

## Product Specification

**Customer :** Actions Microelectronics Co.,Ltd

**Product Description:** 2.4/5G WIFI Antenna

**Part NO.:** ANT-PCB-PRO-DONGLE-2

**Customer Part NO.:** \_\_\_\_\_

**Version:** V1.0

**Date:** 2018.9.12

|              | Manufacturer Signature | Customer Signature |
|--------------|------------------------|--------------------|
| Approved by: |                        |                    |
| Date:        |                        |                    |

## Contents

| Item    | Description                 | Page |
|---------|-----------------------------|------|
| 1. .... | Revised History .....       | 3    |
| 2. .... | Antenna Specification ..... | 4    |
| 3. .... | Antenna Assembly .....      | 5    |
| 4. .... | Product Photo .....         | 6    |
| 5. .... | Test Report .....           | 7-8  |

## Revised History

| Date | Version | Revised Record |
|------|---------|----------------|
|      |         |                |
|      |         |                |
|      |         |                |
|      |         |                |
|      |         |                |
|      |         |                |
|      |         |                |
|      |         |                |
|      |         |                |
|      |         |                |
|      |         |                |

# Antenna Specification

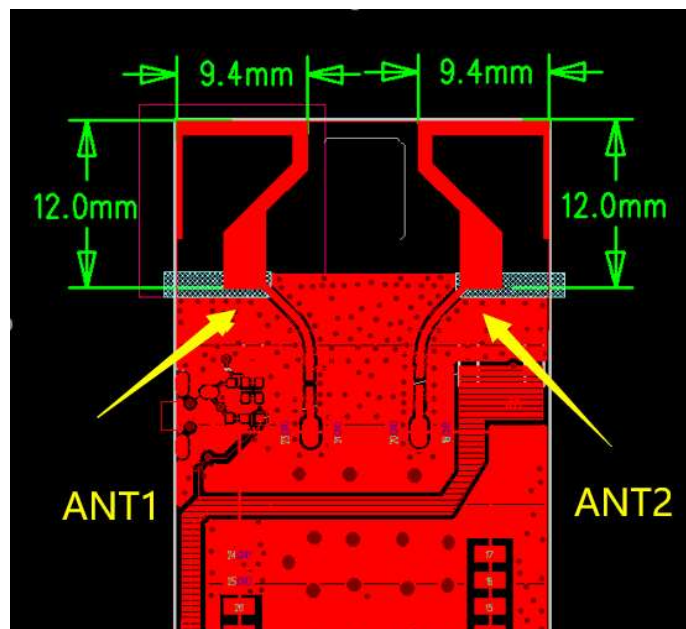
## Electrical Properties

|                             |                                                          |
|-----------------------------|----------------------------------------------------------|
| Function                    | 2.4/5G WIFI Antenna                                      |
| Frequency Range (GHz)       | 2.4-2.5 ;5.1-5.85                                        |
| VSWR                        | $\leq 2.5$                                               |
| Gain(dBi)                   | ANT1:1dBi@2.4g; 1.2dBi@5g;<br>ANT2:1dBi@2.4g; 1.0dBi@5g; |
| Input Impedence( $\Omega$ ) | 50                                                       |
| Polarization Type           | line Vertiacal                                           |
| Antenna Type                | PIFA                                                     |

## Physical Properties

|                  |                    |
|------------------|--------------------|
| Function         | 2.4/5G WIF Antenna |
| Antenna material | PCB                |
| Working Temp     | -40℃-65℃           |
| Storage Temp     | -40℃-80℃           |
|                  |                    |
|                  |                    |
|                  |                    |
|                  |                    |

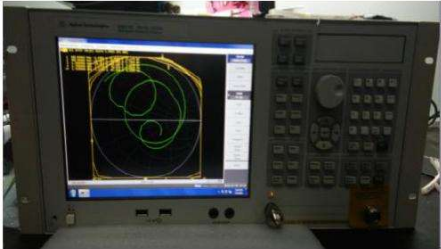
## Antenna Assembly (2.4-5G)



