

## WiFi/BT Antenna Datasheet

### Description

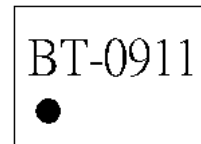
The exciting Auden antenna is one of the world's high-performance WiFi/BT antennas. It is very suitable for WiFi/BT system application by a suitable clearance area and matching circuit. This WiFi/BT standard antenna was design to speed the overall development process and decrease required development time then make your products fast to enter the market of the world. The antenna dimension is 8.6mm (L) x 6.2mm (W) x 3.0mm (T).

### The patent number

Patent pending.

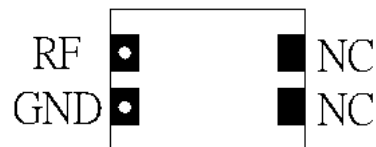
### Features

- ⊙ Linear Polarization
- ⊙ Standard Antenna
- ⊙ SMD Solder
- ⊙ Ultra-Thin, Light Weight
- ⊙ Miniaturized Size (8.6 x 6.2x 3.0mm<sup>3</sup>)
- ⊙ Omni-Direction Antenna Pattern
- ⊙ Wide Bandwidth
- ⊙ Cost-Effective



### Applications

- ⊙ Mobile phone
- ⊙ Smart phone
- ⊙ Note book
- ⊙ Car device
- ⊙ Tracking device
- ⊙ Wireless device



Pin Assignments

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## 1. Antenna Equivalent Circuit

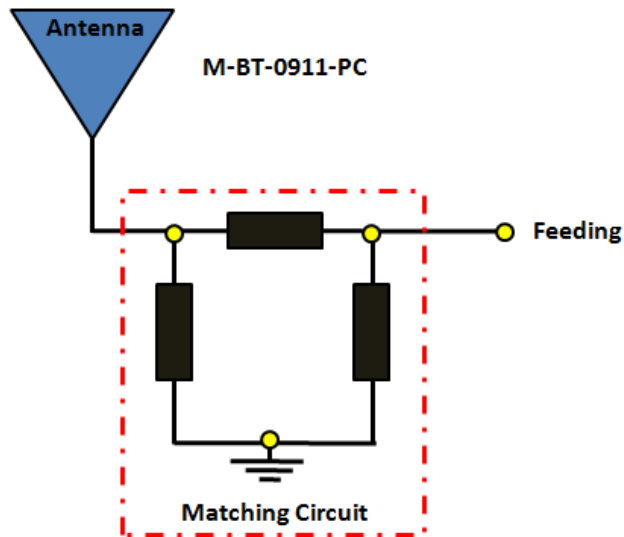


Fig.1 The Antenna Equivalent Circuit

Table.1 The M-BT-0911-PC Antenna Quick Reference Data

Antenna Type	PIFA Antenna
Frequency	2.4GHz~2.5GHz & 5.15~5.825GHz
VSWR	2.5:1 (typ.)
Impedance	50Ω
Polarization	Linear
Pattern	Omni-Directional
3D avg. efficiency (typ.)	50%~60%

## 2. Pin Descriptions

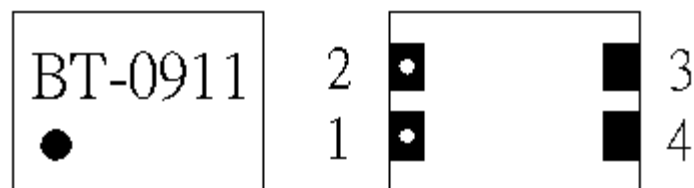


Fig.2 The BT Antenna Pin Descriptions

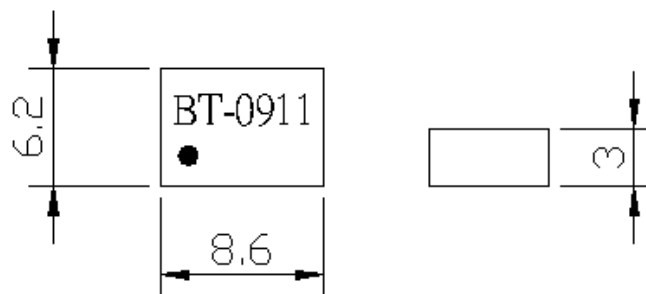
**Table.2 The BT Antenna Pin Descriptions**

Pin Number	Name	Description
1	RF or GND	RF input or GND
2	RF or GND	RF input or GND
3	NC	No connect
4	NC	No connect

**Note:**

1. Both of the pin.1 and pin.2 are RF input. You can choose one pin for RF signal input depends on your PCB layout design.
2. Suggestions: please using pin.1 be your RF input and pin.2 contact to ground if the antenna placing on the left side of your product PCB. If the antenna placing on the right side of your product PCB, then Pin.1 contact to ground and pin.2 be your RF input for make sure the antenna can work well.

