

# DATA SHEET

## WIRELESS COMPONENTS WLAN ANTENNA

Model: LN313

Part No / YAGEO: ANTA0ZV1421124553  
Part No /Customer: 6036B0289801



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**1. ORDERING INFORMATION-GLOBAL PART NUMBER, PHYCOMP CTC & 12NC**

All part numbers are identified by the series, packing type, material, size, antenna type, working frequency and packing quantity

**YAGEO BRAND ordering code****GLOBAL PART NUMBER (PREFERRED)****ANTA0ZV1421124553**

(1) (2) (3) (4) (5) (6) (7)

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**(1) FAMILY**

---

ANT = Antenna Products

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**(2) SPECIAL DESIGN PRODUCT**

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A0

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**(3) CUSTOMER NAME**

---

ZV=Customer

---

**(4) PROJECT NUMBER**

---

1421 = Project Series Number

---

**(5) AMOUNT OF CONNECTORS**

---

1= 1 connector

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**(6) ANTENNA FUNCTION**

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2455 = WLAN

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**(7) ANTENNA NUMBER**

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3 = Project Part Number

## 2. SPECIFICATIONS

### DESCRIPTION

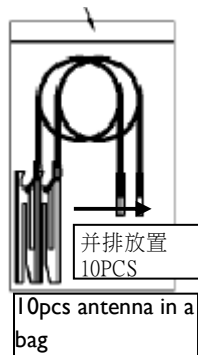
|                                          |                                                                    |
|------------------------------------------|--------------------------------------------------------------------|
| Working Frequency                        | 2400 ~ 2500MHz/ 5150~5850MHz                                       |
| VSWR                                     | 4.0 : 1 max for WLAN Antenna                                       |
| Peak Gain                                | 2.6 dBi for 2400 ~2500MHz band<br>3.93 dBi for 5150 ~5850MHz band  |
| Cable Loss                               | 0.26 dBi for 2400 ~2500MHz band<br>0.40 dBi for 5150 ~5850MHz band |
| Radio Connector                          | I-PEX, TN , KS, FD or equivalent                                   |
| Coaxial Cable                            | KB, HL, SY or equivalent                                           |
| Impedance                                | 50Ω Nominal.                                                       |
| Cable Diameter / Length / Color / Jacket | 1.13 mm / 95mm / Black / FEP                                       |
| Antenna Dimension                        | 23*12 mm                                                           |
| Operating Temperature                    | -40~90°C                                                           |
| Maximum Power                            | 1W                                                                 |
| Polarization                             | Linear                                                             |
| Radiation Pattern                        | Omni-directional                                                   |
| Tube                                     | OD2.5mm/L=20mm                                                     |
| Antenna Type                             | PIFA                                                               |

### 3. PACKING SPEC

Packing 10 pcs of antenna in a small bag(No.6); every 10 bags packing in a big bag(No.8); every 20 bags(No.8) packing in a carton. Each carton contains 2000pcs antenna in total.

**Please refer to below as example.**

#### 1. 10 Pcs/Per Small Bag(No. 6)



#### 2. 10 Small Bag/Per Big Bag(No. 8)



#### 3. 20 Big Bag/per Carton (2000pcs)



#### 4. Finished Packing



## 4. Test Methodology

### 4.1 Test equipment

The equipment for the antenna measurement we used is as follows.

- A. Agilent 8753ET / 8719D Network Analyzer to measure the VSWR and input impedance.
- B. Three-dimensional anechoic chamber to measure the gain  
(Standard dipole and horn were used to calibrate the chamber)
- C. Digital caliper to measure the dimensions.
- D. Climatic chamber for mechanical tests.

