

Shenzhen unity wireless technology co., ltd

Add: 601-603, Building B, Qianwan Hard Science and Technology Industrial Park, Nanchang Community, Xixiang Street, Baoan District, Shenzhen Tel:0755-23285621 Fax: 0755-23285621

# Antenna test report

Manufacturer: Shen Zhen LoveKa Technology Co., LTD

Address of Manufacturer: 5th Floor of West, 6 Building, Tianfu'an Industrial Park, Huangmabu

residential committee, Hangcheng Road, Bao'an District, Shenzhen Guangdong, China

**Product model:** 

Antenna frequency band :433MHZ

1. Antenna matching (original antenna matching)

E1	E2	E3	E4	E4 RF Module ← E4	E2 Antenna
				E3	E1
				1	

#### 2. Antenna installation picture



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3、Antenna passive S11 parameters



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#### 4. Passive test data:

Freq	Effi	Gain
$(MH_Z)$	(%)	(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

#### い INITY WIRELESS

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- **Measuring instruments:** microwave darkroom, network analyzer, standard antenna.
- Microwave darkroom Description: This is the microwave darkroom set up by our company in Shenzhen, which belongs to a set of far-field measurement system. The size of the darkroom is 7.0 m x4.0 m x3.0 m, and the size of the quiet zone is 15 cm x15 cm.



FIG. 1 shows the instrument setup in the microwave darkroom and the connection diagram of the network analyzer. The distance between the transmitting antenna (the model of transmitting antenna used in the darkroom is TRC LPA0860 800MHZ-6GHZ) and the antenna to be tested (AUT) is 1.35m. The antenna to be measured is placed on a rotating platform and can be measured roughly and accurately by controlling the rotating Angle of the rotating table.

The antenna to be measured is placed on the rotating table, and the 360-degree field intensity data of each plane (ZY plane and ZX plane) are measured. Then replace the antenna to be measured with a standard dipole antenna (the standard dipole antenna model used in this darkroom is TRC AD series dipole antenna 800MHz~2500MHz) and measure its 360-degree field intensity data to convert the standard gain value. The gain value and direction diagram of the antenna to be measured can be obtained through the conversion of formula 1.

$$G_{AUT} = G_{stand} + P_{AUT} - P_{stand}$$
  
 $G_{AUT}$ : Gain of AUT  
 $G_{aux}$ : Gain of Standard Gain Antenna  
 $P_{AUT}$ : Measured Power of AUT  
 $P_{thand}$ : Measured Power of Standard Gain Antenna