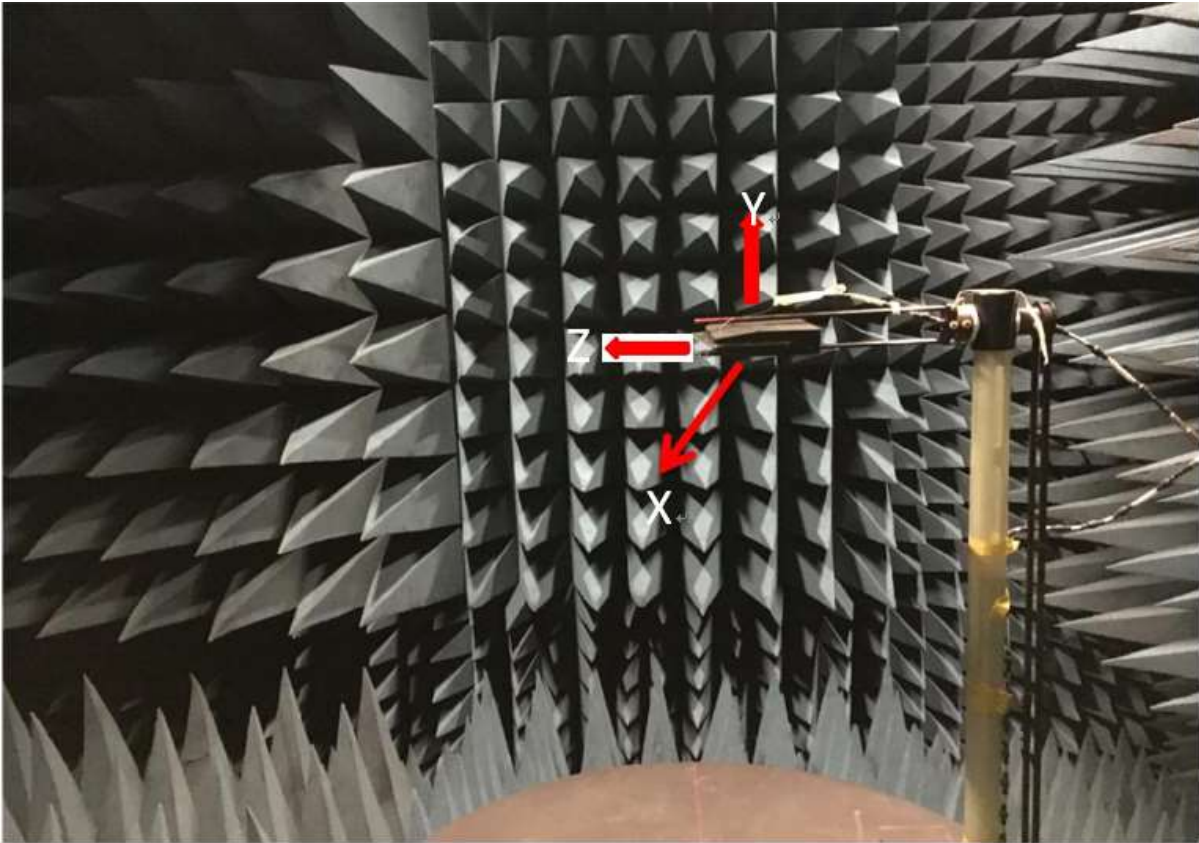
Product Photo

Test Report

Test equipment

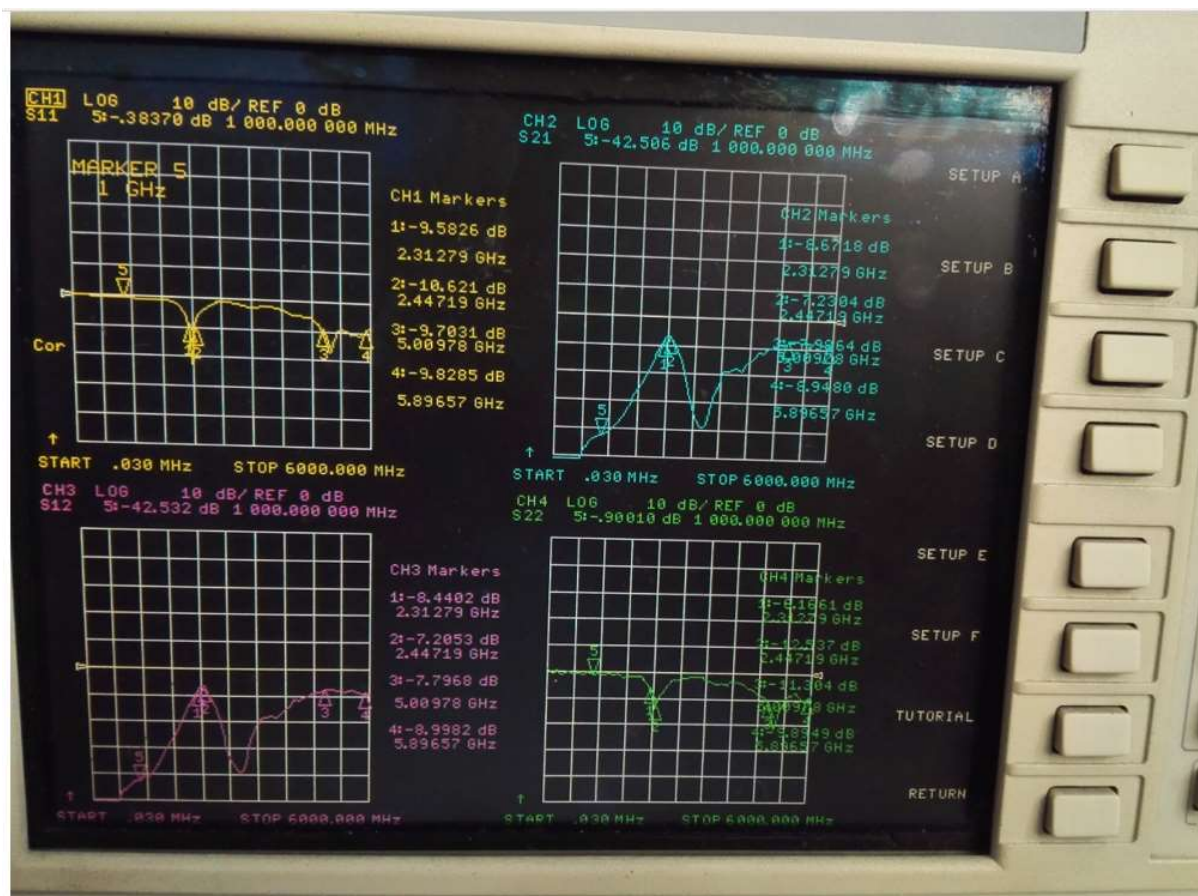
| Num | Equipment name         | Equipment picture                                                                   | Index   | Environment |
|-----|------------------------|-------------------------------------------------------------------------------------|---------|-------------|
| 1   | Atenlab<br>3D darkroom |   | Passive |             |
| 2   | Agilent<br>E5071C      |  |         |             |

Test environment picture



Return Loss/VSWR/Smith chart (2.4-5G) :

ANT1 AND ANT2:



**ANT1 Return Loss/VSWR/Smith chart (2.4-5G)**

|                 |      |      |      |     |
|-----------------|------|------|------|-----|
| 频率 (GHZ)        | 2.4  | 2.68 | 5.20 | 6   |
| Return loss(dB) | -9.6 | -10  | -8   | -10 |

|      |   |      |      |      |
|------|---|------|------|------|
| VSWR | 2 | 1.87 | 2.32 | 1.89 |
|------|---|------|------|------|

