

规格承认书  
SPECIFICATION FOR APPROVAL

|                                |            |
|--------------------------------|------------|
| 客 户<br>Customer                | 文巡         |
| 项目名称<br>Project Name           | VPET-小壳    |
| 客 户 料 号<br>Customer NO.        |            |
| 规 格<br>specification           | LDS        |
| 供 方 料 号<br>Supplier NO.        |            |
| 规 格 书 编 号<br>Specification NO. |            |
| 编写人<br>Write by                | 周洪亮        |
| 版本<br>REV.                     | Ver.1      |
| 日 期<br>Date                    | 2024/09/03 |
| 备 注<br>Note                    |            |

| 客户确认 CUSTOMER APPROVED BY |               |                |
|---------------------------|---------------|----------------|
| 批准 Approved by            | 审核 Checked by | 制表 Prepared by |
|                           |               |                |
| 供方确认 SUPPLIER APPROVED BY |               |                |
| 批准 Approved by            | 审核 Checked by | 制表 Prepared by |
|                           |               |                |

| 版本变更记录 |      |    |     |     |
|--------|------|----|-----|-----|
| 变更日期   | 变更内容 | 版本 | 变更人 | 批准人 |
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## 1. 承认书项目表 (Index)

| 序号 | 内容        | 页码 |
|----|-----------|----|
| —  | 承认书封面     | 1  |
| —  | 版本变更记录    | 2  |
| 1  | 承认书项目表    | 3  |
| 2  | 试验设备和条件   | 4  |
| 3  | 样机结构说明件   | 5  |
| 4  | 天线成品图     | 6  |
| 5  | S11       | 7  |
| 6  | 增益/效率/3D图 | 8  |
|    |           |    |
|    |           |    |