### 4.2 Test setup

#### 4.2.1 Frequency Range

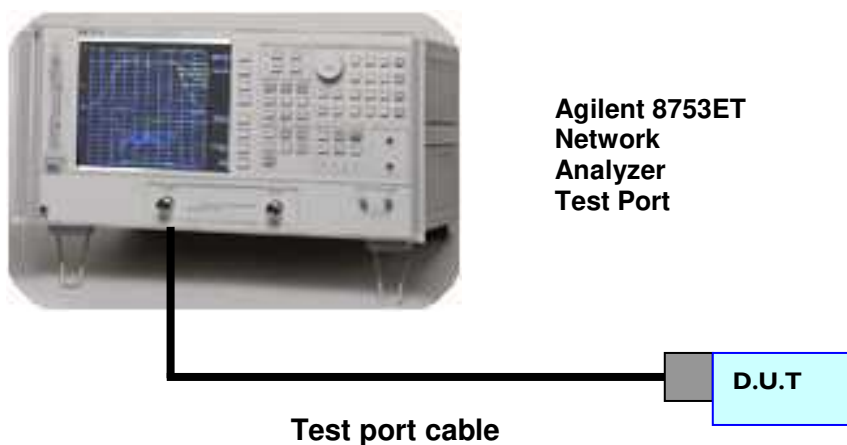
2000 ~ 6000MHz

#### 4.2.2 Antenna configuration

The antenna basically has two parts; the stamping and the cable assembly with the connector on one side. The detailed drawing is attached.

#### 4.2.3 VSWR

The VSWR is measured with Agilent 8753ET / 8719D network analyzer. All the measurements are performed with the customer provided fixture. Figure 1 shows the schematic diagram for measuring VSWR.



**Figure 1. The schematic diagram for measuring VSWR**

4.2.4 Radiation pattern and gain

The radiation pattern must have the omni-directional characteristic in both positions. The radiation pattern measurements are performed in the three-dimensional anechoic chamber. The chamber provides less than -30dB reflectivity from 700MHz through 8GHz. The chamber is calibrated using both standard dipole and horn antenna. The gain here is expressed as dBi that standardizes the isotropic antenna. The gain measurements are also performed in the same chamber described previously. Figure 2 shows the schematic diagram for measuring radiation pattern and gain.

