

**Product Number: NB2450-F4407B65-BX**  
**Product Name: Antenna**

**Index:**

- 1. Revision History / Page 2**
- 2. Specification / Page 3**
- 3. Characteristics and Reliability Test / Page 4**
- 4. Antenna - S Parameter Test Data / Page 5**
- 5. Antenna - Radiation Pattern Test Data / Page 6**
- 6. Mechanical and Packing Drawing / Page 7~8**

Product Number: NB2450-F4407B65-BX  
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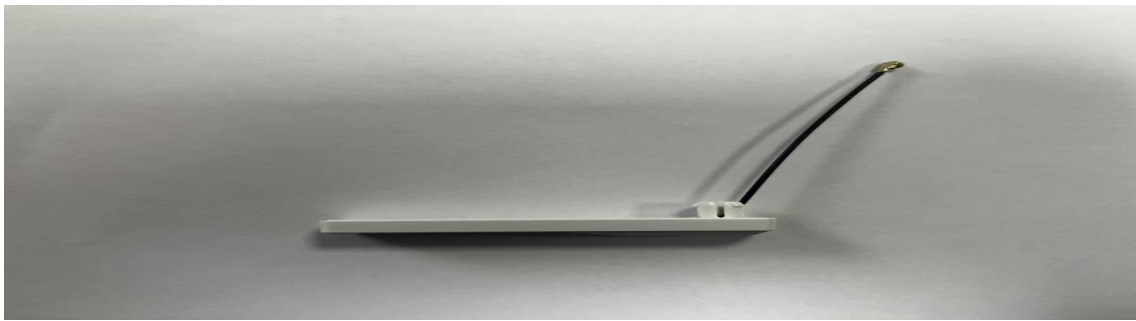
1. Revision History

| Revision | Date       | Change Notification | Description |
|----------|------------|---------------------|-------------|
| 1.0      | 2024.03.23 | 初版                  |             |
|          |            |                     |             |
|          |            |                     |             |
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|          |            |                     |             |

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## **2. Specification**

| <b>Sample Photo</b>                                                                |                                                                    |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------|
|  |                                                                    |
| <b>A. Electrical Characteristics</b>                                               |                                                                    |
| <b>Frequency</b>                                                                   | 2400 ~ 2500 MHz<br>5150 ~ 5800 MHz                                 |
| <b>S.W.R.</b>                                                                      | <= 2.0 @ 2400 ~ 2500 MHz<br><= 2.0 @ 5100 ~ 5800 MHz               |
| <b>Antenna Gain</b>                                                                | 2 +/- 0.5 dBi @ 2400 ~ 2500 MHz<br>2 +/- 0.5 dBi @ 5100 ~ 5800 MHz |
| <b>Efficiency(%)</b>                                                               | 75 % @ 2400~2500 MHz<br>75 % @ 2400~5800 MHz                       |
| <b>Radiation Pattern</b>                                                           | Omni-Directional                                                   |
| <b>Max Input Power</b>                                                             | >= 2 W                                                             |
| <b>Polarization</b>                                                                | Linear                                                             |
| <b>Impedance</b>                                                                   | 50 Ohm                                                             |
| <b>B. Material &amp; Mechanical Characteristics</b>                                |                                                                    |
| <b>Material of Radiator</b>                                                        | CU                                                                 |
| <b>Material of Plastic</b>                                                         | Body: FPC                                                          |
| <b>Cable Type</b>                                                                  | OD1.13                                                             |
| <b>Connector Type</b>                                                              | IPEX                                                               |
| <b>C. Environmental</b>                                                            |                                                                    |
| <b>Operation Temperature</b>                                                       | - 40 °C ~ + 65 °C                                                  |
| <b>Storage Temperature</b>                                                         | - 40 °C ~ + 80 °C                                                  |
| <b>Antenna Color Storage life</b>                                                  | < 2 year                                                           |

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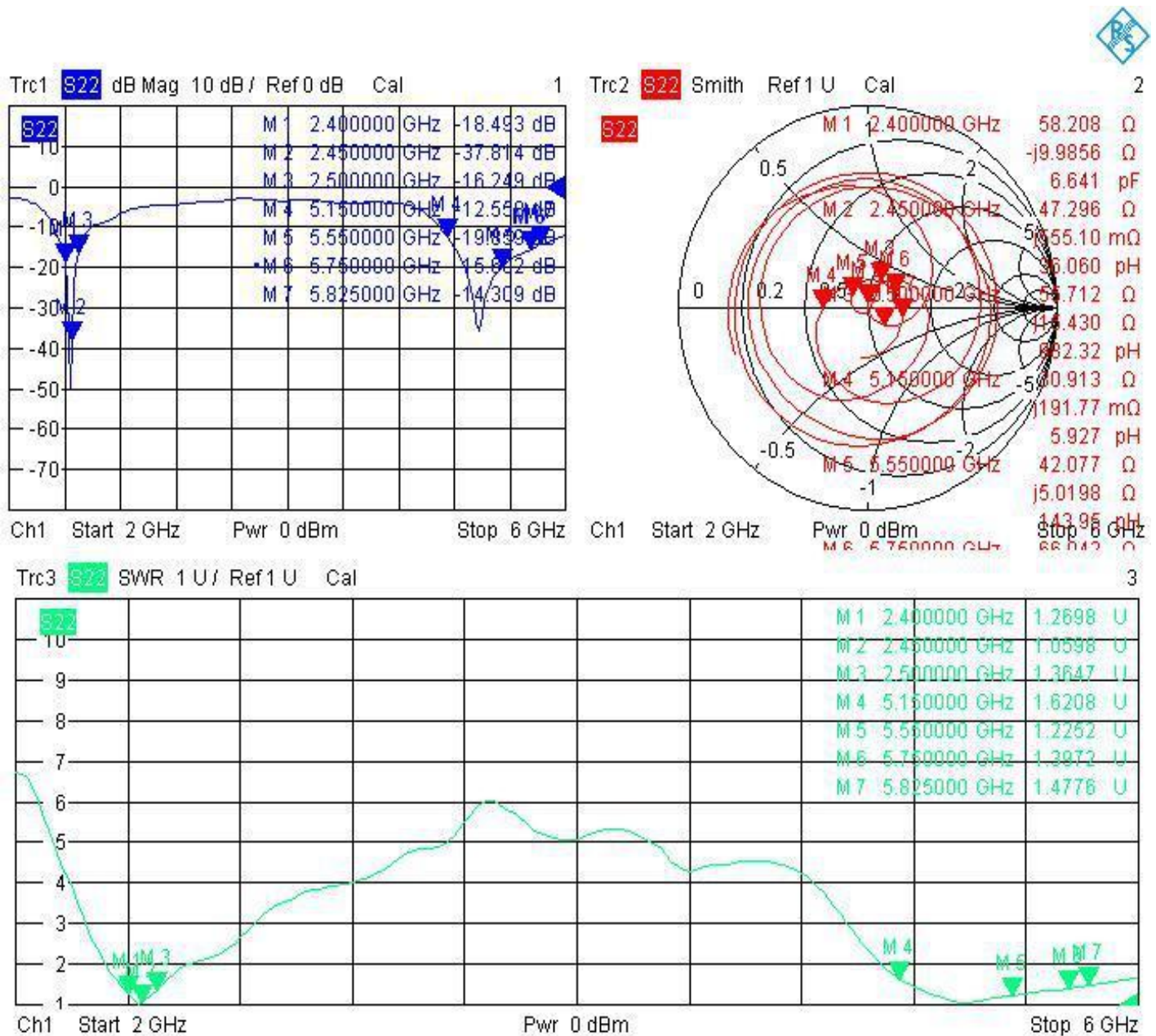
### 3. Characteristics and Reliability Test