### 3. Package and Form Information


**Fig.3 The M-BT-0911-BT Antenna 3D Top View**

**Fig.4 The M-BT-0911-PC Antenna Form Information**

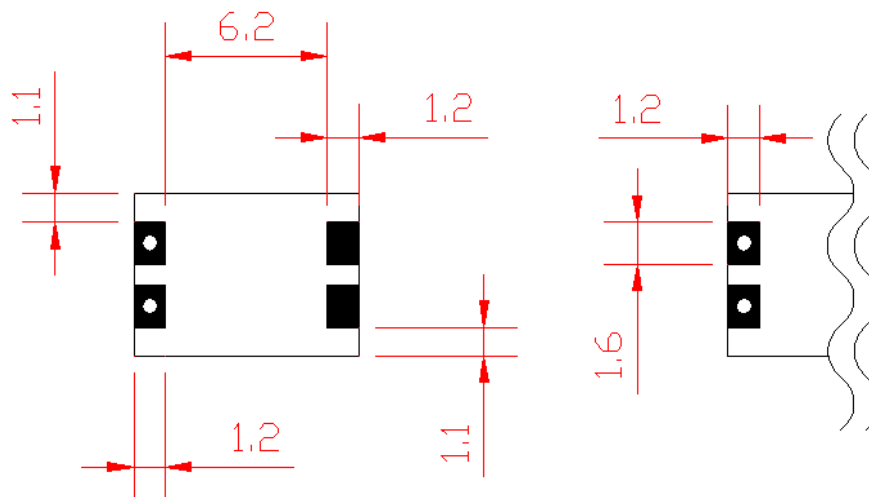
**Table.3 The M-BT-0911-PC Antenna Package Information**

Dimension(mm <sup>3</sup> )	Weight(g)	Material	Packing	Connector
8.6 x 6.2x 3.0	0.4g	PCB	Tape	SMD solder

**Note:**

1. All dimensions are shown in millimeters.
2. The antenna dimension tolerance is  $\pm 0.2\text{mm}$

#### 4. M-BT-0911-PC Antenna PCB Land Pattern


**Fig.5 The M-BT-0911-PC Antenna PCB Land Pattern**
**Note:**

1. All dimensions are shown in millimeters.
2. The antenna footprint dimension tolerance is  $\pm 0.2\text{mm}$

#### 5. Antenna Performance

The antenna efficiency test was by ATL (A Test Lab Techno Corp.). It measurements were taken in the ETS-Lindgren AMS-8500 standards system anechoic chamber. The chamber size is 7m x 4m x 4m and supports test frequencies from 700MHz to 6GHz.

The S11 and VSWR measurements were taken with use Agilent E5071B network analyzer. The testing was performed in free space.