2D / 3D Anechoic chamber

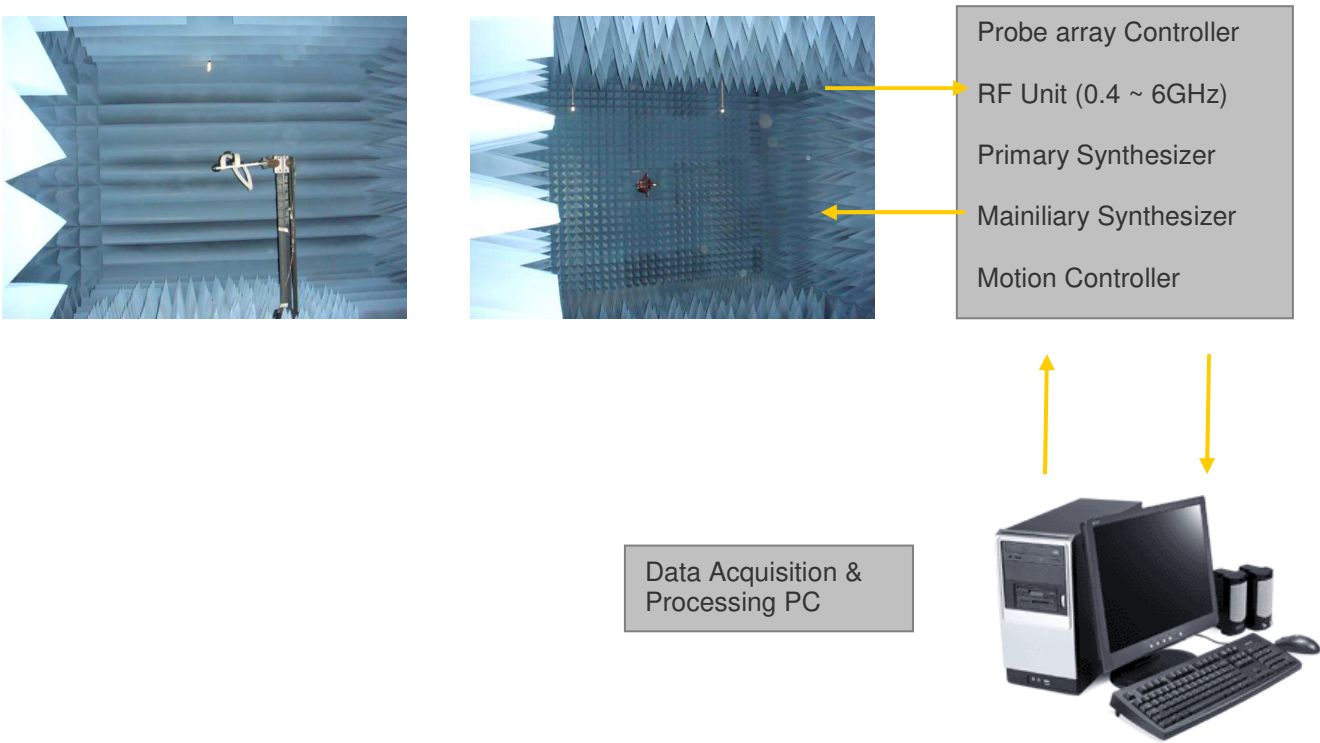
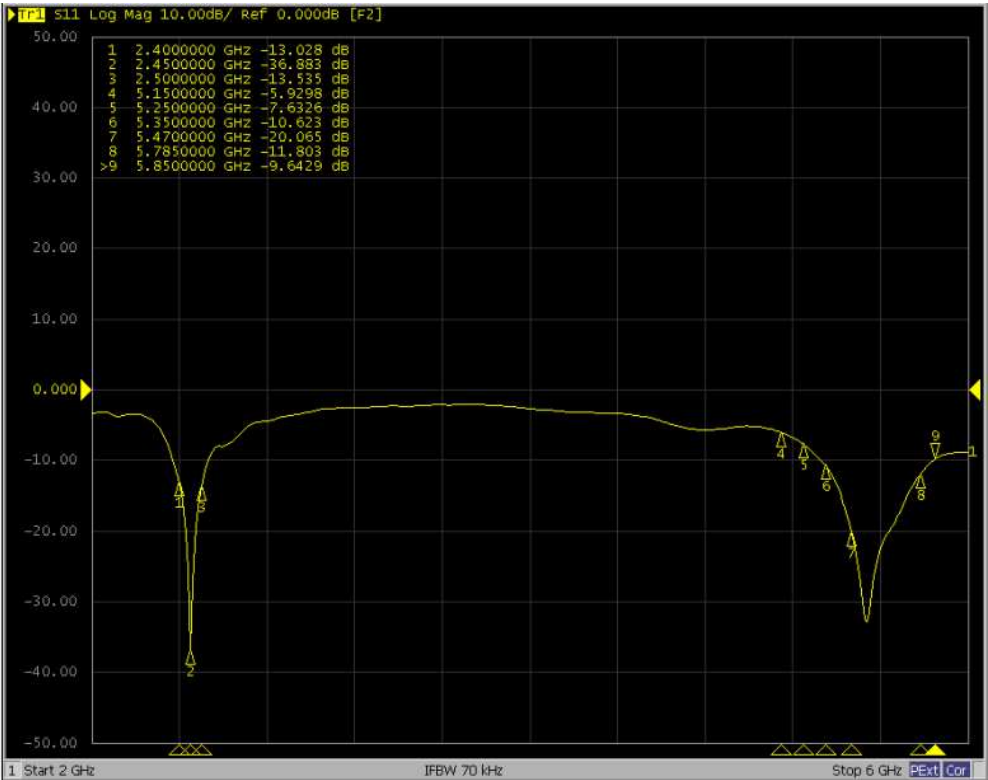


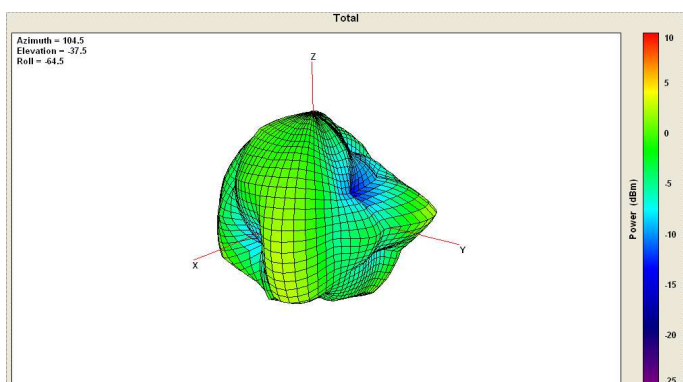
Figure 2. The schematic diagram for measuring radiation pattern and gain

5. Performance Data

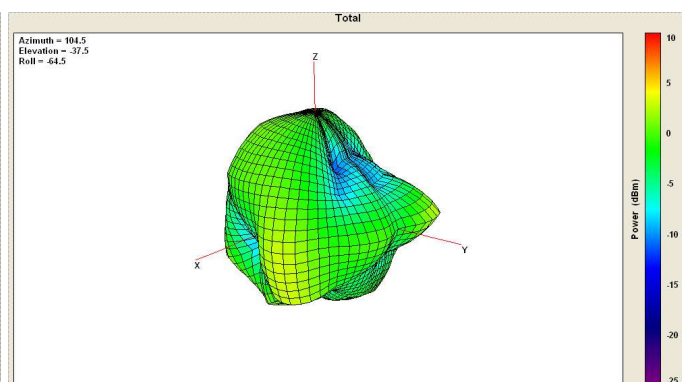
5.1 VSWR in the Fixture



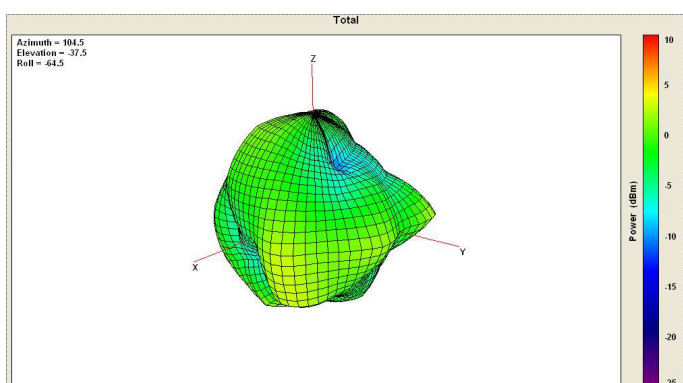
## 5.2 Radiation pattern and gain for 3D Data



