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SPECIFICATION FOR APPROVAL

客户名称 Customer Name	顺生电子		
客户项目名 Customer Project Name	FPC antenna	顺达成项目名 SDC Project Name	FPC antenna
客户编码 Customer P/N		顺达成料号 SDC P/N	WZ-5494B-A
频段 Band	WIFI2.4G		
版本号 Version	A0		
设计人信息/Designer Information			
射频工程师 RF Engineer	杨永辉	研发主管 R&D Diretor	符学荣
结构工程师 ME Engineer	李瑶娜		

审批/ Approval				客户批准/Customer Approval	
	制作 Prepared By	审核 Checked By	批准 Approval By	审核 Checked By	批准 Approval By
签章 Signature	李瑶娜	杨永辉	符学荣		
日期 Date	2024.06.21	2024.06.21	2024.06.21		

修订履历/Change Log				
版本 Version	修订内容 Change Description	责任人 Person in Charge	核准 Approval By	日期 Date

I. Pattern Measurement :

(a) **Instruments** : anechoic chamber, network analyzer, standard gain antenna.

(b) **chamber description** :

(1) The anechoic chamber is a far-field measurement system with size of 3.25M*2.84M*6.4M. The quiet zone region is 44cm*44cm*44cm at frequency range of 2.4GHz in the center of the rotator.

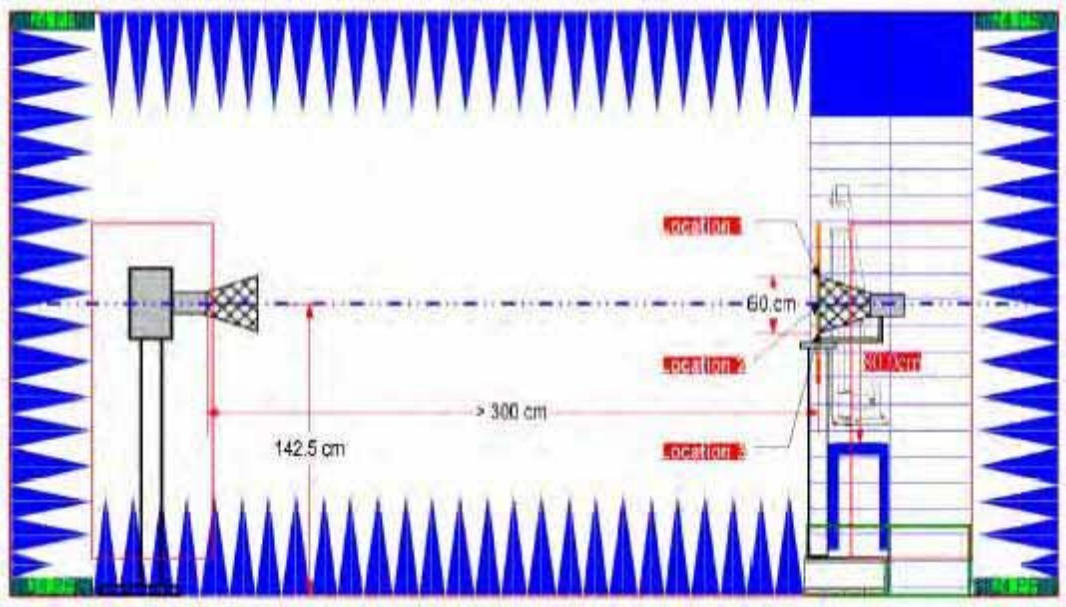


Fig.1. The interior components of the anechoic

(2) Fig. 1. shows the interior components of the anechoic chamber. The antenna standard antenna as probe and antenna under test is 3M. The antenna under test is fixed on a step rotator. We can control the rotating angle for accurate or rough measurement.

