Testing Report

Customer Name: Shenzhen Funpower General Technology Co.,Ltd

Product Name: Remote Control Transmitter

Sample Model: FT0309HD

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

Issue Date: 2022.11.25

Engineer:	Jackson	Date:	2022.11.16
Auditor:	Eason	Date:	2022.11.25
Approver:	Aaron	Date:	2022.11.25

Version

Version No.	Date	Description	Formulate	Approval
A0	2022.11.25	For the first time, formulate	Jackson	Eason

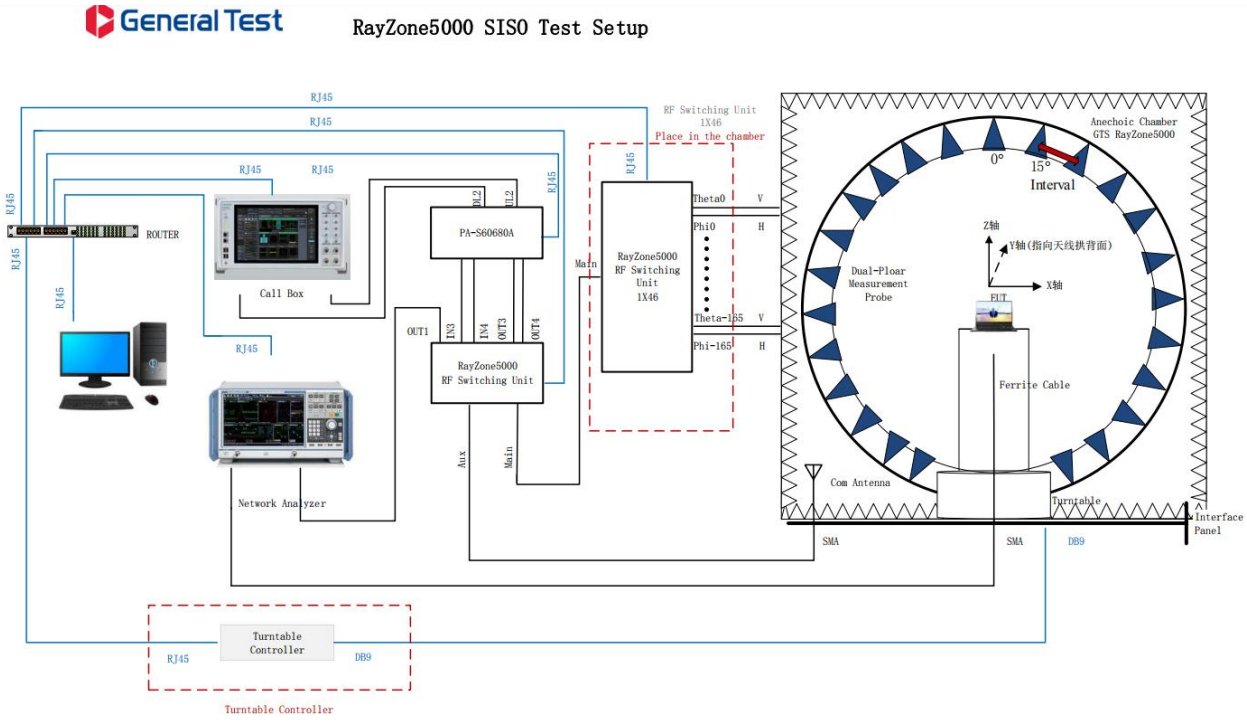
Contents

1.General Information

1.1 General information of testing institutions

Name	Shenzhen RFI-LAB Communication Technology Co., Ltd.
Address	10/F A, Lingyun Bld, Liufang Road, Baoan District, Shenzhen
Tel	13682621346
E-mail	rfi-lab@tech-now.com
Equipment	All the equipment used in the report is fixed in Zone B, West Side of 1/F, Building 1, Tingwei Industrial Park, No.6 Liufang Road, Bao 'an District, Shenzhen