## 2. 试验设备和条件(Test Equipment & Conditions)

2.1. Network Analyzers : KEYSIGHT P5002A

2.2. Communications Test Set: R&S CMW 500

2.3. 3D Chamber Test System: 64探头测试系统

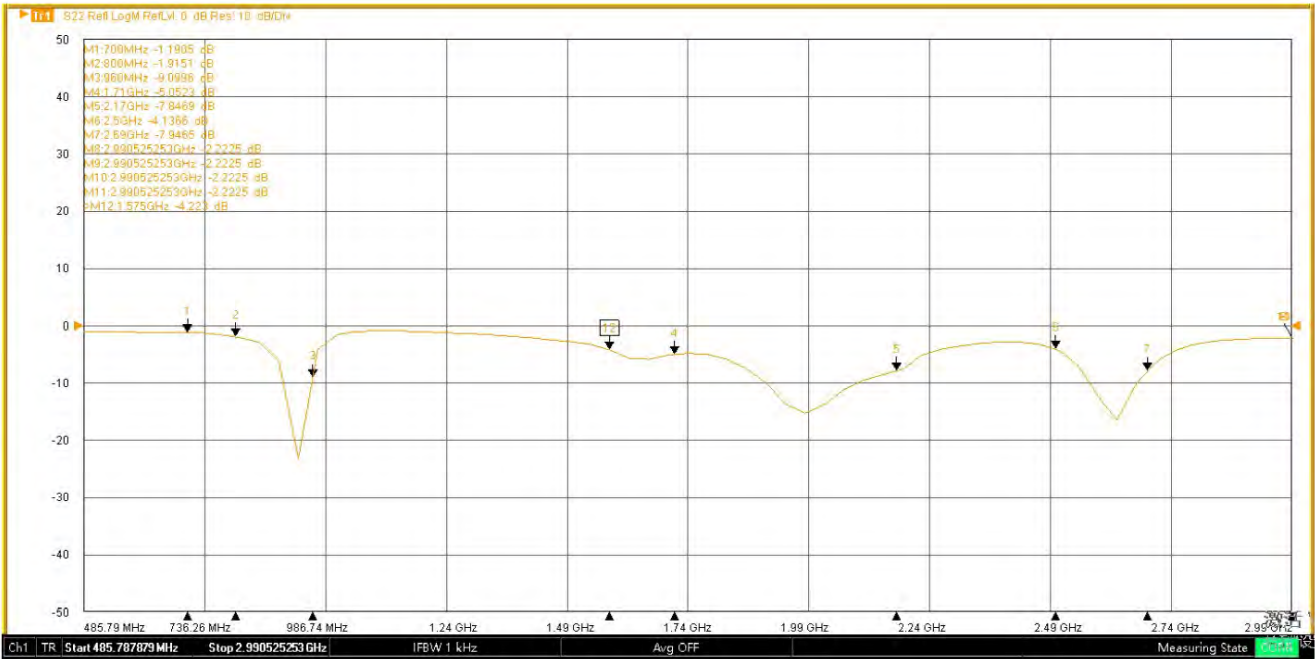


### 3. 样机结构说明件(Mechanical instruction)

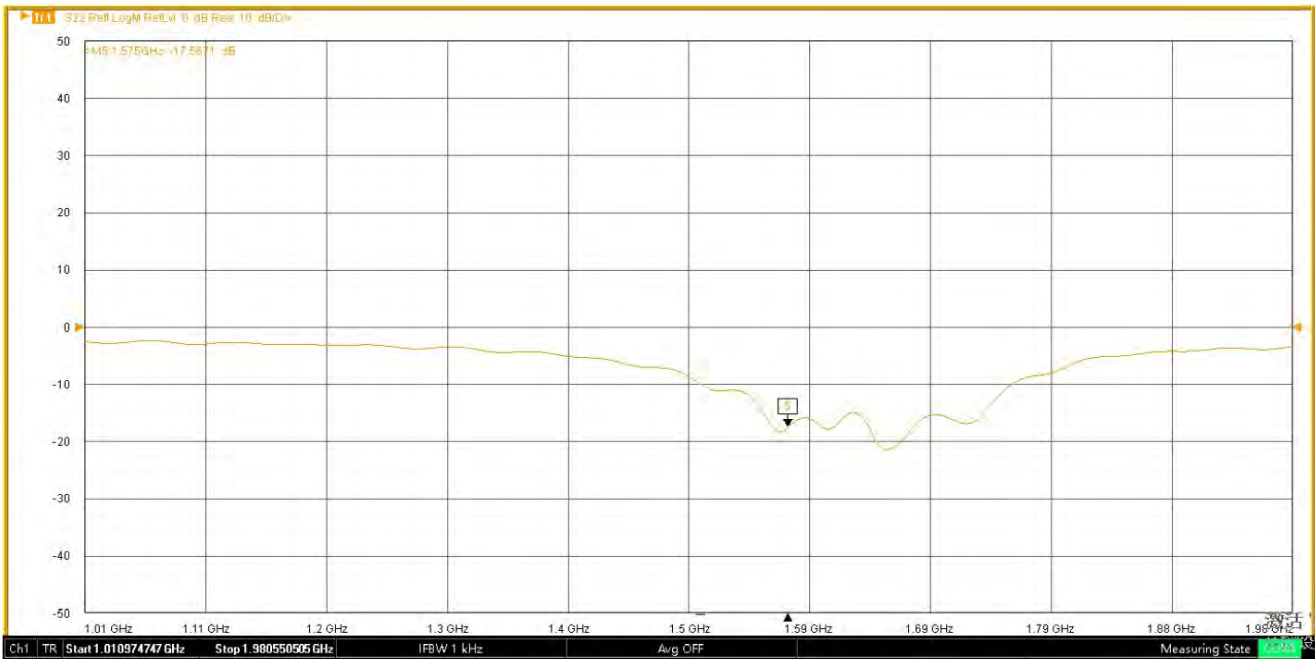


4. S11

4G天线



GPS天线

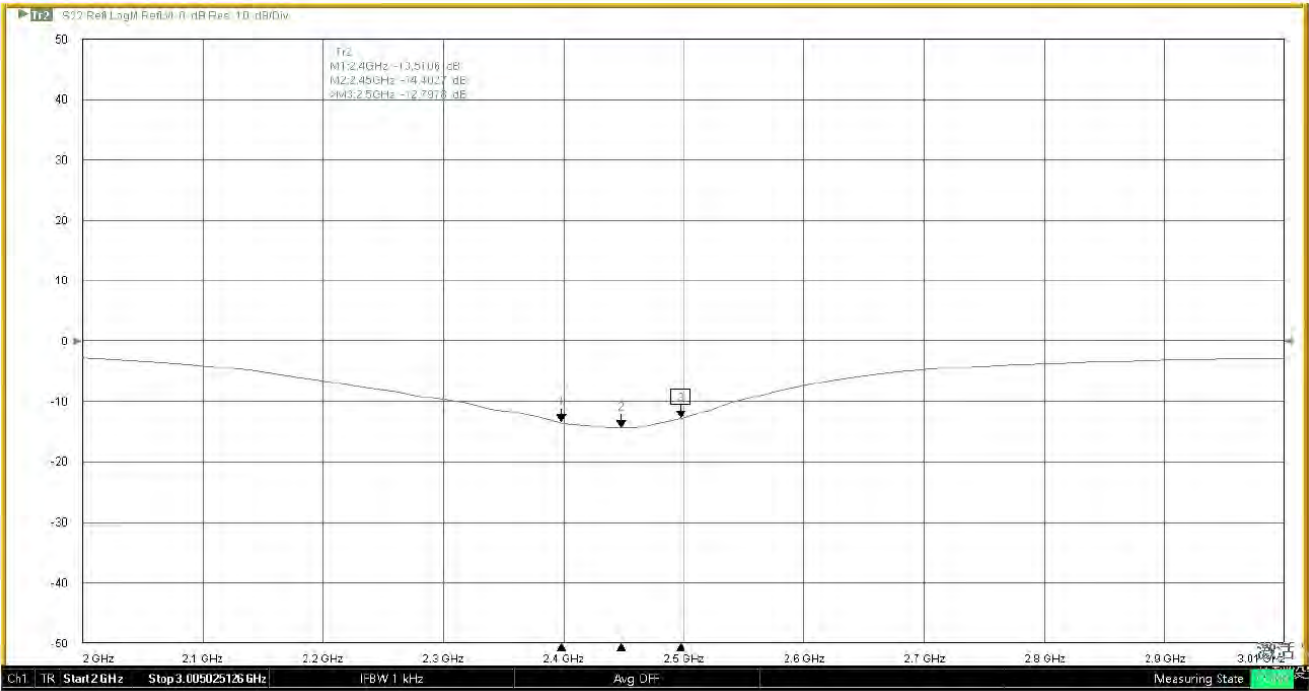


4. S11

WIFI天线



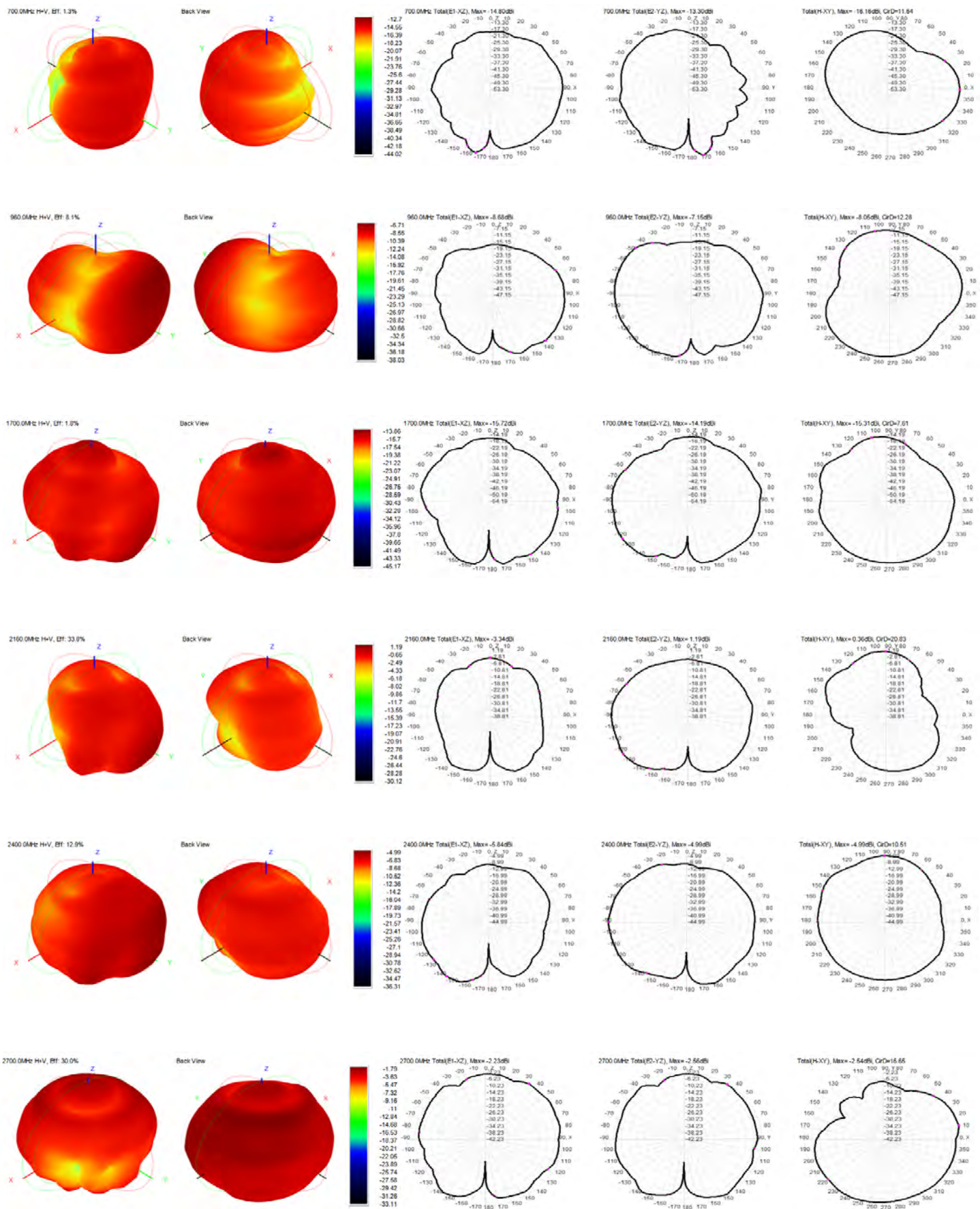
BT天线



5. 无源效率- 4 G

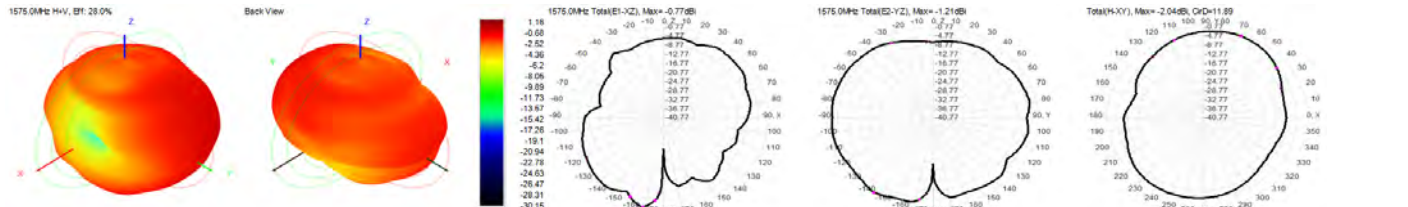
| Frequency<br>(MHz) | Gain (dBi) | Efficiency<br>(%) | Frequency<br>(MHz) | Gain (dBi) | Efficiency<br>(%) |
|--------------------|------------|-------------------|--------------------|------------|-------------------|
| 700.0              | -12.70     | 1.28              | 1900.0             | -1.05      | 19.37             |
| 710.0              | -13.01     | 1.40              | 1920.0             | -0.65      | 20.43             |
| 720.0              | -11.32     | 1.59              | 1940.0             | -0.46      | 20.34             |
| 730.0              | -11.35     | 1.78              | 1960.0             | -0.05      | 23.79             |
| 740.0              | -11.20     | 2.01              | 1980.0             | 0.23       | 26.63             |
| 750.0              | -11.02     | 2.18              | 2000.0             | 0.73       | 28.57             |
| 760.0              | -11.19     | 2.20              | 2020.0             | 0.50       | 28.62             |
| 770.0              | -10.36     | 2.25              | 2040.0             | 0.87       | 29.84             |
