

Testing Report

Applicant Name: Shenzhen Xinlingfei Technology co., LTD.

Name: Insignia Fire TV Remote Replacement with Voice

Control NS-RCFNA-21

Sample Model: XLFRMTFNA21-01

Reference Standard: *GB/T 9410-2008; ANSI/IEEE Std 149-1979*

Issue Date: 2023.02.07

Engineer: Simon	Date: 2023/02/07	
Auditor: Navy	Date: 2023/02/07	
Approver: Navy	Date: 2023/02/07	

Version

Version No.	Date	Description	Formulate	Approval
A0	2023.02.07	For the first time, formulate	Simon	Navy

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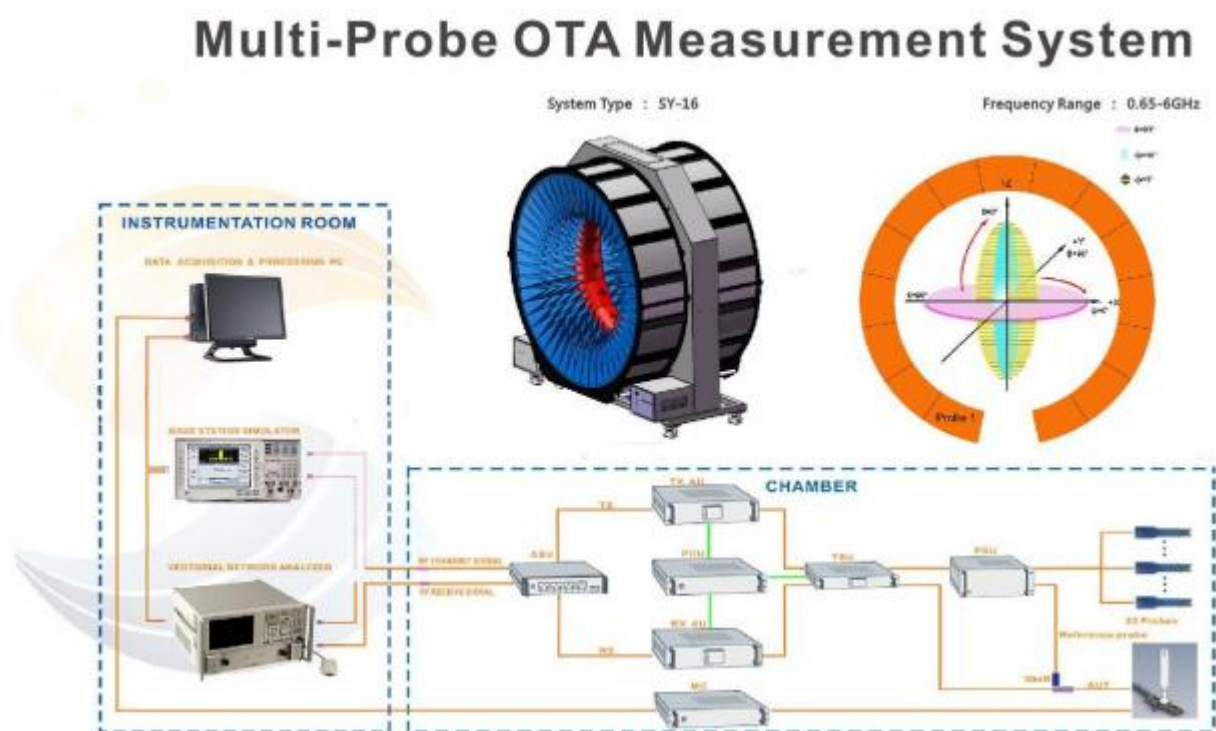
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1.General Information

1.1 General information of testing institutions

Manufacturer Name	ShangHai Hearten Intelligent Technology Co., Ltd
Address	No. 800, Naxian Road, Zhangjiang High-tech Park, Pudong New Area, Shanghai
Tel	13917338972
E-mail	zhangbh@heartenyun.com
Equipment	No. 800, Naxian Road, Zhangjiang High-tech Park, Pudong New Area, Shanghai

1.2 Testing principle



1.3 Test equipment

Equipment	Model No.	Serial No.	Manufacturer	Calibration date	Next calibration date
16 probe microwave chamber	3*3*2.5	HT-LAB-RF-01	SUNYIELD	2021.3.15	2023.3.14
Network Analyzer	E5071C	HT-LAB-RF-02	Agilent	2022.5.13	2023.5.12

1.4 Test environment

Temperature	23.8℃
Humidity	59%RH
Pressure	100.03kPa

1.5 Statement

- (1) The test results in the report are only applicable to the tested samples and the tested samples work under the environment described in the report.
- (2) Only ShangHai Hearten Intelligent Technology Co., Ltd have the right to modify the report, and the modification information shall be annotated in the revision form.
- (3) Any objection to this report shall be raised within 30 days after formal confirmation of the report.
- (4) This report is invalid if there is any evidence that the sample information provided is falsified.
- (5) The report is invalid without the signature of the auditor and approver.

2.Sample Information

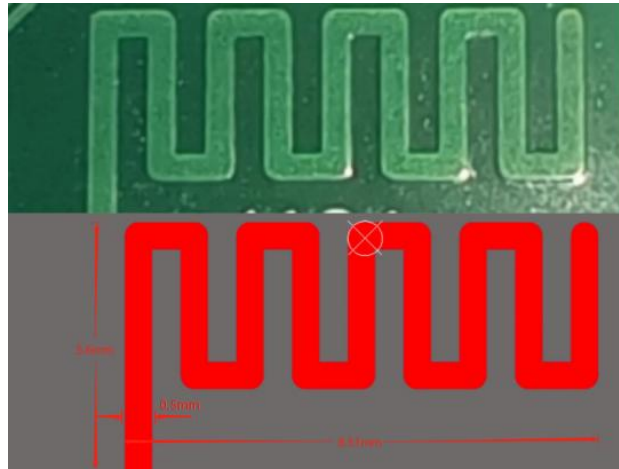
2.1 Client information

Applicant Name:	Shenzhen Xinlingfei Technology Co., Ltd
Address	206, Building B, Zhonghui Building, Tianxin Industrial Zone, Guxing Community, Xixiang Street, Bao'an District, Shenzhen
Contacts	Navy He
Tel	19805001412
E-mail	Navy@koomoer.com

2.2 Description of EUT(S)

Product Name	Insignia Fire TV Remote Replacement with Voice Control NS-RCFNA-21
Sample Model	XLFRMTFNA21-01
Antenna Size	8.51*5.6mm
Antenna Type	PCB antenna
Serial No.	/
Test Item	Antenna gain; Efficiency; Radiation pattern
Frequency Range	2402MHz-2480MHz
Received Date	2023.01.13
Test Date	2023.02.06
Remark	The length of the RF cable is 31mm

2.3 EUT appearance

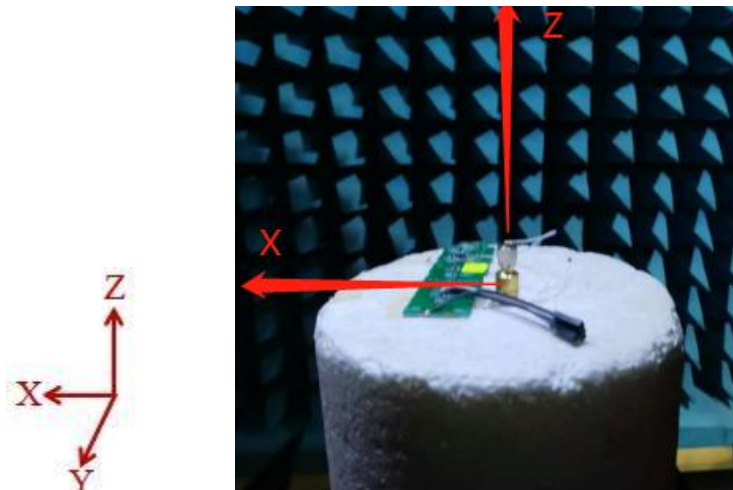


2.4 DUT setup photo of free space OTA testing

Planform



Front view



3. Test Results

3.1 Test standard

Name	Parameter	Method	Standard no.
Mobile communication antenna	Antenna gain	Generic specification for antennas used in the mobile communications	GB/T 9410-2008
	Radiation pattern		
Antenna	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-1979
	Gain and directivity		

3.2 Test uncertainty

The uncertainty was calculated on the basis of the GUM published by ISO, using the inclusion factor of K=2 and the 95% confidence level to express the extended uncertainty.

Item	Uncertainty
Antenna gain	$\pm 1\text{dB}$
Radiation efficiency	$\pm 10\%$

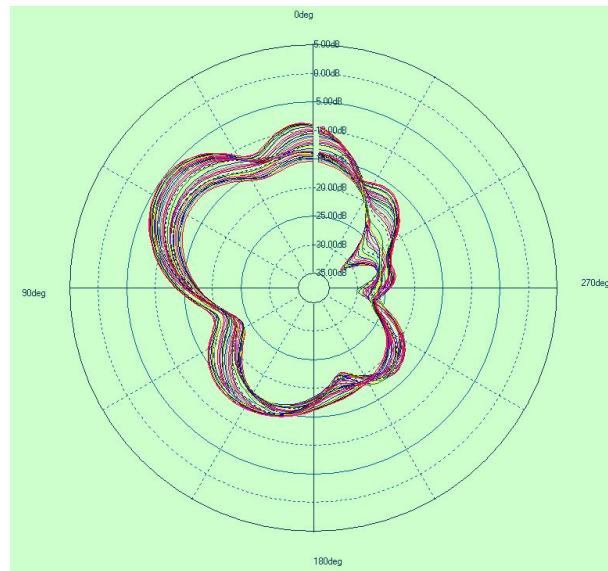
3.3 Test data

3.3.1 Typical free space efficiency and gain

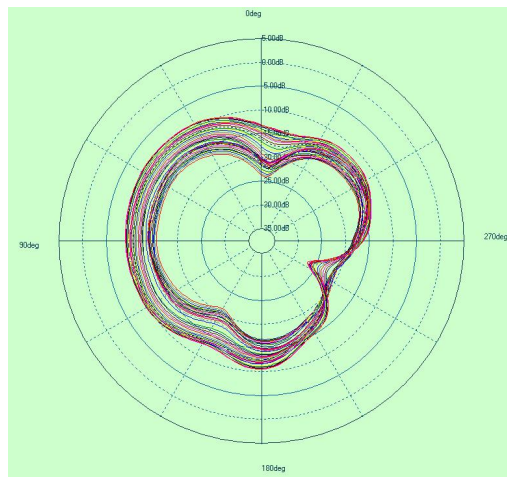
Frequency/MHz	2402	2410	2420	2430	2440	2450	2460	2470	2480
Peak Gain/dBi	-10.5	-10.1	-9.8	-9.5	-8.77	-8.1	-7.6	-7	-6.7
Efficiency/%	2.18	2.4	2.5	2.7	3.1	3.29	3.53	3.9	4.05

3.3.2 Typical free space radiation pattern

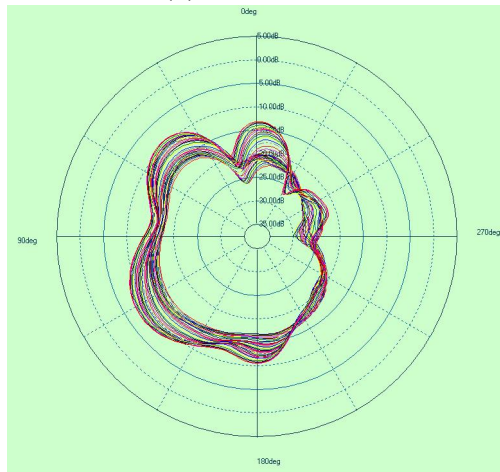
(1) X-Y Plane:



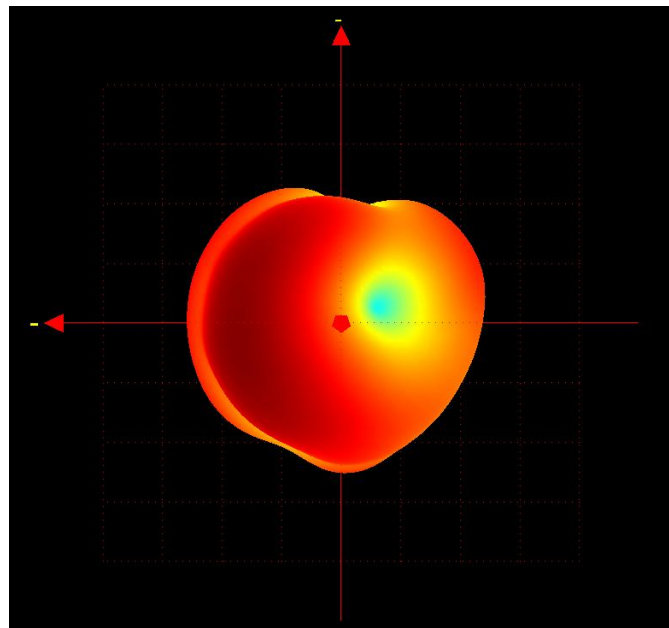
(2) X-Z Plane:



(3) Y-ZPlane:



(4) Typical Free Space 3D Radiation Pattern at 2.44GHz:



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