

SPECIFICATION

SHEET FOR APPROVAL

(Revision: R: A1)

	CUSTOMER(客户名称)	Hesung Innovation Limited	
	CS P/N(客户机种)	7inch Circulating Fan	内部型号: TD17
	PART NAME(品名)	WIFI Antenna	
	FREQUENCY(频率)	2400~2500MHz	
	ZTX NO.(物料编号)	K.00000029	
	DATE(日期)	2023-01-09	

CUSTOMER			
QA CHECKED	ME CHECKED	RF CHECKED	MANAGER CHECKED

Remark(备注):

Sign(客户确认签字盖章):

Shenzhen ZTX Communication Technology Co., Ltd				
MANAGER CHECKED	MANAGER CHECKED	ME CHECKED	RF CHECKED	LISTER
		Lai Ningping	Wang Pei	



Shenzhen ZTX Communication Technology Co., Ltd

地址: 深圳市宝安区石岩镇石龙大道 34 号(腾达工业园) 邮编: 518000

Address: No.34, Shilong Avenue, Shiyan Town, Baoan District, Shenzhen, (Tengda Industrial Park) 518000

电话: 0755-27588320 传真: 0755-27588045 <http://www.chinaztx.com>

Tel.: 0755-27588320 Fax: 0755-27588045 <http://www.chinaztx.com>

ANTENNA SPECIFICATION

CUS P/N :7inch Circulating Fan WIFI Antenna ApplicationDate:Jan,09,2023

ZTX P/N :7inch Circulating Fan WIFI Antenna Editor:

Rev: R:A1

Page 1 of 8

Revision history

Edition	Date	State
A1	2023-01-09	The first edition

ANTENNA SPECIFICATION

CUS P/N :7inch Circulating Fan WIFI Antenna Application Date: Jan, 09, 2023
ZTX P/N :7inch Circulating Fan WIFI Antenna Editor:

Rev: R:A1
Page 2 of 8

Index

		Revision history	1
		Index	2
1		Mechanical Specification	3
	1-1	Mechanical Specification(WIFI Antenna)	3
2		Test equipment	4
3		Test Results Summary	5
	3-1	OTA Test	5
	3-2	Transmit Test	5
	3-3	VSWR	5
	3-4	No-source test data	6
	3-5	Environment treatment	6
	3-6	2D/3D Radiation Pattern Results	7
4		Environment Characteristic	8
5		The packing way	8

ANTENNA SPECIFICATION

CUS P/N :7inch Circulating Fan WIFIAntenna ApplicationDate:Jan,09,2023

Rev: R:A1

ZTX P/N :7inch Circulating Fan WIFIAntenna Editor:

Page 3 of 8

1. Mechanical Specification

1-1 Mechanical Configuration (WIFI Antenna)

1

2

3

4

5

6

7

8

ROHS 2.0

The Unmating force of the terminal and the end of the plate: above 5N for the first time;
More than 3N after 30 insertions; The Unmating force of the terminal and the end of the plate: above 5N for the first time; More than 3N after 30 insertions;

Note: The size marked with * is the CPK test size

Rev

AI

Description

Initial issue

Designed

Lai Ningping

Date

2023.01.09

Serial number

A

Structure specification

RF coaxial line

Material quality

FFP (F46) Silver Tin (Low loss) 1.37 Blue wire

engineering

Reserve note

SY137L/50-006

Serial number

B

Structure specification

WIFI shrapnel

Material quality

SUS304 T=0.30mm

engineering

Nickel plating

Reserve note

Serial number

C

Structure specification

Support foam

Material quality

Fire resistant EVA 3M 9495 through UL-94

engineering

Reserve note

Serial number

D

Structure specification

Fixed foam collision RF terminal 1 generation

Material quality

Foam gum 3M RP45 via UL-746C
Phosphor bronze

engineering

Gold plating thickness
≥1μ"

Reserve note

1.01.00732

Serial number

E

Structure specification

Material quality

engineering

Reserve note

General

Grade

5-10

Tolerance

±0.10

Grade

10-20

Tolerance

±0.15

Grade

20-40

Tolerance

±0.20

Grade

40>

Tolerance

±0.25

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

Rev: AI

Material:

Process:

Third Angle:

Project Name

Shenzhen ZTX Communication Technology Co., Ltd

Scale

1:1

Unit:mm

ANTENNA SPECIFICATION

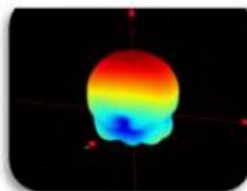
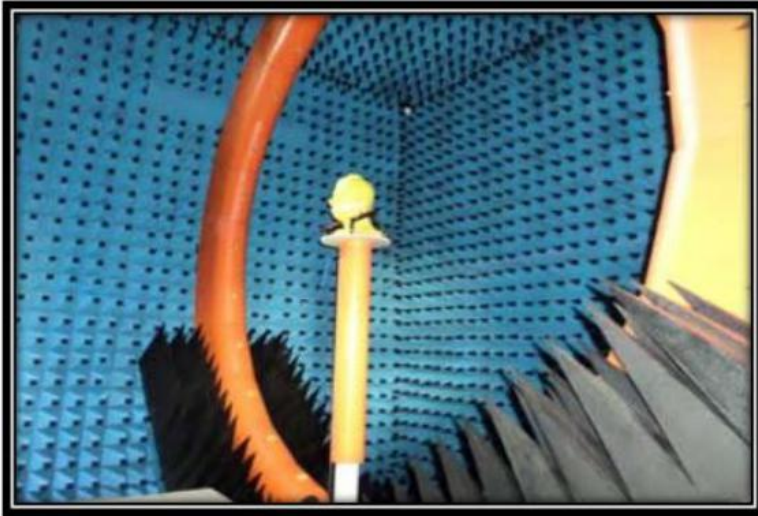
CUS P/N :7inch Circulating Fan WiFiAntenna ApplicationDate:Jan,09,2023

Rev: R:A1

ZTX P/N :7inch Circulating Fan WiFiAntenna Editor:

Page 4 of 8

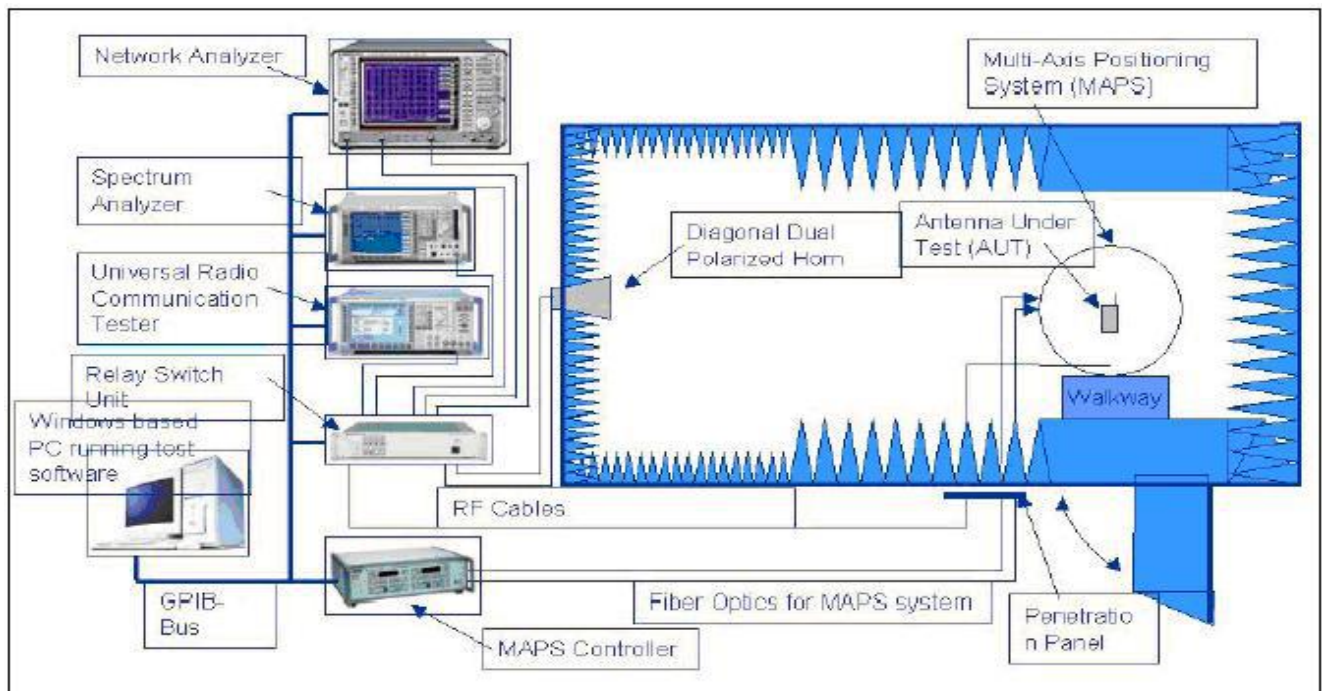
2. Test equipment



Owned 6 microwave dark room, equipped 2 sets world leading France Satimo SG24 OTA certification test systems (one in SHENZHEN, another one in Shanghai), ETS OTA Standard test system, Blue test reverberation test system which is High repeatability, high accuracy and high resolution. It can quickly provide accurate test reports, fully meet the CTIA standards.

Testing range:

Support active, passive testing of GSM/CDMA/WCDMA/TD-SCDMA/LTE/WIFI/WLAN/WiMax/BT/GPS/MIMO/UWB within 0.4-6G.



ANTENNA SPECIFICATION

CUS P/N :7inch Circulating Fan WiFiAntenna ApplicationDate:Jan,09,2023

ZTX P/N :7inch Circulating Fan WiFiAntenna Editor:

Rev: R:A1

Page 5 of 8

3.Test Results Summary

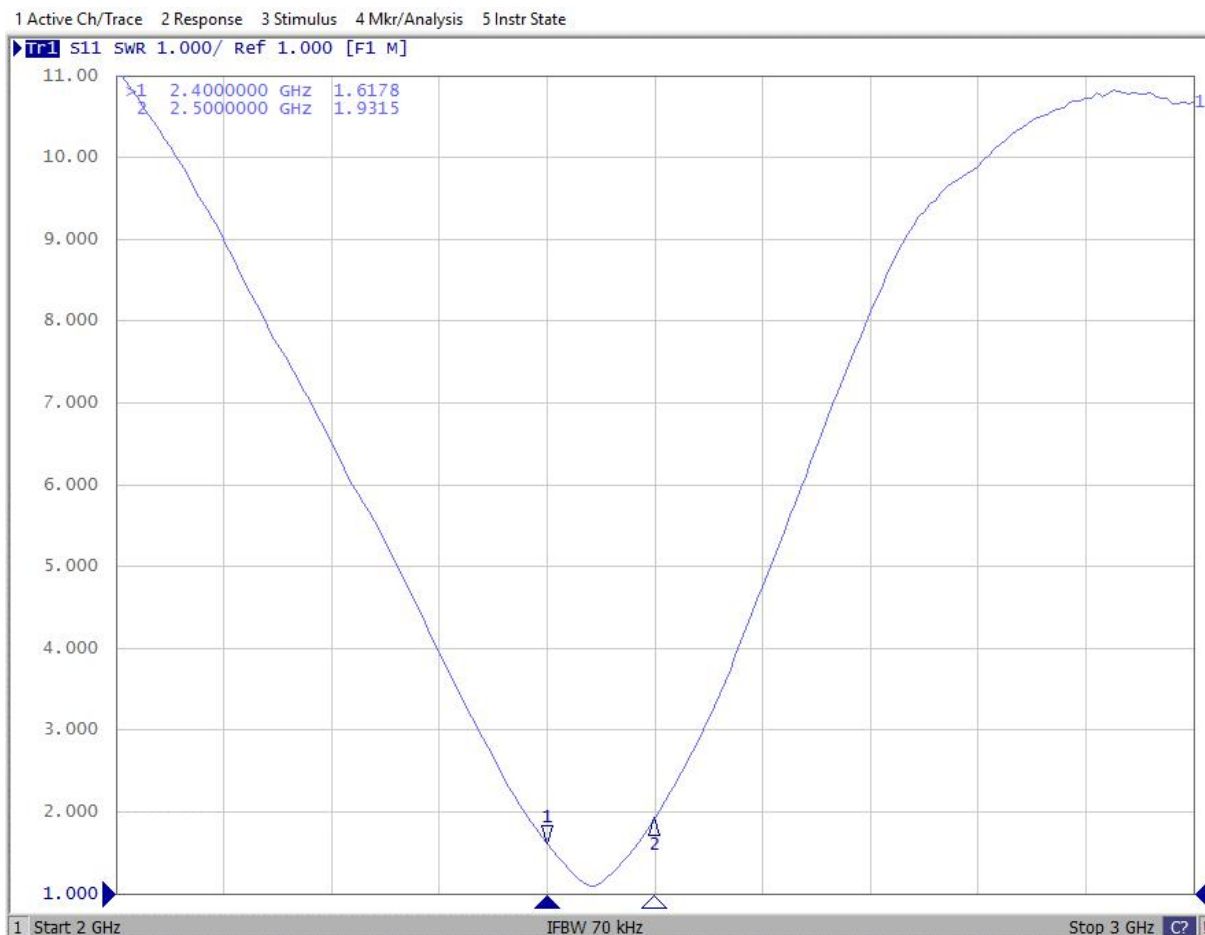
3-1 OTA Test

B			G			N		
Channels	TRP/1M	TS/11M	Channels	TRP/6M	TS/54M	Channels	TRP/M CS0	TS/M CS7
1	15.09	-84.65	1	11.85	-70.46	1	11.61	-64.26
6	15.89	-84.63	6	12.74	-70.36	6	12.82	-64.58
11	15.81	-84.33	11	12.17	-70.66	11	12.77	-64.34

3-2 Transmit Test

B			G			N		
Channels	TRP/1M	TS/11M	Channels	TRP/6M	TS/54M	Channels	TRP/M CS0	TS/M CS7
1	17.05	-87	1	14.23	-73	1	14.12	-66
6	17.3	-87	6	14.04	-73	6	14.28	-66
11	17.48	-87	11	14.29	-73	11	14.6	-66

3-3 VSWR



ANTENNA SPECIFICATION

CUS P/N :7inch Circulating Fan WIFI Antenna Application Date: Jan, 09, 2023
ZTX P/N :7inch Circulating Fan WIFI Antenna Editor:

Rev: R:A1
Page 6 of 8

3-4 No-source test data

Frequency	Efficiency	Efficiency . dB	Gain . dB
2400M H z	66%	-1.80	4.56
2410M H z	68%	-1.67	4.32
2420M H z	69%	-1.61	4.20
2430M H z	68%	-1.67	4.41
2440M H z	69%	-1.61	4.40
2450M H z	68%	-1.67	4.51
2460M H z	70%	-1.55	4.55
2470M H z	71%	-1.49	4.53
2480M H z	69%	-1.61	4.61
2490M H z	68%	-1.67	4.66
2500M H z	68%	-1.66	4.21

3-5 Environment treatment

2400-2500MHz
Antenna position



ANTENNA SPECIFICATION

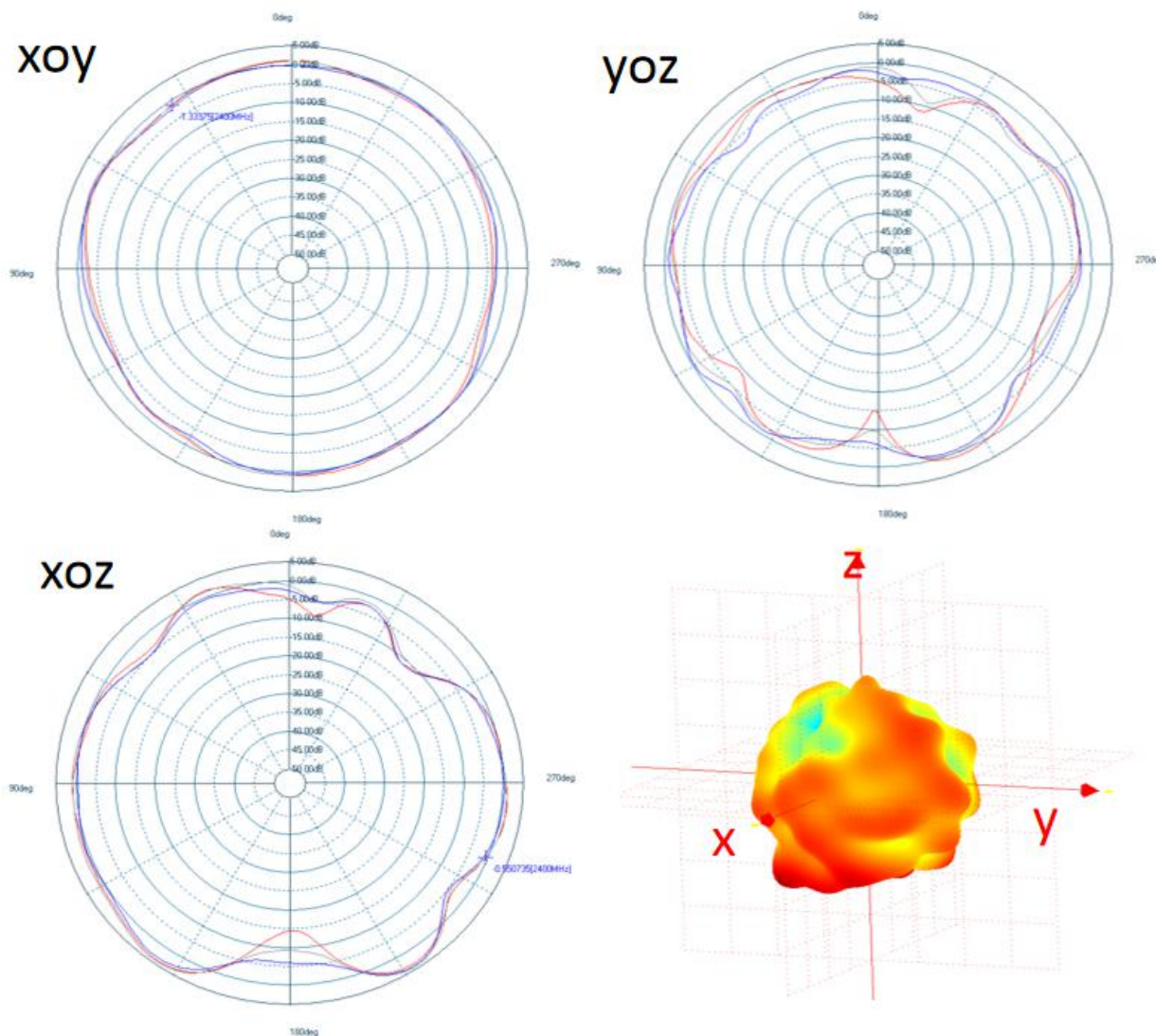
CUS P/N :7inch Circulating Fan WiFiAntenna ApplicationDate:Jan,09,2023

Rev: R:A1

ZTX P/N :7inch Circulating Fan WiFiAntenna Editor:

Page 7 of 8

3-6 2D/3D Radiation Pattern Results



ANTENNA SPECIFICATION

CUS P/N :7inch Circulating Fan WIFI Antenna Application Date: Jan, 09, 2023

Rev: R:A1

ZTX P/N :7inch Circulating Fan WIFI Antenna Editor:

Page 8 of 8

4. Environment Characteristic

NO.	ITEM	TEST CONDITION	SPECIFICATION
4-1	High Temperature/Humidity Storage Test(non operating)	1. Temperature: $+70 \pm 2^{\circ}\text{C}$ 2. Humidity: 90~95%RH 3. Time: 48hrs	No material deformation is allowed.
4-2	Low Temperature/Humidity Storage Test(non operating)	1. Temperature: $-30 \pm 2^{\circ}\text{C}$ 2. Humidity: 0%RH 3. Time: 48hrs	The VSWR, Gain, Radiation Pattern must be met specifications after these test.