**Antenna gain/Efficiency**

|                |       |       |       |       |       |       |       |       |       |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency(GHz) | 2.4   | 2.41  | 2.42  | 2.43  | 2.44  | 2.45  | 2.46  | 2.47  | 2.48  |
| Efficiency(%)  | 38.84 | 29.51 | 24.72 | 37.06 | 32.58 | 31.36 | 36.73 | 37.15 | 36.56 |
| Peak Gain(dBi) | 0.73  | 0.8   | 0.76  | 0.45  | 0.52  | 1.0   | 0.36  | 0.66  | 0.44  |
| Frequency(GHz) | 5     | 5.1   | 5.2   | 5.3   | 5.4   | 5.5   | 5.6   | 5.7   | 5.8   |
| Efficiency(%)  | 21.88 | 28.12 | 35.12 | 37.15 | 38.73 | 48.87 | 42.27 | 39.36 | 40.64 |
| Peak Gain(dBi) | 0.71  | 0.6   | 0.80  | 1.18  | 0.26  | 0.92  | 1.20  | 1.14  | 1.06  |



ANT2 Return Loss/VSWR/Smith chart (2.4-5G)

|                 |      |      |      |     |
|-----------------|------|------|------|-----|
| 频率 (GHZ)        | 2.4  | 2.68 | 5.20 | 6   |
| Return loss(dB) | -9.6 | -10  | -8   | -10 |

|      |   |      |      |      |
|------|---|------|------|------|
| VSWR | 2 | 1.87 | 2.32 | 1.89 |
|------|---|------|------|------|