| 780.0              | -11.51     | 2.37              | 2060.0             | 1.17       | 32.62             |
| 790.0              | -11.02     | 2.52              | 2080.0             | 0.57       | 31.39             |
| 800.0              | -8.57      | 2.78              | 2100.0             | 0.46       | 31.72             |
| 810.0              | -7.81      | 3.10              | 2120.0             | 0.96       | 32.96             |
| 820.0              | -9.67      | 3.35              | 2140.0             | 0.82       | 33.13             |
| 830.0              | -9.97      | 3.48              | 2160.0             | 1.19       | 33.83             |
| 840.0              | -9.54      | 3.84              | 2180.0             | 1.74       | 31.79             |
| 850.0              | -8.36      | 4.19              | 2300.0             | -2.80      | 14.60             |
| 860.0              | -7.56      | 4.59              | 2320.0             | -3.36      | 14.28             |
| 870.0              | -8.20      | 4.94              | 2340.0             | -3.79      | 14.03             |
| 880.0              | -8.00      | 5.19              | 2360.0             | -3.96      | 13.64             |
| 890.0              | -7.68      | 5.62              | 2380.0             | -4.67      | 12.95             |
| 900.0              | -6.90      | 6.39              | 2400.0             | -4.99      | 12.89             |
| 910.0              | -6.09      | 7.65              | 2420.0             | -4.30      | 13.40             |
| 920.0              | -5.42      | 9.41              | 2440.0             | -3.99      | 13.24             |