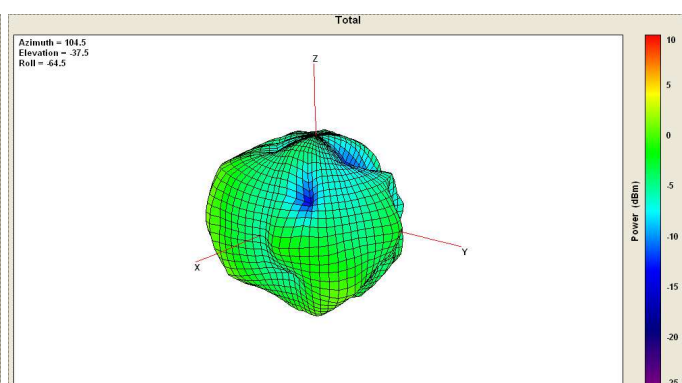
**2400MHz**



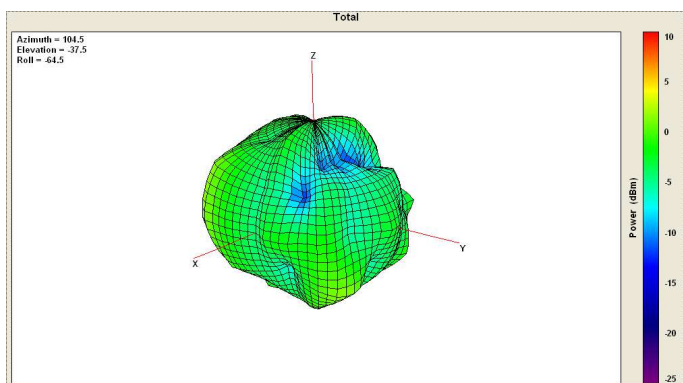
**2450MHz**



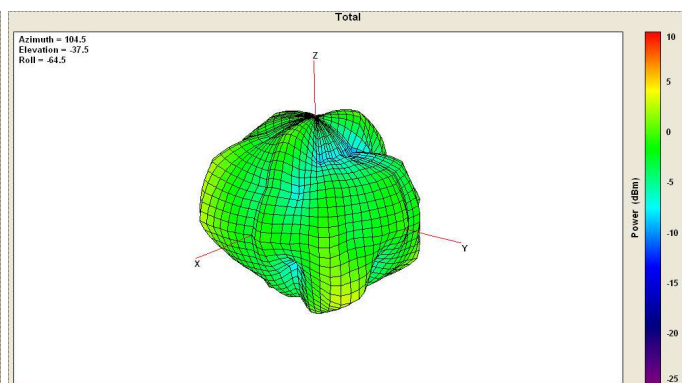
**2500MHz**



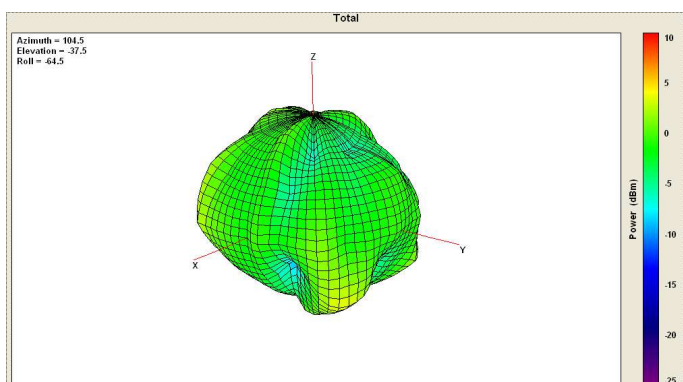
**5150MHz**



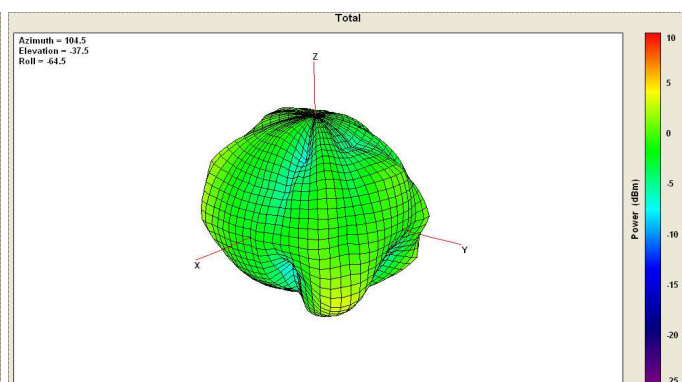
**5250MHz**



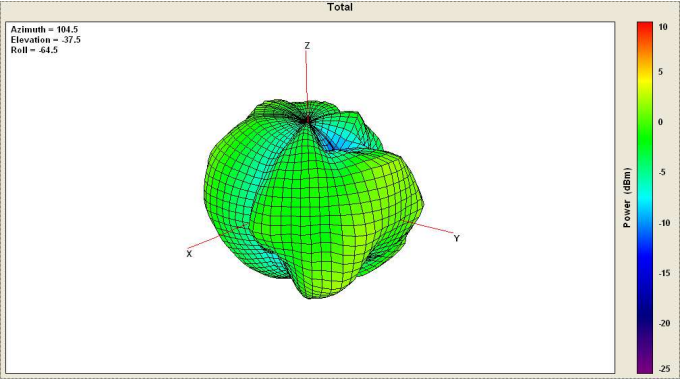
**5350MHz**



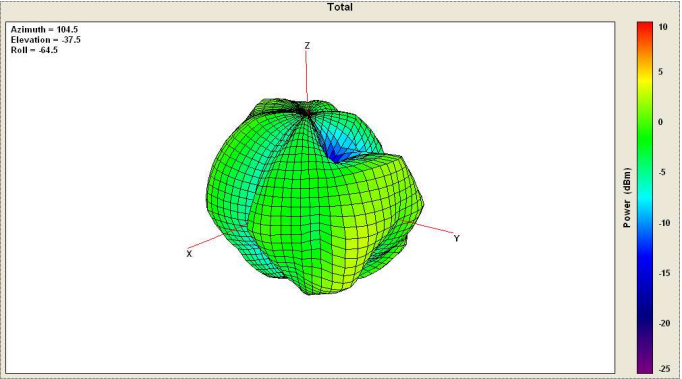
**5470MHz**



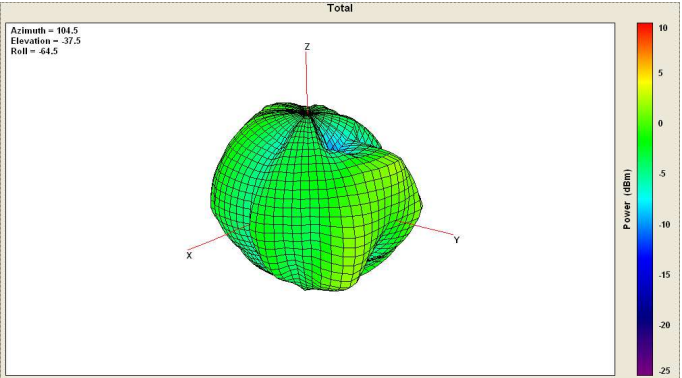
**5600MHz**



5725MHz



5785MHz



5850MHz

## 5.3 Average gain (dBi) summary

| Antenna (Cable color) /<br>Band / Frequency |        |      | Gain Spec<br>3D Spec<br>H/B Mode | Test Date<br>Antenna Gain |  |
|---------------------------------------------|--------|------|----------------------------------|---------------------------|--|
| 1st WLAN                                    | 2.4GHz | 2400 |                                  | -1.62                     |  |
|                                             |        | 2450 | -4.3                             | -1.31                     |  |
|                                             |        | 2500 | -4.3                             | -1.44                     |  |
|                                             | 5GHz   | 5150 | -5.3                             | -3.66                     |  |
|                                             |        | 5250 | -5.3                             | -3.03                     |  |
|                                             |        | 5350 | -5.3                             | -2.02                     |  |
|                                             |        | 5470 | -5.3                             | -1.56                     |  |
|                                             |        | 5600 | -5.3                             | -1.68                     |  |