1.2 Testing principle



1.3 Test equipment

Equipment	Model No.	Serial No.	Manufacturer	Calibration date	Next calibration date
OTA Test System	RayZone-5000	RFI-LAB-RF-D00	GTS	2021.3.15	2023.3.14
Network Analyzer	E5071C	RFI-LAB-RF-A02	Agilent	2022.5.13	2023.5.12
Network Analyzer	E5071C	RFI-LAB-RF-D01	KEYSIGHT	2022.5.13	2023.5.12

1.4 Test environment

Temperature	24.5℃
Humidity	58%RH
Pressure	100.13kPa

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 Shenzhen RFI-LAB Communication 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

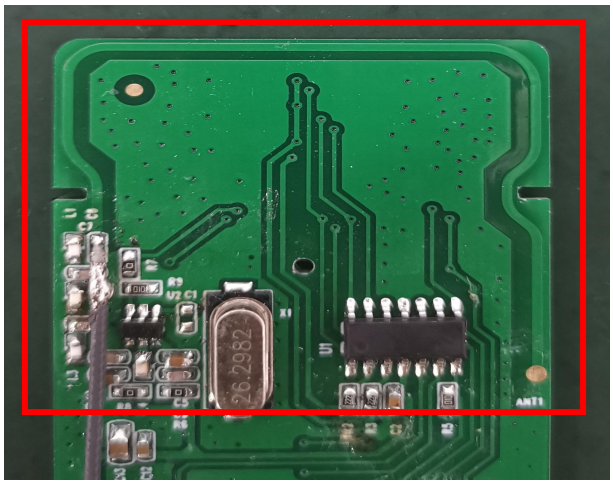
2.1 Client information

Name	Shenzhen Funpower General Technology Co.,Ltd
Address	ROOM 201B, Habor Venture Building, No.1041 Houhai Avenue, Shekou, Nanshan District, Shenzhen City, PRC.
Contacts	Simon Chen
Tel	13823536575
E-mail	simon_chen@szfunpower.com
Manufacturer	Shenzhen Funpower General Technology Co.,Ltd

2.2 Description of EUT(S)

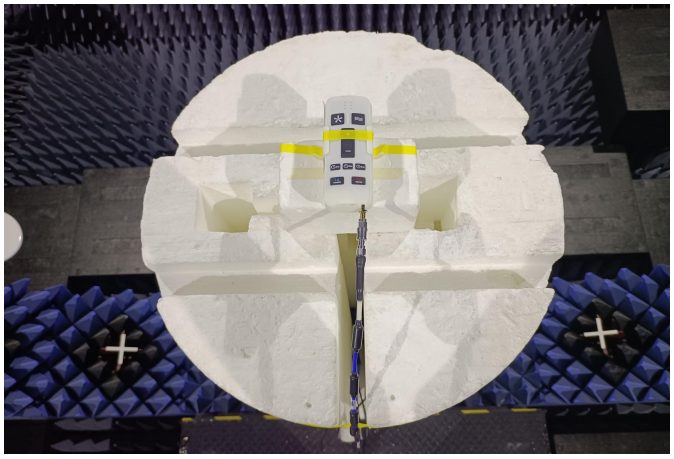
Product Name	Remote Control Transmitter
Sample Model	FT0309HD
Size	/
Serial No.	/
Test Item	VSWR; Antenna gain; Efficiency; Radiation pattern
Frequency Range	428-438MHz
Received Date	2022.11.14
Test Date	2022.11.16
Remark	The length of the RF cable is 75mm