| 930.0              | -5.37      | 10.48             | 2460.0             | -4.05      | 14.40             |
| 940.0              | -5.38      | 10.56             | 2480.0             | -3.13      | 17.57             |
| 950.0              | -5.92      | 9.56              | 2500.0             | -2.38      | 17.51             |
| 960.0              | -6.71      | 8.05              | 2520.0             | -2.20      | 19.85             |
| 1700.0             | -13.86     | 1.77              | 2540.0             | -1.63      | 24.44             |
| 1720.0             | -10.75     | 2.72              | 2560.0             | -1.46      | 25.89             |
| 1740.0             | -8.97      | 3.77              | 2580.0             | -1.21      | 30.91             |
| 1760.0             | -7.24      | 5.48              | 2600.0             | -1.38      | 35.98             |
| 1780.0             | -6.38      | 7.21              | 2620.0             | -1.12      | 37.41             |
| 1800.0             | -5.52      | 8.91              | 2640.0             | -1.15      | 38.48             |
| 1820.0             | -4.37      | 11.22             | 2660.0             | -1.19      | 37.08             |
| 1840.0             | -3.40      | 13.12             | 2680.0             | -1.74      | 32.54             |
| 1860.0             | -2.47      | 15.41             | 2700.0             | -1.79      | 29.97             |
| 1880.0             | -1.95      | 16.61             |                    |            |                   |