| Test Items |                      | Test Condition and Procedure                                                                                              | Requirements                                                            |
|------------|----------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| C1         | S.W.R.               | Set DUT on Network Analyzer; make individual calibration to test                                                          | Directive DUT specification                                             |
| C2         | Antenna Gain         | Set DUT on Antenna Chamber; make individual calibration to test                                                           | Directive DUT specification                                             |
| M1         | Vibration            | GB / T2423 . 48-1997<br>Amplitude: 0.03 inch (1.5mm); Freq: 20 to 80 to 20 Hz<br>3 directions; 2 hours for each direction | 1. No Visual Damage<br>2. Frequency Tol.<= 5%                           |
| M2         | Random Drop          | GB / T2423.8-1995<br>Height: 1.0 Meter;<br>3 directions; 1 time for each direction                                        | 1. No parts separated<br>2. Frequency Tol.<= 5%                         |
| M3         | Solderability        | GB 2423 . 28- 82<br>Solder iron: 260±5°C; Duration: 5 seconds                                                             | 1. Mounted on PCB<br>2. No Visual Damage                                |
| M4         | Terminal-Pull Test   | Holding with individual specification; force applied to axis of terminal                                                  | 1. Directive DUT specification<br>2. Frequency Tol.<= 5%                |
| M5         | Terminal-Torque Test | Holding with individual specification; applied clockwise and counterclockwise to the axis of terminal                     | 1. Directive DUT specification<br>2. Frequency Tol.<= 5%                |
| M6         | Dimension            | Inspection of dimension, color, material, package, surface process                                                        | Directive DUT specification                                             |
| E1         | Salt Spray           | GB / T 2423 . 17- 93<br>Temp: 35°C; RH: >= 95%; NaCl solution: >= 5%;<br>Time: 24 hours                                   | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| E2         | Humidity             | GB / T 2423 . 4 - 93<br>Temp: 80°C / 12 H; -40°C / 12H RH: >= 90%;<br>Time: 24 hours                                      | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| E3         | Thermal Shock        | GB / T 2423 . 22 - 87<br>1 Cycle: - 40°C (30 minutes) to + 80°C (30 minutes)<br>Cycles: 24                                | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| E4         | Life (High Temp.)    | GB /T 2423 . 2 - 89<br>Temp: 80°C; Time: 24 hours                                                                         | After 2 Hours Recovery<br>1. No Visual Damage<br>2. Frequency Tol.<= 5% |
| R1         | RoHS                 | With Reference to IEC 62321:2008 with flow chart                                                                          | Directive RoHS 2011/65/EU                                               |
| R2         | PFOS                 | With Reference to USA EPA 3540C:1996 by LC/MS                                                                             | Directive RoHS 2006/122/EC                                              |
| R3         | PFOA                 | With Reference to USA EPA 3540C:1996 by LC/MS                                                                             | Directive RoHS 2006/122/EC                                              |

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#### 4. Antenna - S Parameter Test Data



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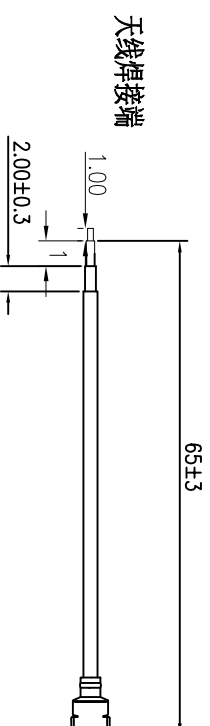
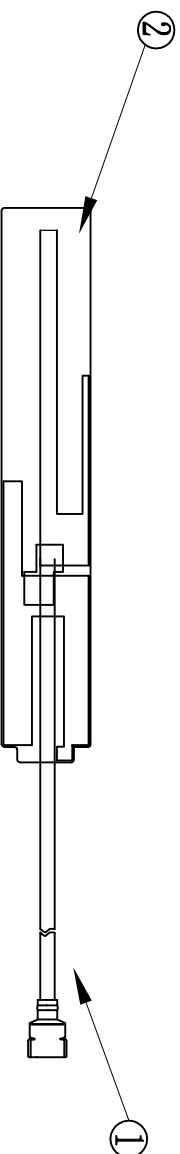
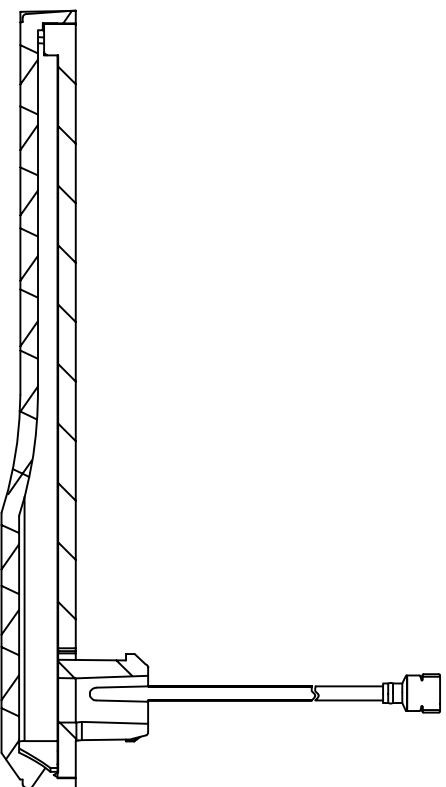
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## 5. Antenna - Radiation Pattern Test Data

| Passive Test For WIFI2400 |             |              |               |               |            |            |             |             |                    |                    |
|---------------------------|-------------|--------------|---------------|---------------|------------|------------|-------------|-------------|--------------------|--------------------|
| Freq<br>(MHz)             | Effi<br>(%) | Effi<br>(dB) | Gain<br>(dBi) | Gain<br>(dBd) | UHS<br>(%) | DHS<br>(%) | Max<br>(dB) | Min<br>(dB) | irectivit<br>(dBi) | Beamwidth<br>(3dB) |
| 2400                      | 72.74       | -1.38        | 3.39          | 1.24          | 33.842     | 38.9       | 3.39        | -12.53      | 4.77               | 0                  |
| 2410                      | 74.31       | -1.29        | 3.51          | 1.36          | 34.516     | 39.795     | 3.51        | -11.99      | 4.8                | 0                  |
| 2420                      | 74.57       | -1.27        | 3.58          | 1.43          | 34.526     | 40.044     | 3.58        | -12.26      | 4.85               | 0                  |
| 2430                      | 72.71       | -1.38        | 3.55          | 1.4           | 33.563     | 39.143     | 3.55        | -13.2       | 4.93               | 30                 |
| 2440                      | 70.34       | -1.53        | 3.44          | 1.29          | 32.209     | 38.126     | 3.44        | -13.32      | 4.97               | 30                 |
| 2450                      | 69.29       | -1.59        | 3.36          | 1.21          | 31.488     | 37.8       | 3.36        | -13.54      | 4.96               | 30                 |
| 2460                      | 66.54       | -1.77        | 3.08          | 0.93          | 30.034     | 36.508     | 3.08        | -14.51      | 4.85               | 30                 |
| 2470                      | 64.23       | -1.92        | 3.03          | 0.88          | 28.913     | 35.317     | 3.03        | -15.39      | 4.95               | 30                 |
| 2480                      | 65.49       | -1.84        | 3.25          | 1.1           | 29.478     | 36.013     | 3.25        | -16.28      | 5.09               | 30                 |
| 2490                      | 67.34       | -1.72        | 3.4           | 1.25          | 30.473     | 36.872     | 3.4         | -16.78      | 5.12               | 0                  |
| 2500                      | 65.96       | -1.81        | 3.36          | 1.21          | 29.941     | 36.023     | 3.36        | -17.55      | 5.17               | 0                  |