2.3 EUT appearance

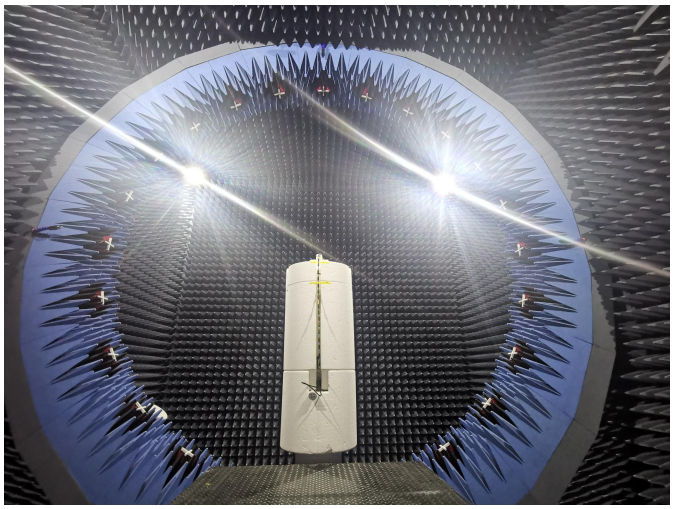


2.4 DUT setup photo of free space OTA testing

Planform



Front view



3.Test Results

3.1 Test standard

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

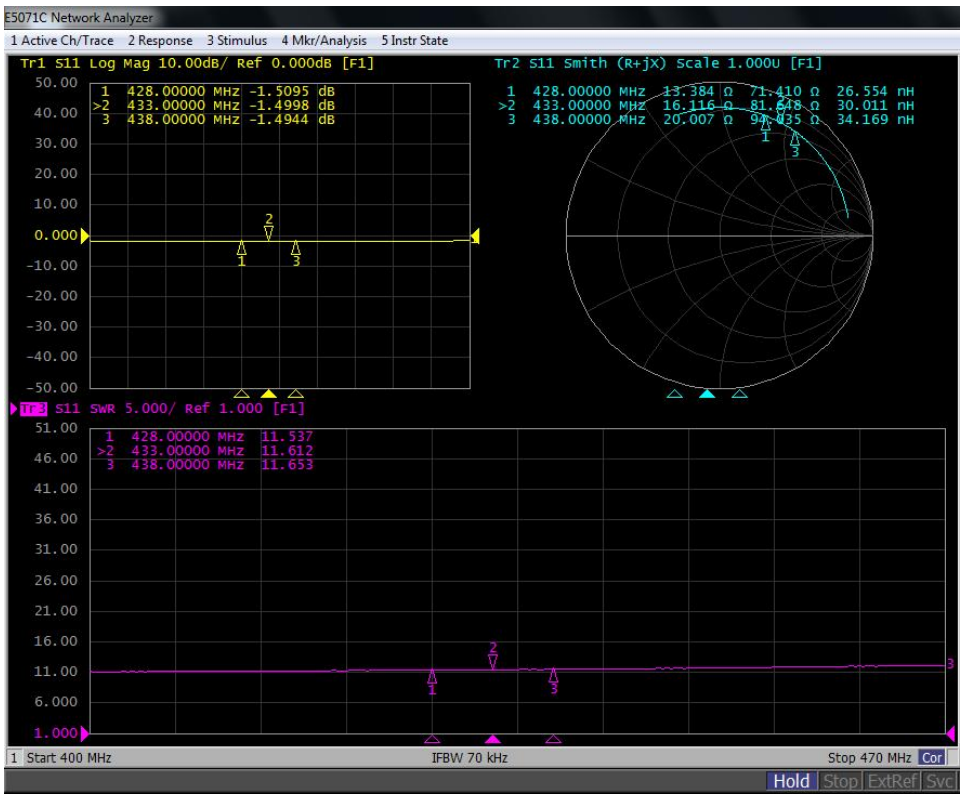
3.2 Test uncertainty

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
VSWR	±0.3
Antenna gain	±0.72dB
Radiation efficiency	±0.72dB