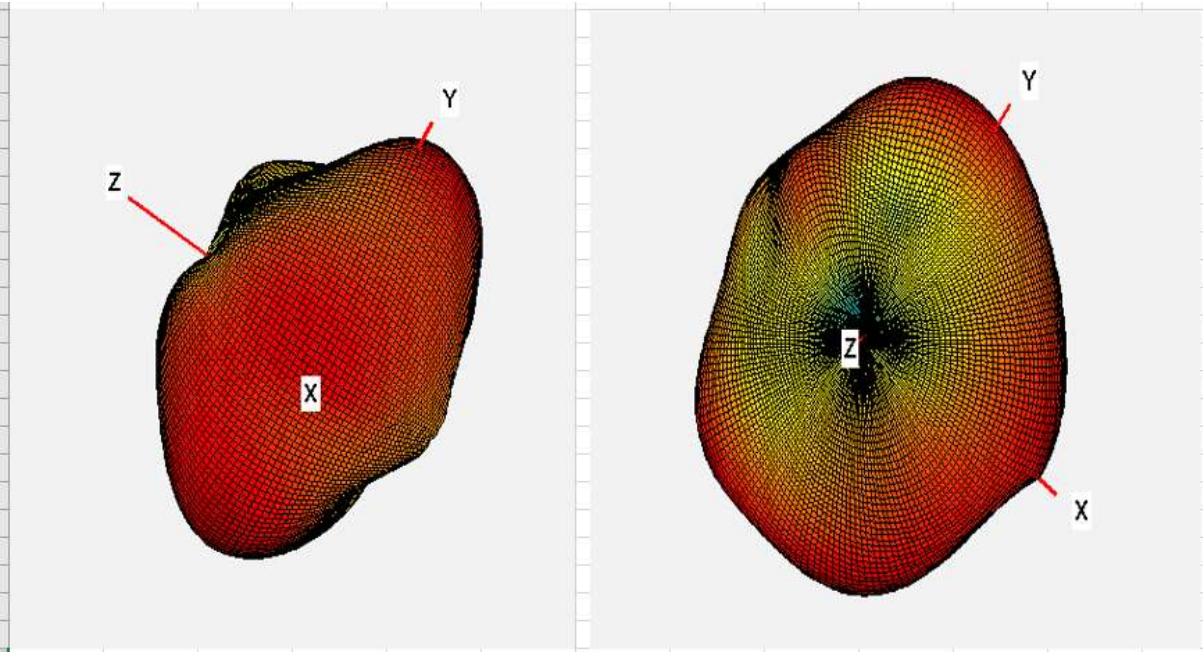
Antenna gain/Efficiency

|                |       |       |       |       |       |       |       |       |       |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency(GHz) | 2.4   | 2.41  | 2.42  | 2.43  | 2.44  | 2.45  | 2.46  | 2.47  | 2.48  |
| Efficiency(%)  | 38.84 | 29.51 | 34.72 | 31.06 | 32.51 | 31.36 | 32.73 | 37.15 | 36.56 |
| Peak Gain(dBi) | 0.72  | 0.8   | 0.46  | 0.65  | 0.52  | 1.0   | 0.36  | 0.66  | 0.44  |