| Passive Test For WIFI-5G |             |              |               |               |            |            |             |             |                    |                    |
|--------------------------|-------------|--------------|---------------|---------------|------------|------------|-------------|-------------|--------------------|--------------------|
| Freq<br>(MHz)            | Effi<br>(%) | Effi<br>(dB) | Gain<br>(dBi) | Gain<br>(dBd) | UHS<br>(%) | DHS<br>(%) | Max<br>(dB) | Min<br>(dB) | irectivit<br>(dBi) | Beamwidth<br>(3dB) |
| 5150                     | 35.44       | -4.51        | -0.52         | -2.67         | 20.287     | 15.148     | -0.52       | -22.4       | 3.99               | 240                |
| 5250                     | 28.79       | -5.41        | -0.97         | -3.12         | 16.294     | 12.5       | -0.97       | -21.32      | 4.44               | 180                |
| 5350                     | 30.41       | -5.17        | -0.28         | -2.43         | 16.58      | 13.832     | -0.28       | -20.91      | 4.89               | 180                |
| 5450                     | 36.77       | -4.34        | 1.05          | -1.1          | 20.039     | 16.735     | 1.05        | -17.83      | 5.39               | 90                 |
| 5550                     | 39.19       | -4.07        | 1.67          | -0.48         | 20.617     | 18.571     | 1.67        | -15.5       | 5.74               | 60                 |
| 5650                     | 67.89       | -1.68        | 3.46          | 1.31          | 34.075     | 33.818     | 3.46        | -16.53      | 5.14               | 60                 |
| 5750                     | 75.13       | -1.24        | 4.23          | 2.08          | 37.839     | 37.29      | 4.23        | -18.47      | 5.48               | 60                 |
| 5850                     | 73.25       | -1.35        | 4.25          | 2.1           | 37.538     | 35.711     | 4.25        | -15.94      | 5.6                | 90                 |

| 1   |         | 2                                 | 3    | 4 |
|-----|---------|-----------------------------------|------|---|
| NO. | NAME    | SPECIFICATION                     | Q'TY |   |
| 1   | Cable線  | L=65mm O.D.=1.13mm 1代IPEX端子朝上 线黑色 | 1    |   |
| 2   | ANTENNA | FPC 黑色油墨                          | 1    |   |



**NOTES:**

1. Electrical:
  - 1.1 Impedance: 50 OHM.
  - 1.2 Frequency: 2400~5800MHz
  - 1.3 Polarization :Vertical
  - 1.4 VSWR:  $\leq 2.0$
  - 1.5 Gain: 2dBi
2. Environmental:
  - 2.1 Storage Temperature Range: -30 TO +70°C.
  - 2.2 Operating Temperature Range: -30 TO +70°C.
3. All Materials Must Meet & Shall RoHS Request.

|      |                                                                                     |                                                                                     |    |       |            |
|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-------|------------|
| 组立图  |                                                                                     | 设计                                                                                  | 章兵 | 日期    | 2024-09-15 |
|      |                                                                                     | 审核                                                                                  |    | 日期    |            |
|      |                                                                                     | 确认                                                                                  |    | 日期    |            |
| 成品料号 | NB2450-F4407B65-BX                                                                  |  | 比例 | 1:1   | 单位 mm      |
| 版本号  | A0                                                                                  | 页码                                                                                  |    | 共 1 页 | 第 1 页      |
| 变更标记 |  | 变更数量                                                                                |    |       |            |

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产品规格:

一、标签要求（根据客户名称参考对应的成品标签制作要求，无要求即按普通标签要求）

内标签 长 50mm 宽 60mm 左右

|       |               |     |          |
|-------|---------------|-----|----------|
| 需方    | *****         |     |          |
| 供方    | 东莞市腾晨电子科技有限公司 |     |          |
| 物料编码  | *****         |     |          |
| 生产单号  | *****         |     |          |
| 品名规格  | *****         | 检验员 | **       |
| 数量/单位 | *****         | 日期  | ****.*** |
| 追溯码   | *****         | 流水号 | **       |

外标签 长 50mm 宽 60mm 左右

|       |               |     |          |
|-------|---------------|-----|----------|
| 需方    | *****         |     |          |
| 供方    | 东莞市腾晨电子科技有限公司 |     |          |
| 物料编码  | *****         |     |          |
| 生产单号  | *****         |     |          |
| 品名规格  | *****         | 检验员 | **       |
| 数量/单位 | *****         | 日期  | ****.*** |
| 追溯码   | *****         | 流水号 | **       |

二、装箱要求

作业说明:

外包装:

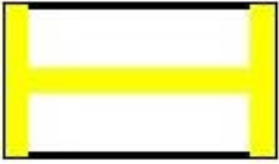
1. 内包装:

产品\_\_100\_\_PCS/PE 袋



2. 外包装:

根据实际包装定数量/箱



纸箱



注意事项:

1. 是否要增设隔板、珍珠棉;
2. 标签的贴附, 如 ROHS 等;