3.3 Test data

3.3.1 S11 parameters



3.3.2 S11 test data

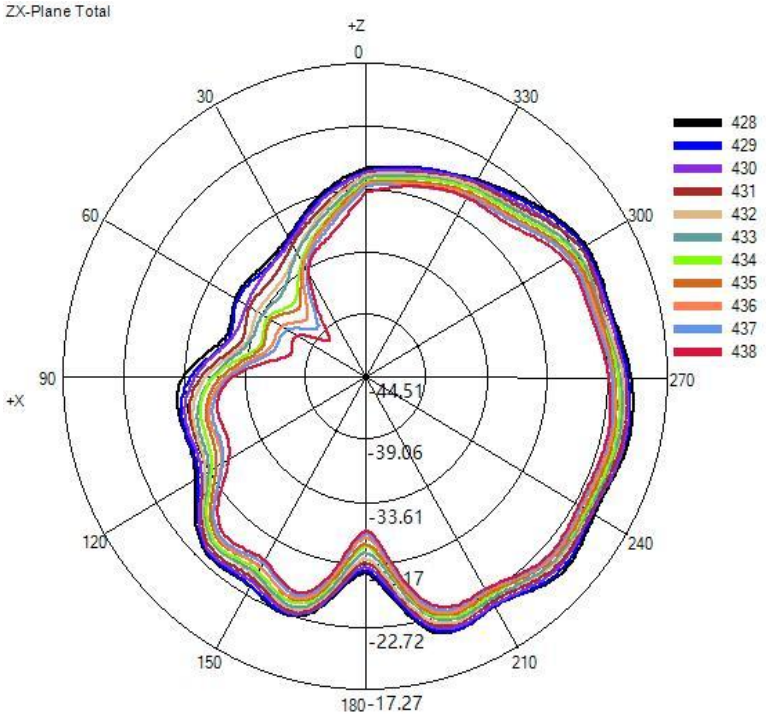
Frequency/MHz	428	433	438
VSWR	11.537	11.612	11.653

3.3.3Typical free space efficiency and gain

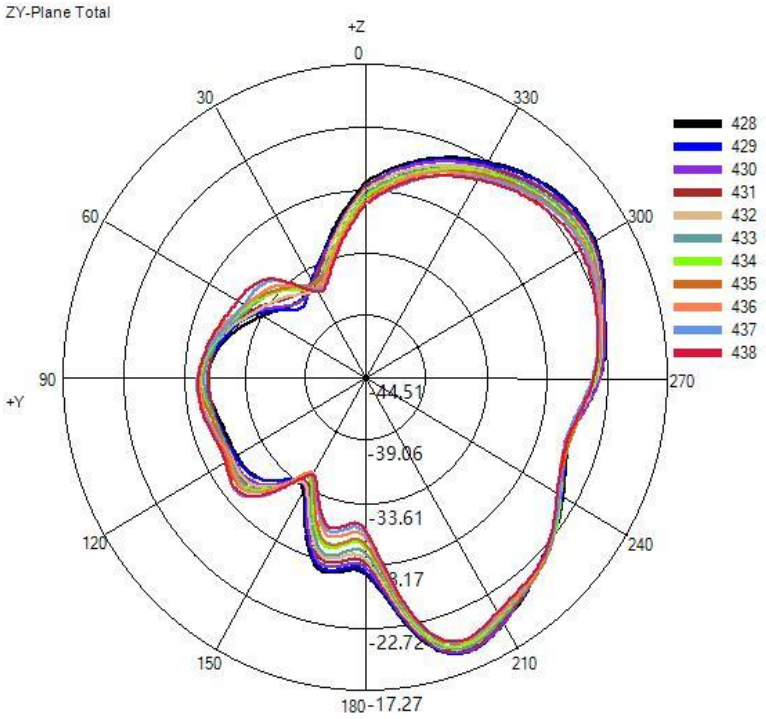
Frequency/MHz	428	429	430	431	432	433	434	435	436	437	438
Peak Gain/dBi	-17.38	-17.54	-17.52	-17.75	-17.80	-17.85	-18.01	-18.15	-18.19	-18.25	-18.37
Efficiency/%	0.46	0.44	0.43	0.41	0.40	0.39	0.38	0.36	0.35	0.34	0.33