(3) While we measure the radiation patterns by rotating AUT with 360 degrees and repeat again by replacing the AUT with the standard gain antenna under test, we compare both data and using a formula to obtain the

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

G_{AUT} : Gain of AUT

G_{stand} : Gain of Standard Gain Antenna

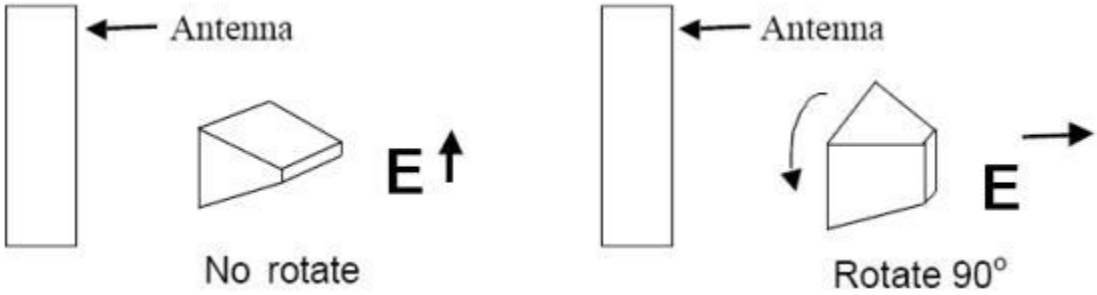
P_{AUT} : Measured Power of AUT

P_{stand} : Measured Power of Standard Gain Antenna

(4) Gain of AUT. The standard gain antenna is a gain horn(SG-430 1.7GHz ~ 2.6GHz).

(5) The planes defined in the Fig. 4 which we want to measure are H(X-Y) and E(X-Z) planes. The vertical or horizontal polarization's power is measured by rotating the antenna probe to 0 degree or to 90 degree shown in Fig. 3, respectively. While we combine both vertical and horizontal power, we obtain total power.

(6) From the total power in three basic planes(H, and E), we can analyze the performance of the antenna is good or not.



(a) Antenna Probe at 0 degree as a horizontal polarization.

(b) Antenna Probe at 90 degree as a vertical polarization.

Fig. 3. The definition of vertical and horizontal polarization.

(c) Plane definition :