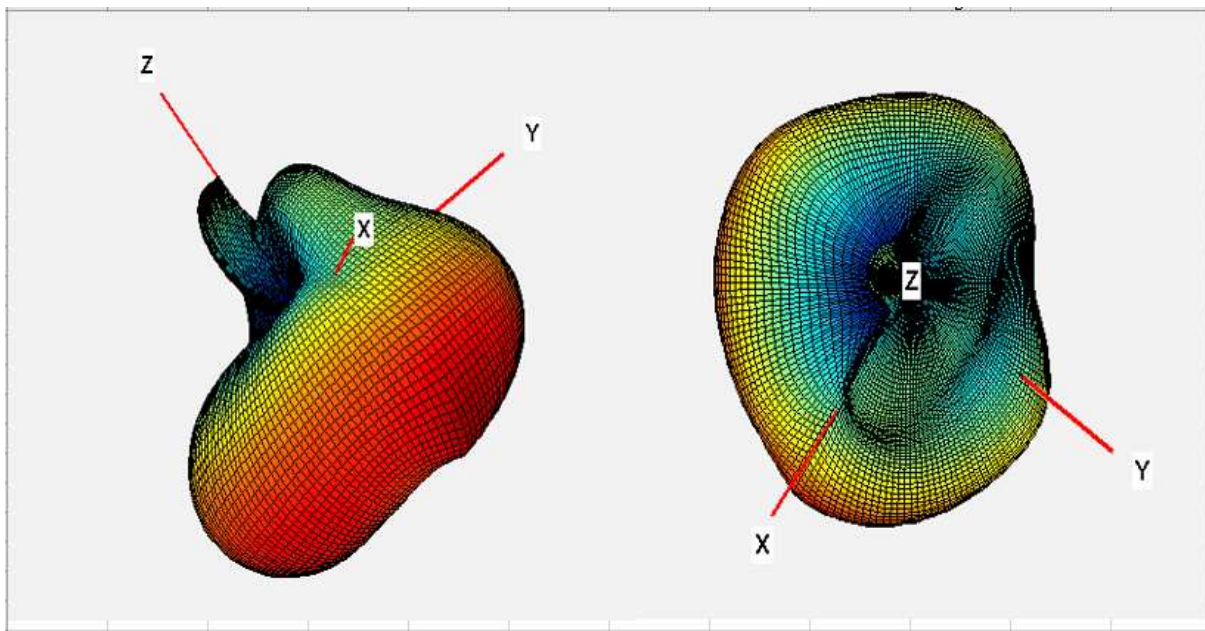
|                |       |       |       |       |       |       |       |       |       |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency(GHz) | 5     | 5.1   | 5.2   | 5.3   | 5.4   | 5.5   | 5.6   | 5.7   | 5.8   |
| Efficiency(%)  | 21.88 | 28.12 | 35.12 | 36.15 | 33.73 | 38.87 | 42.27 | 39.26 | 40.64 |
| Peak Gain(dBi) | 0.71  | 0.6   | 1.00  | 0.88  | 0.26  | 0.92  | 0.76  | 0.94  | 0.49  |

Directional diagram:

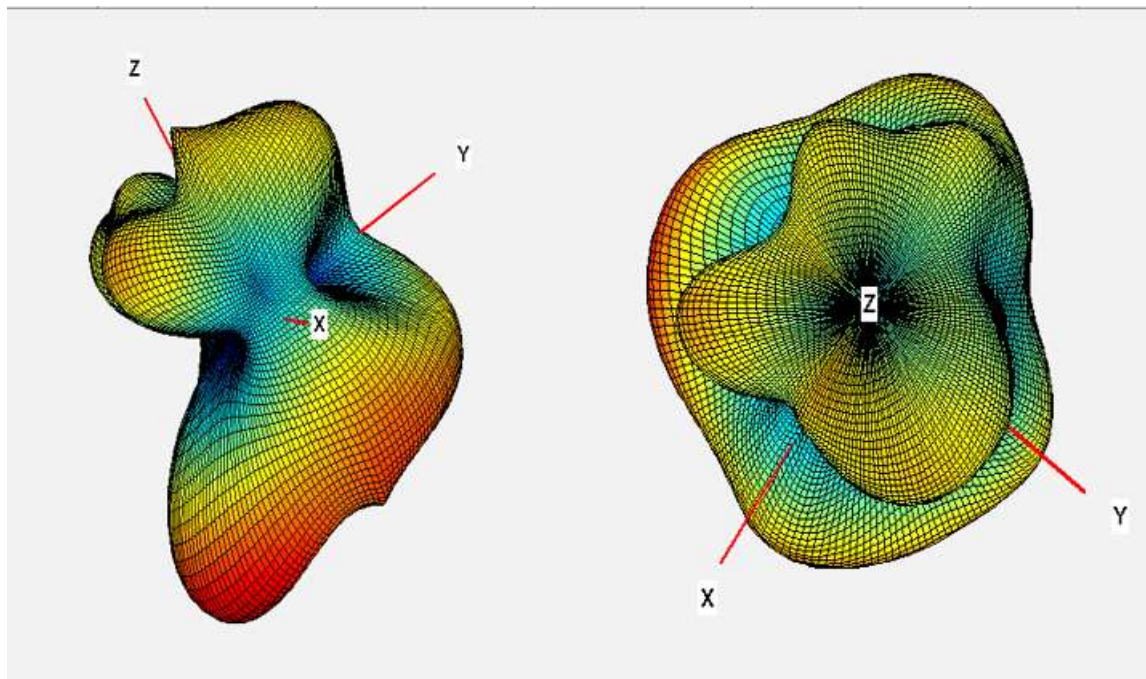
ANT1-2.4G



ANT1-5G:



ANT2-2.4G:



ANT2-5G:

