



Shenzhen Zhongcheng Wireless Technology Co., Ltd

Shenzhen unity wireless technology co., ltd

Address: Room 601-603, Building B, Shenzhen Qianwanhard Technology
Industrial Park, Nanchang Community, Xixiang Street, Baoan District, Shenzhen
Tel: 0755-23285621 Fax: 0755-23285621

Antenna Test Report

Customer name: Fumao

Product model: BM09V-900Mhz

Antenna band: 900Mhz

Tabulation: Wen Caihui TEL: 0755-23285621	RF Engineer: Wen Caihui TEL: 0755-23285621	
Date: 2024-7.22		

Debugging resume:

Date of Revision	Revised content	Revised by	Original version
2024.7.22	Optimize routing	Wen Choi Hui	V5.0

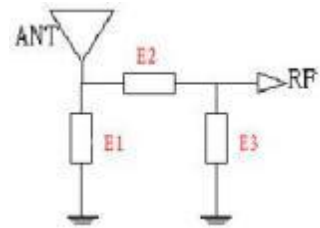
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1. Antenna matching (original antenna matching)

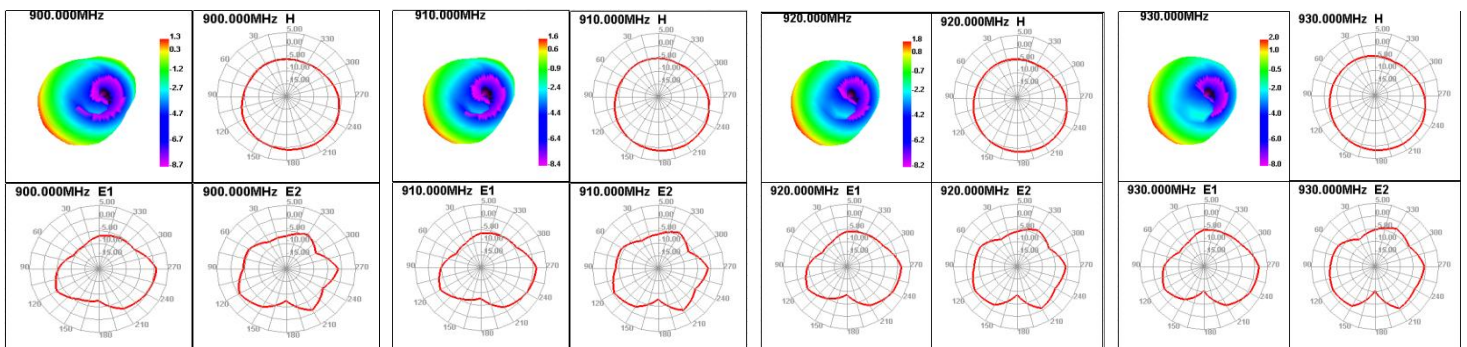
E1	E2	E3
N/A	0 ohms	N/A



RX-900M antenna passive test data: viewing screen

Freq (MHz)	Effi (%)	Gain (dBi)
900	47.21	1.26
910	51.48	1.57
920	55.54	1.81
930	58.84	2.04

Antenna pattern:



TX-900M antenna passive data : Camera

Freq (MHz)	Effi (%)	Gain (dBi)
900	48.44	0.34
910	53.46	0.66
920	58.34	1.15
930	59.63	1.64