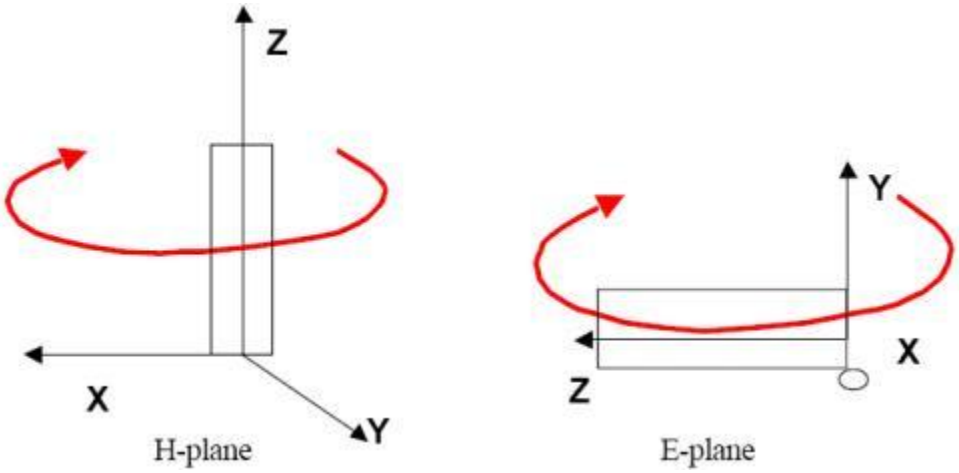
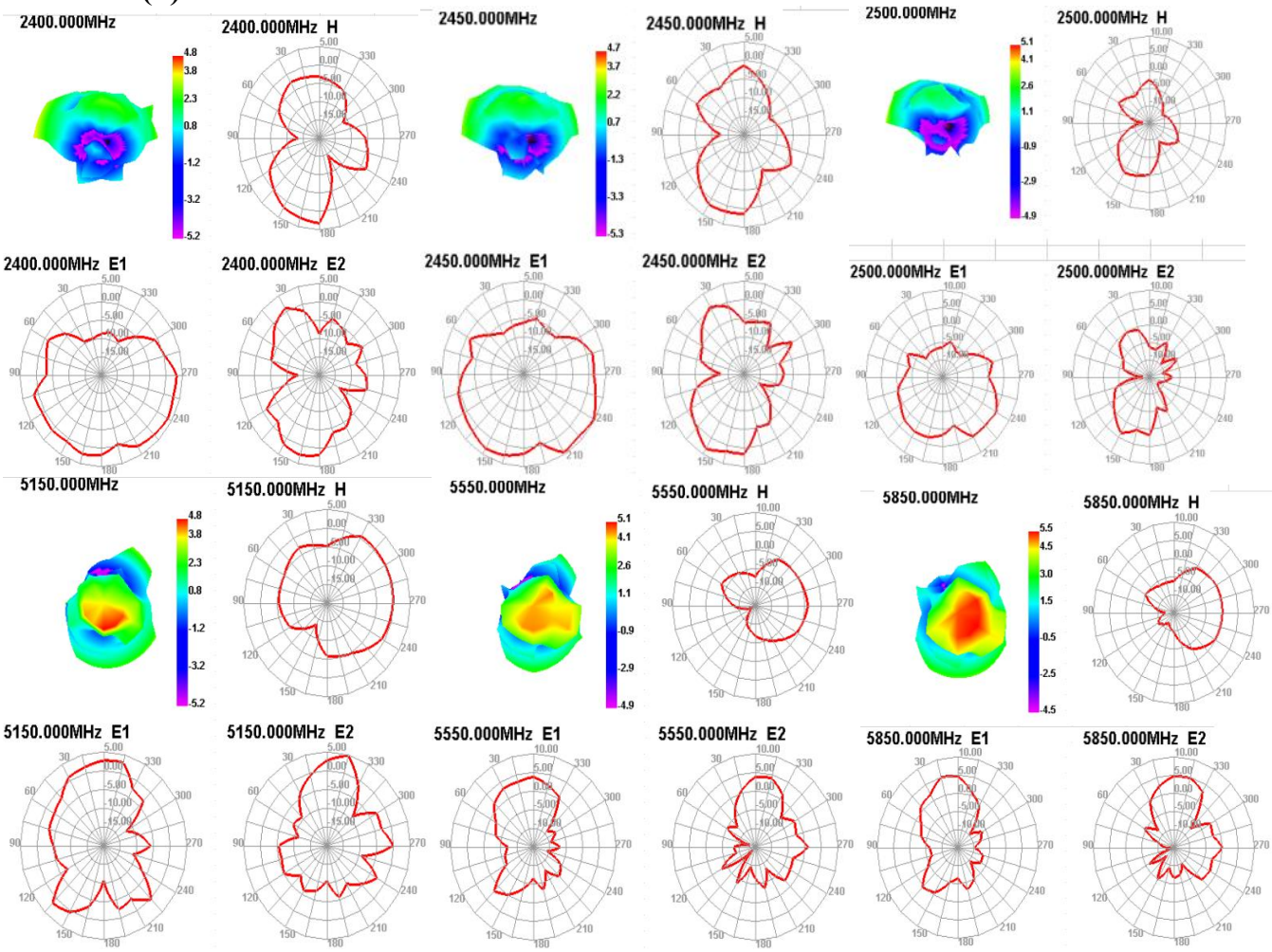


Fig. 4. The plane definition ;H-Planes and E-Planes.