|                                             |        | 5725 | -5.3                             | -2.09                     |  |
|                                             |        | 5785 | -5.3                             | -2.05                     |  |
|                                             |        | 5850 | -5.3                             | -2.69                     |  |

## 6.1 Antenna Drawing



**7. Reliability Data For Antenna Patch**

| IEC<br>384-10/<br>CECC 32 100<br>CLAUSE | IEC<br>60068-2<br>TEST<br>METHOD | TEST                              | PROCEDURE                                                  | REQUIREMENTS                                                          |
|-----------------------------------------|----------------------------------|-----------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------|
| 4.12                                    | 4(Na)                            | Rapid<br>change of<br>temperature | -40 °C (30 minutes) to<br>+90 °C (30 minutes); 5<br>cycles | No visible damage<br>Central Freq. Change 6%                          |
| 4.14                                    | 3(Ca)                            | Damp heat                         | 500 ± 12 hours at 40 °C;<br>90 to 95 % RH                  | No visible damage<br>2 hours recovery<br>Central Freq. Change<br>± 6% |
| 4.15                                    |                                  | Endurance                         | 500 ± 12 hours at 90 °C;                                   | No visible damage<br>2 hours recovery<br>Central Freq. Change<br>± 6% |

8. REVISION HISTORY

| Revision | Date Change Notification | Description |
|----------|--------------------------|-------------|
| R01      | 2020/10/06               | New Release |