## 5. 无源效率- 4 G



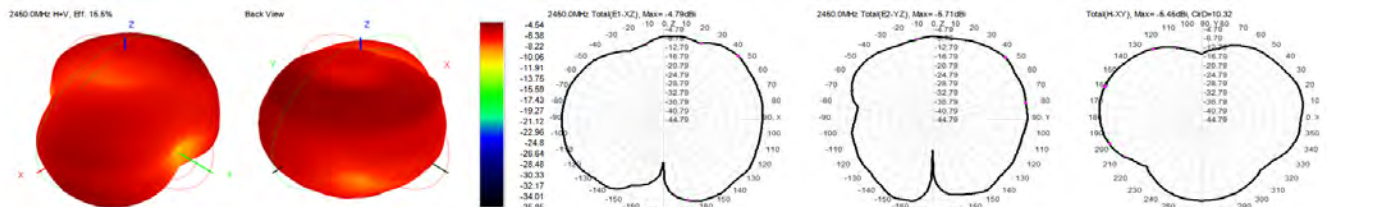
## 5. 无源效率-GPS

| Frequency (MHz) | 1550.0 | 1555.0 | 1560.0 | 1565.0 | 1570.0 | 1575.0 | 1580.0 | 1585.0 | 1590.0 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Gain (dBi)      | -0.46  | -0.40  | -0.45  | -0.58  | 0.27   | 1.16   | 1.66   | 1.93   | 1.93   |
| Efficiency (%)  | 29.13  | 28.88  | 28.25  | 27.82  | 27.67  | 28.02  | 28.43  | 28.57  | 29.18  |



## 5. 无源效率-BT

| Frequency (MHz) | 2400.0 | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 2490.0 | 2500.0 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Gain (dBi)      | -3.92  | -3.87  | -3.85  | -4.31  | -4.92  | -4.54  | -4.19  | -3.58  | -3.14  | -2.68  | -2.20  |
| Efficiency (%)  | 13.23  | 14.16  | 15.04  | 15.01  | 14.87  | 15.46  | 16.29  | 17.68  | 18.55  | 18.48  | 18.38  |



## 5. 无源效率- WIFI

| Frequency (MHz) | 2400.0 | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 2490.0 | 2500.0 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Gain (dBi)      | -3.67  | -3.70  | -3.52  | -3.35  | -3.49  | -3.50  | -3.36  | -3.58  | -3.51  | -3.26  | -3.10  |
| Efficiency (%)  | 15.09  | 15.13  | 15.28  | 15.56  | 15.43  | 15.60  | 16.24  | 16.65  | 16.86  | 15.84  | 15.12  |

