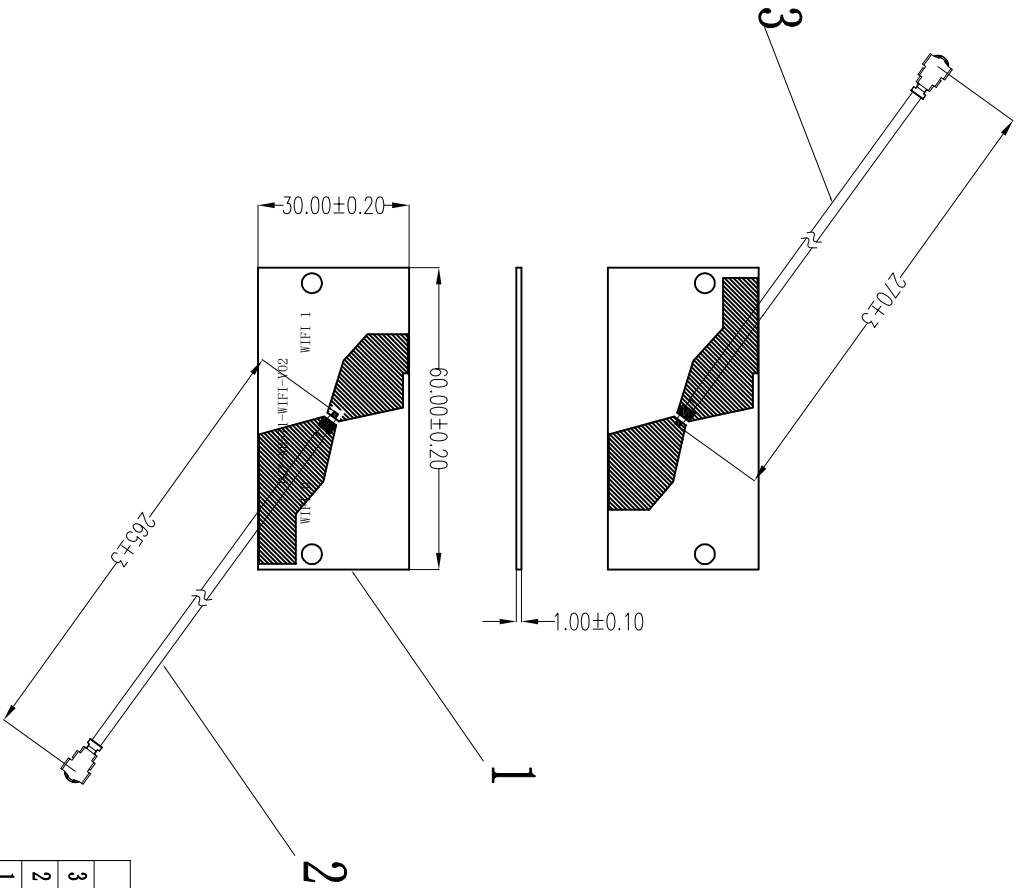
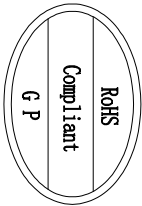


|     |     |              |    |    |    |
|-----|-----|--------------|----|----|----|
| 3   | 扎带  | 尼龙扎带         | 白色 | 1  |    |
| 2   | 射频线 | φ1.13mm；一代端子 | 黄色 | 1  |    |
| 1   | PCB | FR4, 单面板     | 黑色 | 1  |    |
| No. | 名称  | 规格           | 颜色 | 数量 | 备注 |

- 备注:
- 标注“\*”为重点尺寸, 未标公差尺寸按照±0.15检测
  - 未标注尺寸请依图纸。
  - 符合ROHS

|   |             |             |      |        |          |       |          |              |            |             |      |       |     |
|---|-------------|-------------|------|--------|----------|-------|----------|--------------|------------|-------------|------|-------|-----|
| A | New drawing | Description | Date | Remark | Location | N/A   | Part No. | N12-7243-R0A | MD         | 田进          | Rev  | A     |     |
|   |             |             |      |        | 10~18    | ±0.10 | ◎        | ∅ 0.03       | Checked by | RF          | 边博   | Scale | 1:1 |
|   |             |             |      |        | 18~30    | ±0.12 | ┘        | 0.02         | N/A        | Approved by | Unit | mm    |     |
|   |             |             |      |        | 30~40    | ±0.15 | ▽        | 0.04         |            |             |      |       |     |
|   |             |             |      |        | 40~      | ±0.20 | Angle    | ±0.5°        | DWG No.    |             |      |       |     |