## 5.1 The antenna performance in reference PCB board

### Antenna platform: PCB board

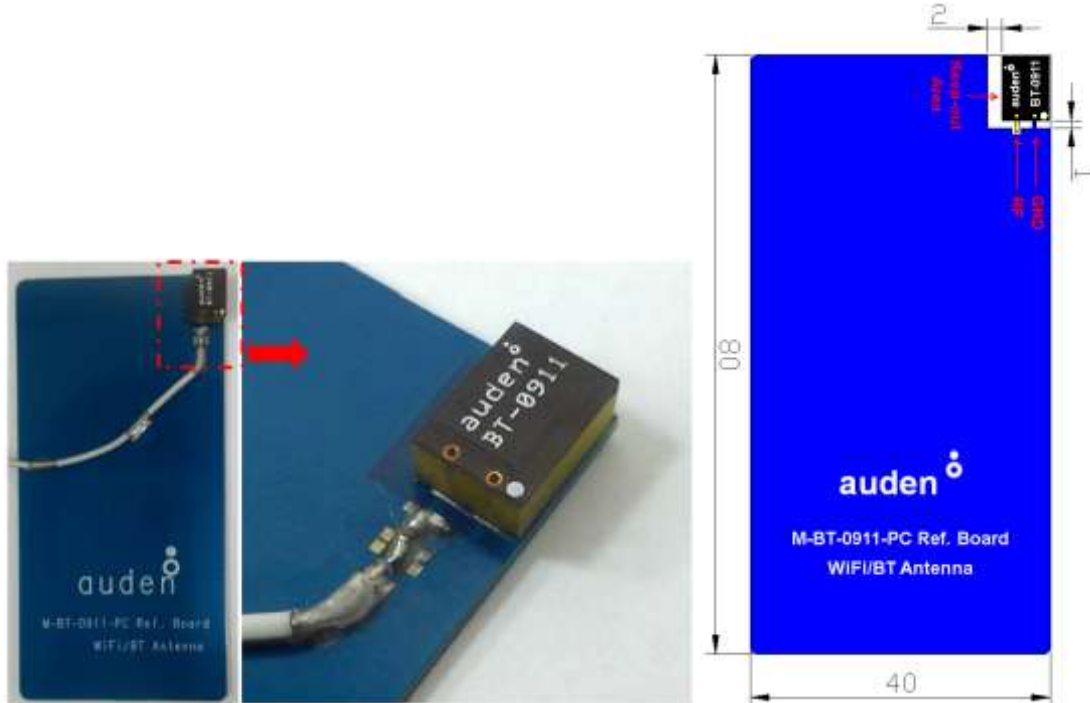
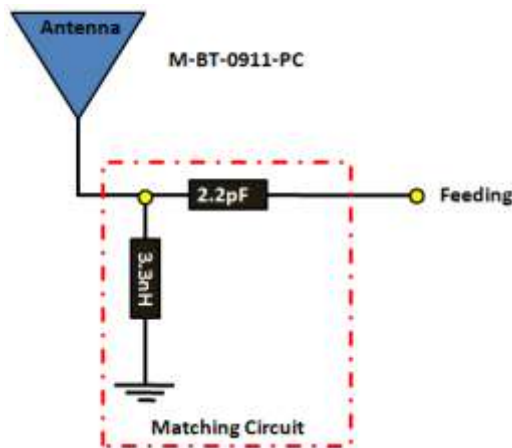


Fig.6 The 3D model of BT antenna in reference board

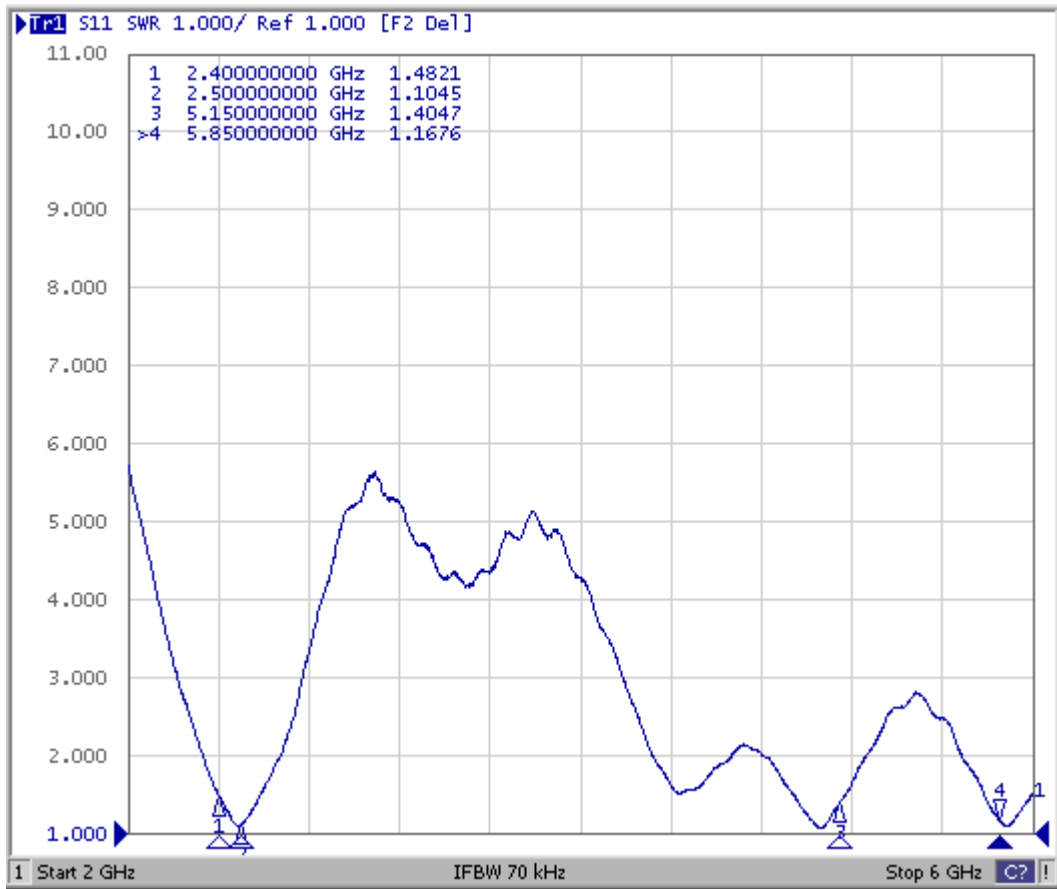
Matching Circuit as below:

P-3.3nH and S-2.2pF



Note:

1. All dimensions are shown in millimeters.
2. Please keep the ground area near the antenna at a distance of at least 1mm and placing the antenna in the edge of PCB board to make sure the antenna can work well.



**Fig.7 The VSWR of the M-BT- 0911-PC antenna on reference board**

**Note: Maker 1: 2.4GHz, Maker 2: 2.5GFHz  
Maker 3: 5.15GHz, Maker 4: 5850MHz,**

**The passive 3D radiation efficiency:**

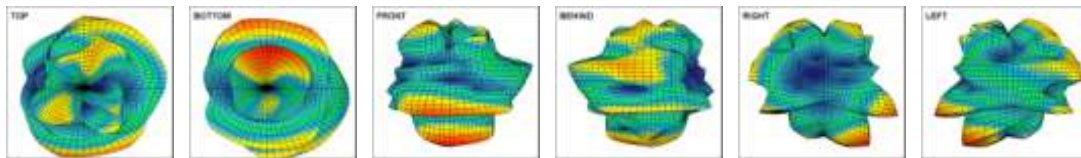
Frequency	2400	2450	2500
3D Avg. Gain (dB)	-2.86	-2.25	-2.56
Peak Gain (dBi)	0.90	1.59	1.28
3D Avg. Eff. (%)	51.71%	59.61%	55.50%

Frequency	5150	5250	5350	5470	5520	5620	5725	5875
3D Avg. Gain (dB)	-2.70	-3.06	-2.99	-2.70	-3.34	-3.69	-3.76	-3.86
Peak Gain (dBi)	2.03	1.57	1.53	1.51	0.16	0.01	-0.40	0.33
3D Avg. Eff. (%)	53.65%	49.44%	50.23%	53.72%	46.36%	42.74%	42.03%	41.08%

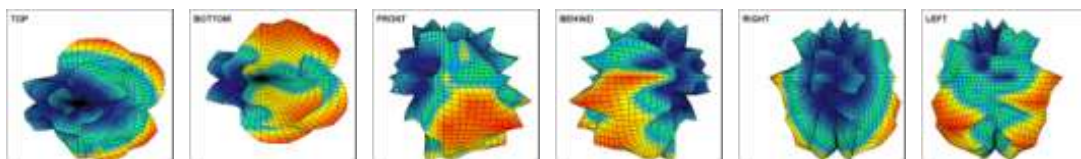
**Fig.8 The passive 3D radiation efficiency of the BT antenna**

## The 3D radiation pattern

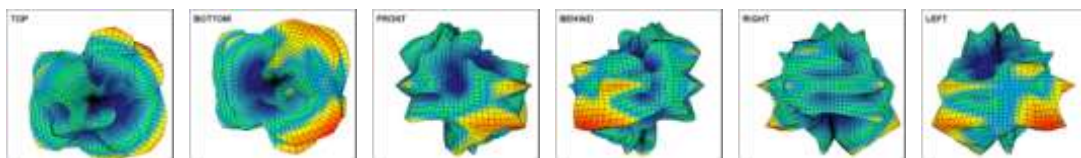
### 2450MHz



### 5150MHz



### 5875MHz



## Acknowledgement


Thank you for purchasing the Auden M-BT-1008-PC BT Antenna. The antenna had been design to speed the overall development process and decrease required development time. We look forward to working with you and helping your products to enter the market of the world.

## Contact Information

Please contact us by the below information if you need any solution of the BT antenna.

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