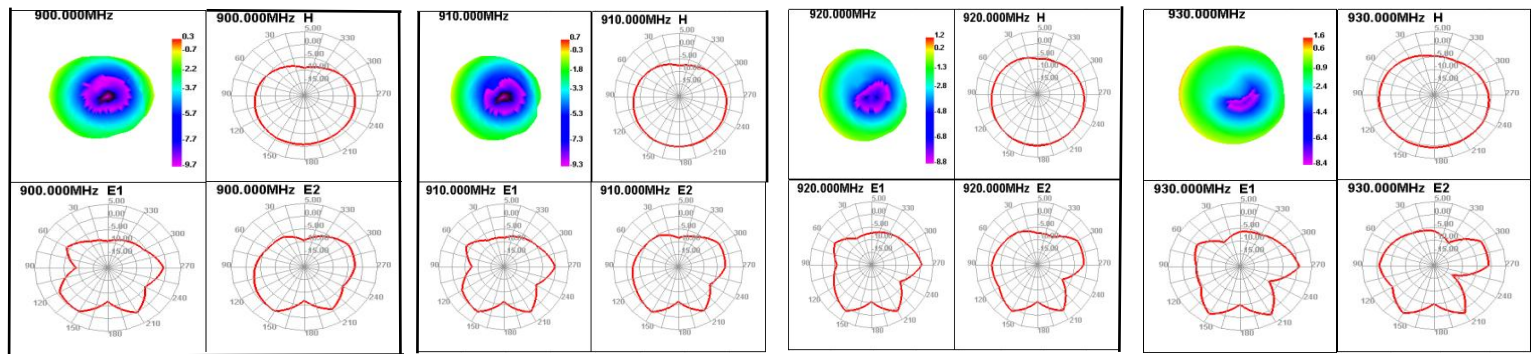


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Antenna pattern:



Antenna placement position:



Test Equipment

- Measuring instruments: microwave darkroom, network analyzer, standard antenna.
- Microwave darkroom Description:

This is the microwave anechoic chamber set up by our company in Shenzhen. This microwave anechoic chamber belongs to a far-field measurement system. The size of the anechoic chamber is 7.0 m x 4.0 m x 3.0 m, and the size of the quiet zone (Quietzone) is 15 cm x 15 cm x 15 cm.

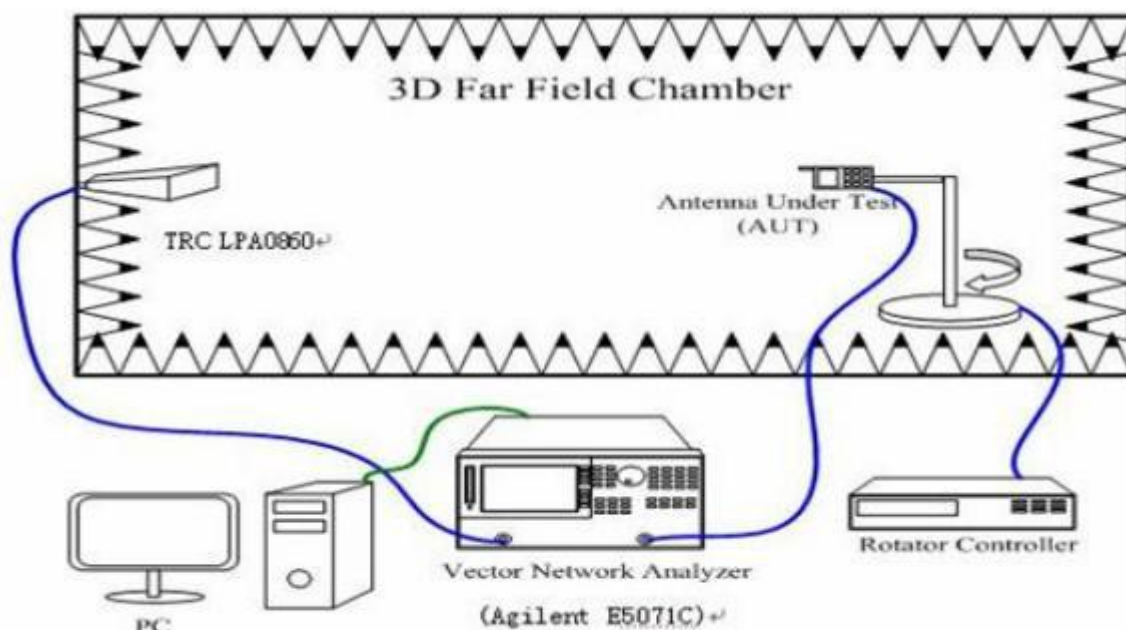


图. 1. 微波暗室内仪器设置

Figure 1 shows the instrument settings in the microwave dark room and the connection diagram of the network analyzer. The distance from the transmitting antenna (the model of the transmitting antenna used in this dark room is TRC LPA0860 800MHZ-6GHZ) to the antenna to be tested (AUT) is 1.35 meters. The antenna to be tested is placed on a rotating platform. By controlling the rotation angle of the turntable, the antenna to be tested can be roughly and more accurately measured.

The antenna to be measured 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 sky to be measured

The line is replaced with a standard dipole antenna (the standard dipole antenna model used in this dark room is TRC AD series dipole antenna 800MHz ~ 2500MHz), and its 360-degree field strength data is measured as the conversion gain standard value, and the gain value and pattern of the antenna to be measured can be obtained through the conversion 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