3.3.4 Typical free space radiation pattern

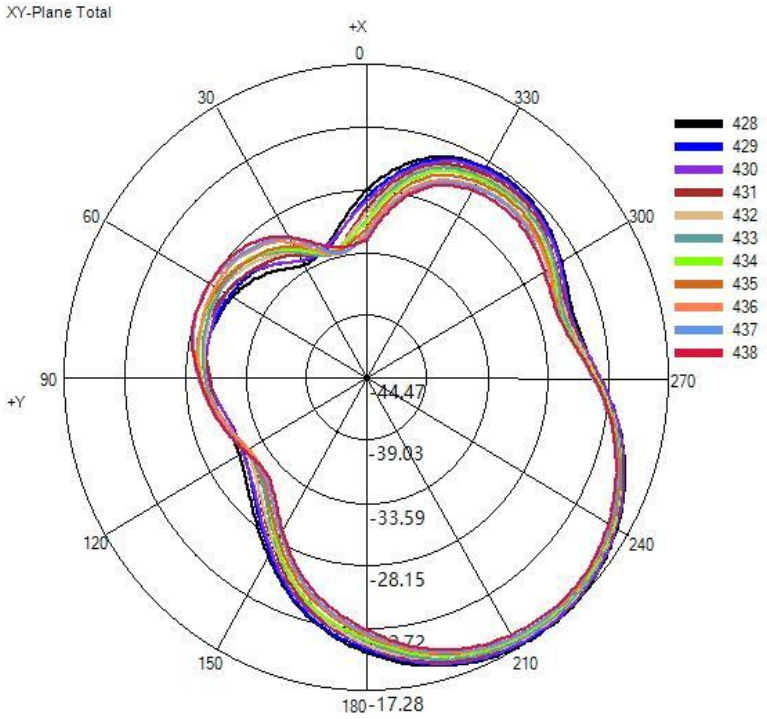
(1) X-Z Plane:



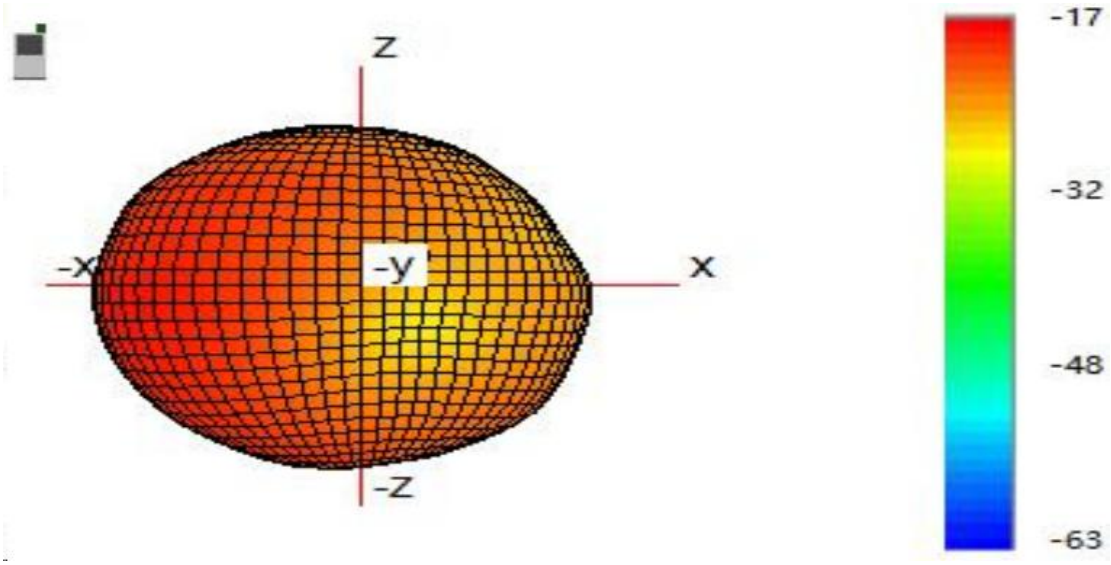
(2) Y-Z Plane:



(3) X-Y Plane:



(4) Typical Free Space 3D Radiation Pattern at 433MHz:



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