|                                   |       |           |              |             |            |     |     |   |  |
|-----------------------------------|-------|-----------|--------------|-------------|------------|-----|-----|---|--|
| 深圳得自在科技有限公司                       |       |           |              |             |            |     |     |   |  |
| SHEN ZHEN Be Comfortable CO., LTD |       |           |              |             |            |     |     |   |  |
| Third Angle                       |       | Project   | WB550-NA-00  | Date        | 2022.10.25 |     |     |   |  |
| 0~10                              | ±0.05 | Part Name | ANT5         | Designed by |            |     |     |   |  |
| 10~18                             | ±0.10 | Part No.  | NI2-7243-R0A | Checked by  | 田进         |     |     |   |  |
| 18~30                             | ±0.12 | Material  | N/A          | RF          | 边博         |     |     |   |  |
| 30~40                             | ±0.15 |           |              |             |            |     |     |   |  |
| 40~                               | ±0.20 | DWG No.   |              | Approved by |            |     |     |   |  |
|                                   | Angle |           |              | Unit: mm    | Scale      | 1:1 | Rev | A |  |
|                                   |       |           |              |             |            |     |     |   |  |



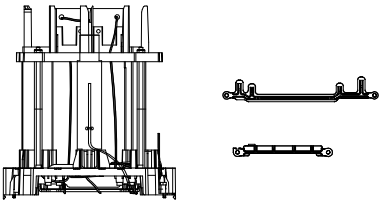
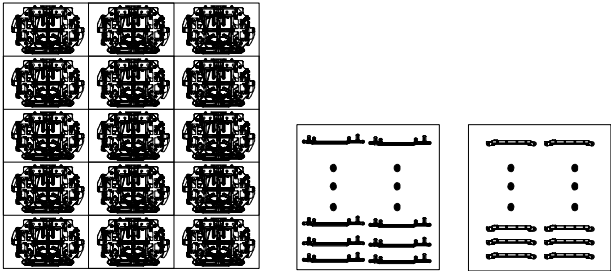
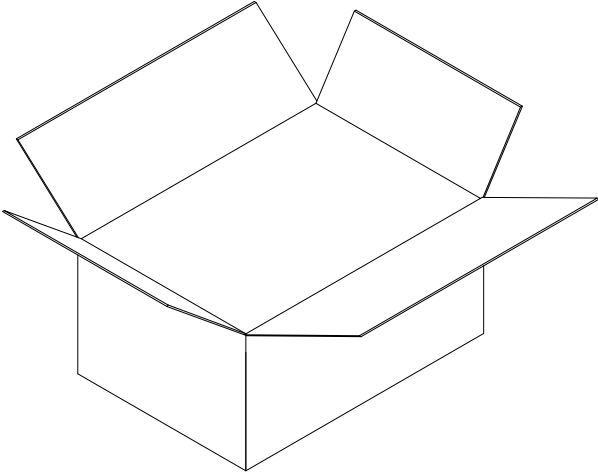
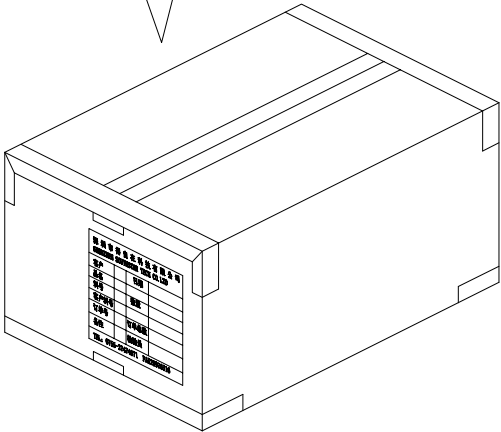
|     |     |                |    |    |    |
|-----|-----|----------------|----|----|----|
| 3   | 射频线 | ø1.13mm ; 一代端子 | 灰色 | 1  |    |
| 2   | 射频线 | ø1.13mm ; 一代端子 | 黑色 | 1  |    |
| 1   | PCB | FR4, 单面板       | 黑色 | 1  |    |
| No. | 名称  | 规格             | 颜色 | 数量 | 备注 |

