

Antenna test report

Plate antenna frequency band: 433MHZ

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1. Antenna matching (formerly antenna matching)

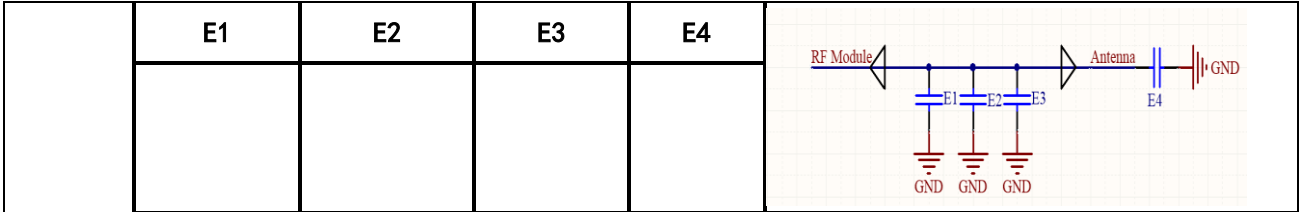


Fig 2 PCBA diagram

Fig 3 Antenna S11 parameters

4.Passive test data:

Freq (MHz)	Effi (%)	Gain (dBi)
430	2.4	-5.17
431	2	-5.47
432	2.65	-5.76
433	2.35	-6.01
434	2.11	-6.31
435	2.88	-6.53
436	2.67	-6.75

5. Test equipment

- **Measuring instruments:** microwave anechoic chamber, network analyzer, standard antenna.
- **Microwave anechoic chamber description:**

This is the microwave anechoic chamber set up in Shenzhen by our company. This microwave anechoic chamber belongs to a far-field measurement system. The size of the anechoic chamber is 7.0 meters x4.0 meters x3.0 meters, and the size of the quiet zone (Quiet zone) is 15 cm x15 cm x15 cm.

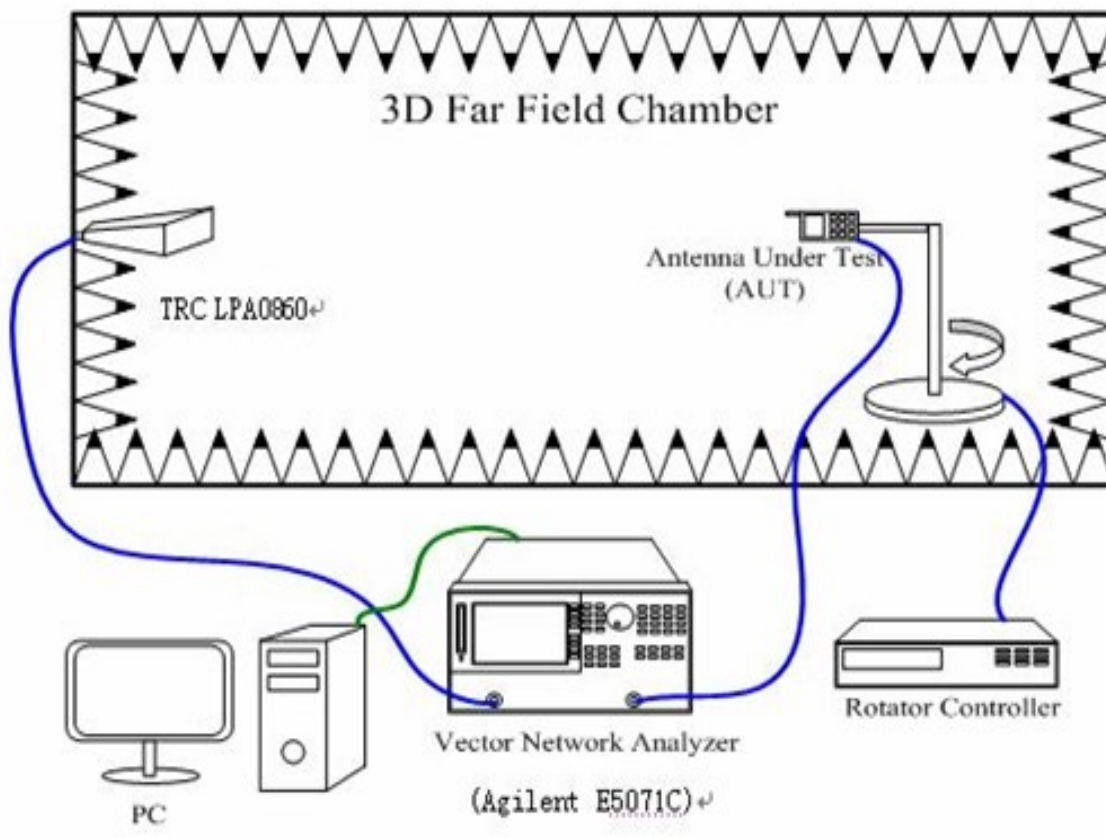


Fig. 4 Instrument setup inside the microwave anechoic chamber

Figure 4 illustrates the instrument setup and network analyzer connection configuration in the microwave anechoic chamber. The transmitting antenna (TRC LPA0860 800MHz~6GHz) is positioned 1.35 meters from the anode under test (AUT), which is mounted on a rotating platform. By adjusting the platforms rotation angle, both preliminary and precise measurements can be conducted on the anode under test.

The antenna to be tested is placed on the rotating table, and the 360-degree field strength data of each plane (ZY plane and ZX plane) are measured. Then the antenna to be tested is placed on the rotating table

The line is replaced with a standard dipole antenna (the model of the standard dipole antenna used in this anechoic chamber is TRC AD series dipole antenna 800MHz~2500MHz) to measure its 360-degree field strength data as the standard value of conversion gain. The gain value and direction chart of the antenna under test can be obtained by means of Equation 1.

$$G_{AUT} = G_{stand} + P_{AUT} - P_{stand}$$

G_{AUT} : Gain of AUT

G_{stand} : Gain of Standard Gain Antenna

P_{AUT} : Measured Power of AUT

P_{stand} : Measured Power of Standard Gain Antenna