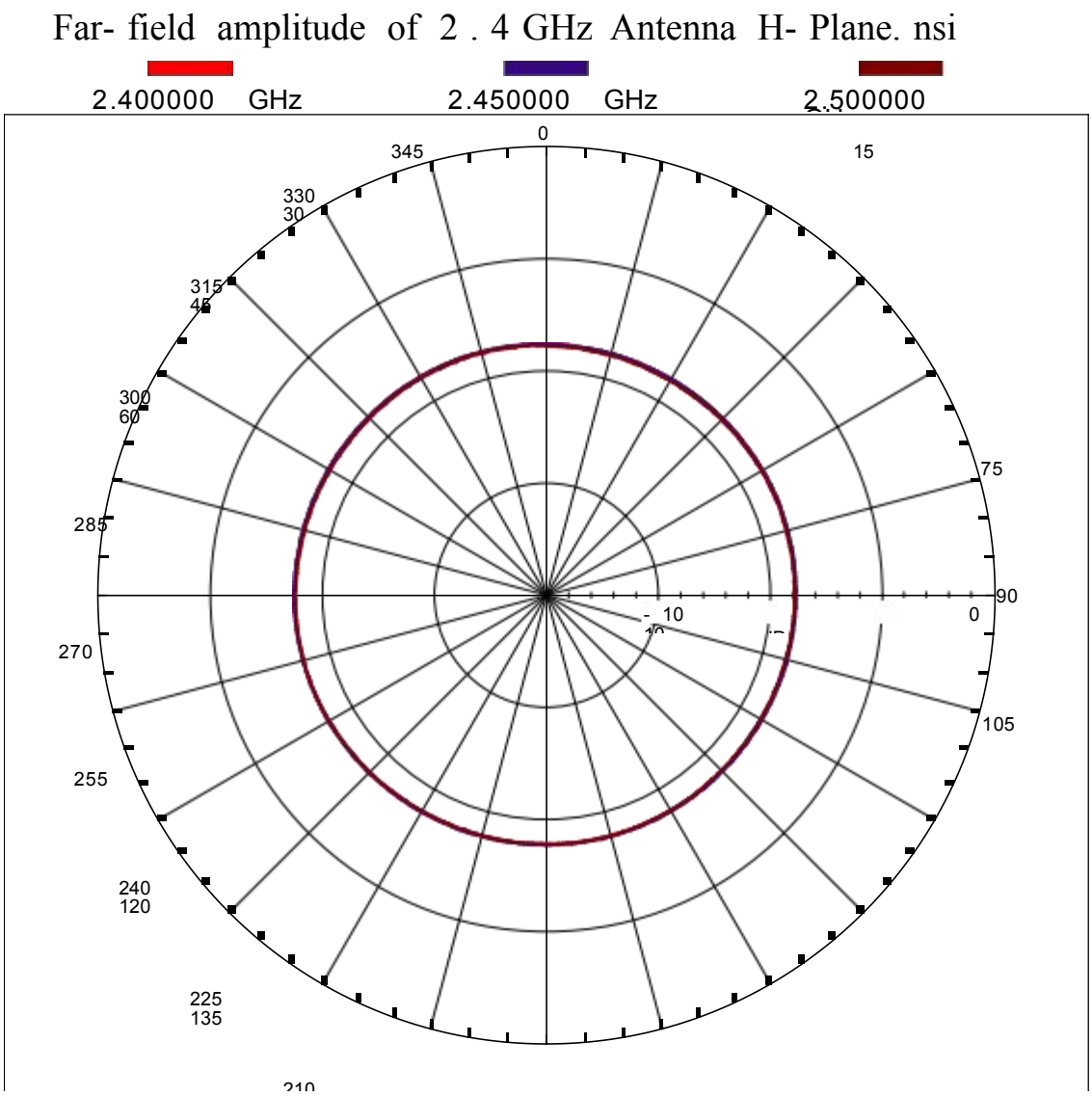
II. Gain and Radiation Pattern :

(a) H-PALNE :