- 备注:
- 标注“\*”为重点尺寸, 未标公差尺寸按照±0.15检测
  - 未标注尺寸请依图纸。
  - 符合ROHS

|   |             |             |      |        |          |  |  |         |  |  |      |    |       |     |     |   |
|---|-------------|-------------|------|--------|----------|--|--|---------|--|--|------|----|-------|-----|-----|---|
| A | New drawing | Description | Date | Remark | Location |  |  | DWG No. |  |  | Unit | mm | Scale | 1:1 | Rev | A |
|   |             |             |      |        |          |  |  |         |  |  |      |    |       |     |     |   |
|   |             |             |      |        |          |  |  |         |  |  |      |    |       |     |     |   |
|   |             |             |      |        |          |  |  |         |  |  |      |    |       |     |     |   |

|                                                                                     |  |             |  |           |  |              |  |             |  |              |  |
|-------------------------------------------------------------------------------------|--|-------------|--|-----------|--|--------------|--|-------------|--|--------------|--|
| 深 圳 得 自 在 科 技 有 限 公 司                                                               |  |             |  |           |  |              |  |             |  |              |  |
| SHEN ZHEN Be Comfortable CO., LTD                                                   |  |             |  |           |  |              |  |             |  |              |  |
|  |  | Third Angle |  | Project   |  | WB550-NA-00  |  | Date        |  | 2022. 10. 25 |  |
| 0~10 ±0.05                                                                          |  | ○ 0.02      |  | Part Name |  | WIFI         |  | Designed by |  |              |  |
| 10~18 ±0.10                                                                         |  | ◎ ∅ 0.03    |  | Part No.  |  | NI2-7244-R0A |  | Checked by  |  | MD 田进        |  |
| 18~30 ±0.12                                                                         |  | ⊥ 0.02      |  | Material  |  | N/A          |  |             |  | RF 边博        |  |
| 30~40 ±0.15                                                                         |  | ∠ 0.04      |  |           |  |              |  |             |  |              |  |
| 40~ ±0.20                                                                           |  | Angle ±0.5° |  | DWG No.   |  |              |  | Approved by |  |              |  |
| Location                                                                            |  | N/A         |  |           |  |              |  | Unit        |  | mm           |  |
|                                                                                     |  |             |  |           |  |              |  | Scale       |  | 1:1 Rev A    |  |

| 53 97                                 |  | 1                                                                                      | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------------------------------|--|----------------------------------------------------------------------------------------|---|---|---|---|---|---|---|
| <div>RoHS<br/>Compliant<br/>G P</div> |  |                                                                                        |   |   |   |   |   |   |   |
|                                       |  |                                                                                        |   |   |   |   |   |   |   |
|                                       |  |                                                                                        |   |   |   |   |   |   |   |
| A                                     |  |                                                                                        |   |   |   |   |   |   |   |
| B                                     |  |                                                                                        |   |   |   |   |   |   |   |
| C                                     |  |                                                                                        |   |   |   |   |   |   |   |
| D                                     |  | <p>备注:</p> <p>1. 标注“*”为重点尺寸, 未标公差尺寸按照±0.15检测</p> <p>2. 未标注尺寸请依图纸.</p> <p>3. 符合ROHS</p> |   |   |   |   |   |   |   |
| A                                     |  | <p>Rev 1</p> <p>Description New drawing</p> <p>Date</p> <p>Remark</p>                  |   |   |   |   |   |   |   |
| D                                     |  | <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p>                |   |   |   |   |   |   |   |
| A                                     |  | <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p>                |   |   |   |   |   |   |   |
| B                                     |  | <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p>                |   |   |   |   |   |   |   |
| C                                     |  | <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p>                |   |   |   |   |   |   |   |
| D                                     |  | <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p>                |   |   |   |   |   |   |   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|
| 成品名称：PW550-NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | 版本：A |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |      |
| <div><div><div>一：成品天线</div><div></div></div><div><div>二：用珍珠棉包装，一层装15pcs，一箱装30pcs；<br/>两个压紧支架分别用PE袋包装，一袋装100；</div><div></div></div><div><div><div>三：30pcs装一箱，以实际包装为准；</div><div></div></div><div><div><div>四：封箱, 外箱贴我司生产标签和<br/>ROHS标签.</div><div></div></div></div></div></div> |  |      |