(1) Gain



(2) Radiation Pattern



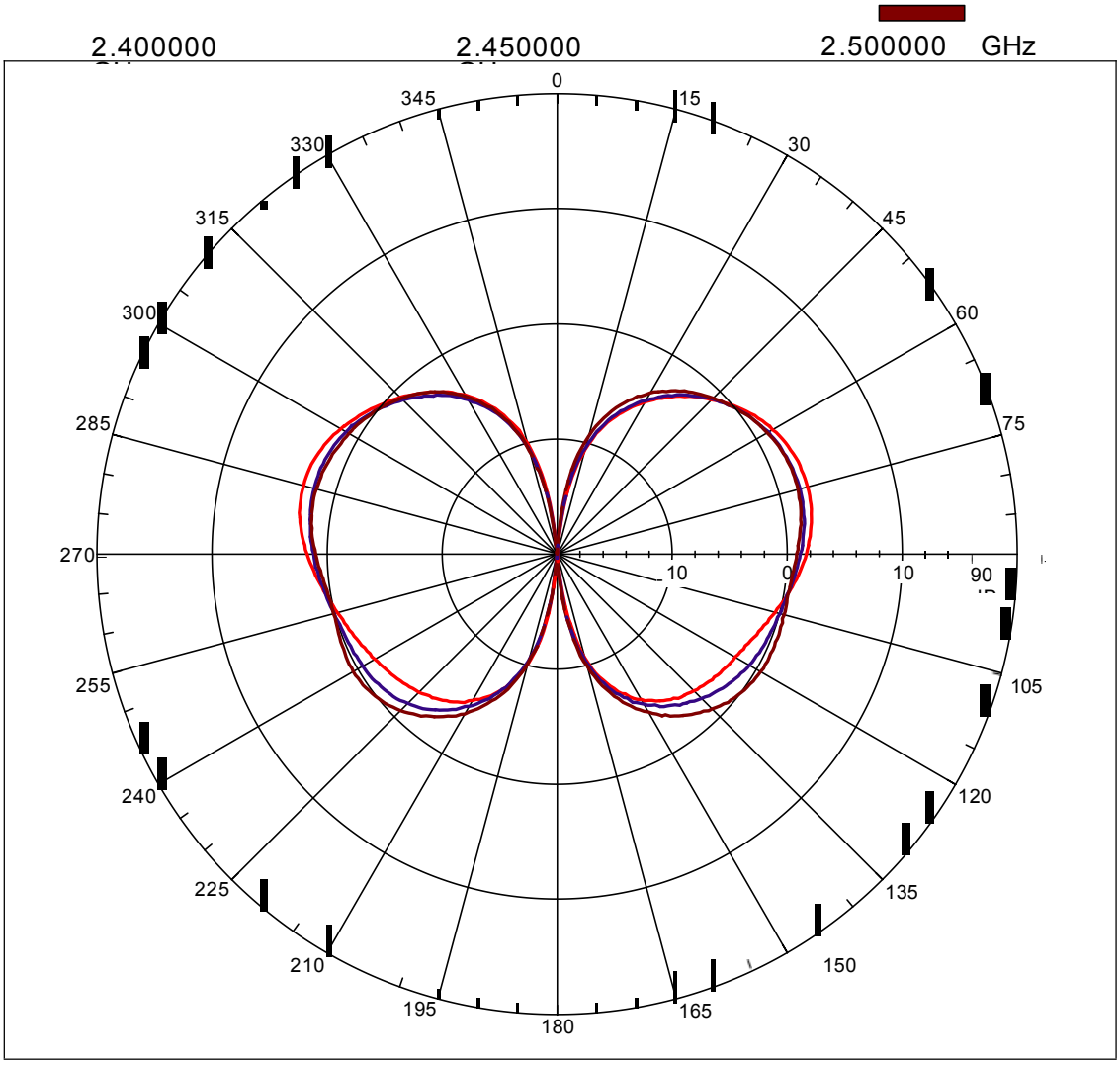
(b) E-Plane

(1) Gain

Frequency / Gain(dBi)	2.4GHz	2.45GHz	2.5GHz
Peak Gain	2.81	1.86	1.70
Avg Gain	-2.534	-2.522	-2.236

(2) Radiation Pattern

Far- field amplitude of 2 . 4 Antenna E- Plane. nsi



Antenna pattern