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# SPECIFICATION

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Unimaxcomm

## 2ABGH-RC8L1T Antenna

### Product approval sheet

Customer	Orbic	Band	UMTS: 2/4/5 LTE:FDD/TDD 2/4/5/12/13/25/26/41/66/71
Project	RC8L1T	Colour	Black

Customer check:

Reach requirement of customer: OK    NG

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# 1 General description

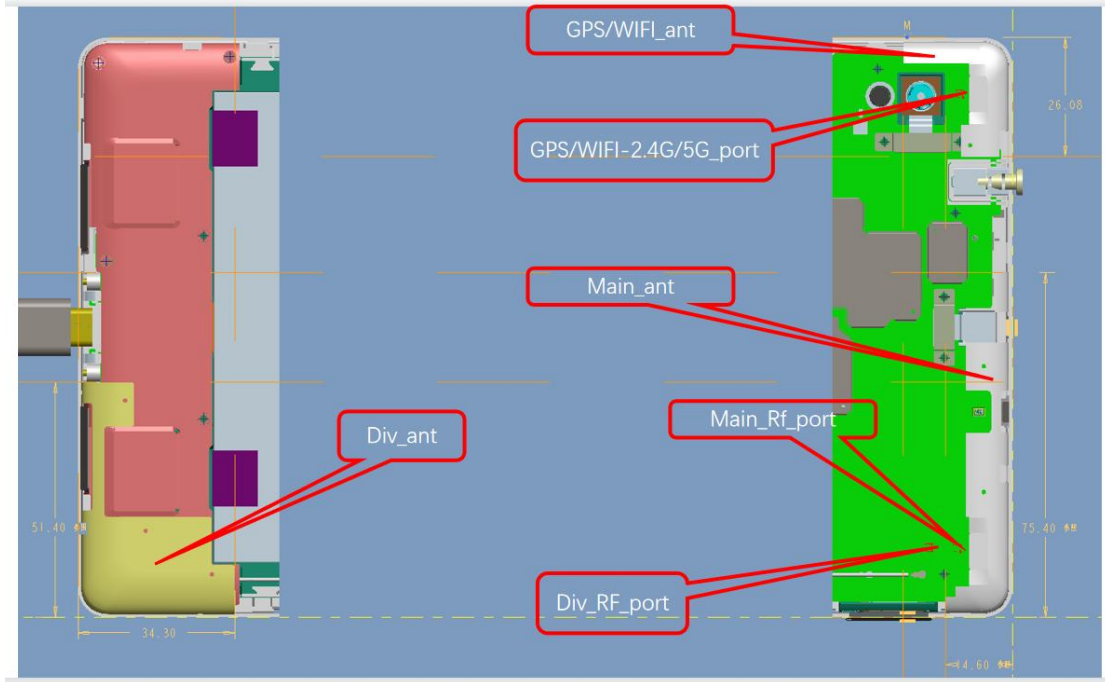
## 1.1 information of DUT

Set Type	Tablet
Dimension	205.8 * 128 * 9.25mm
Band	UMTS: 2/4/5 LTE : FDD/TDD 2/4/5/12/13/25/26/41/66/71 WIFI 5GHz/2.4GHz BT 5.1 GPS
Antenna Material	FPC

## 1.2 Photo of DUT

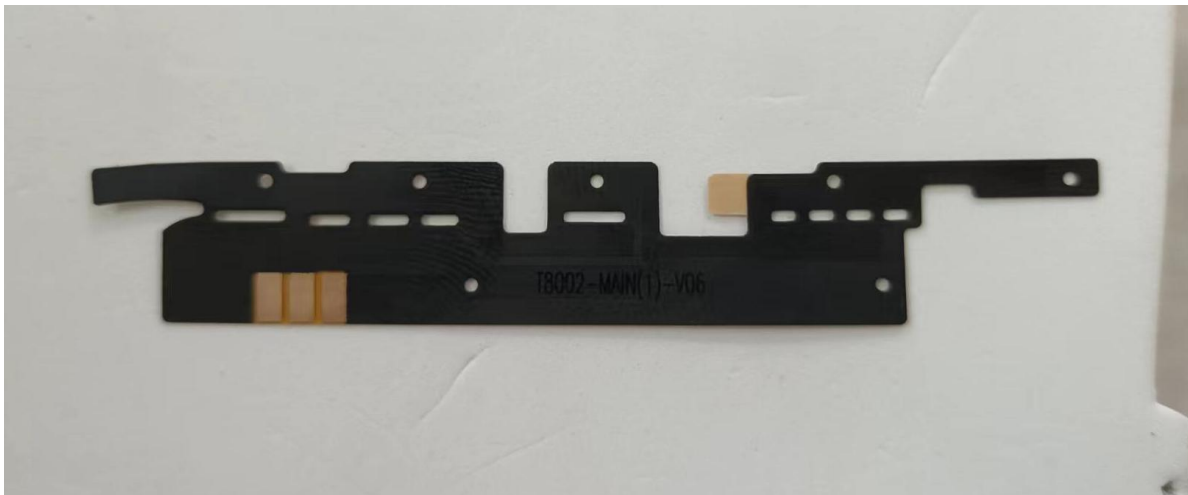
Please refer to antenna report-photo for details.

EUT appearing diagram

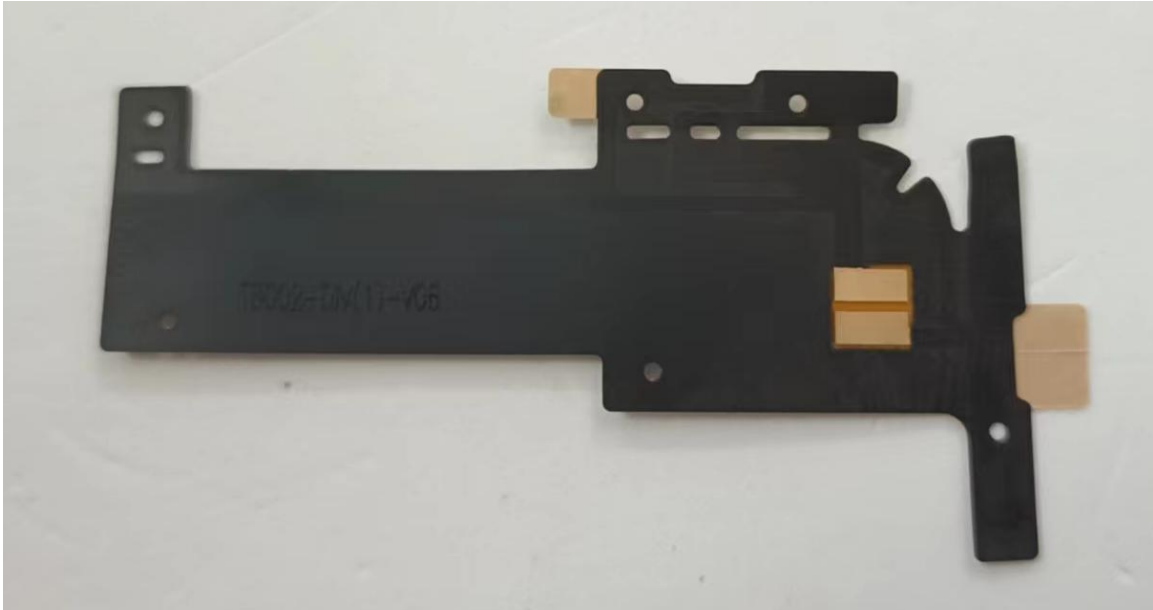


Antenna location

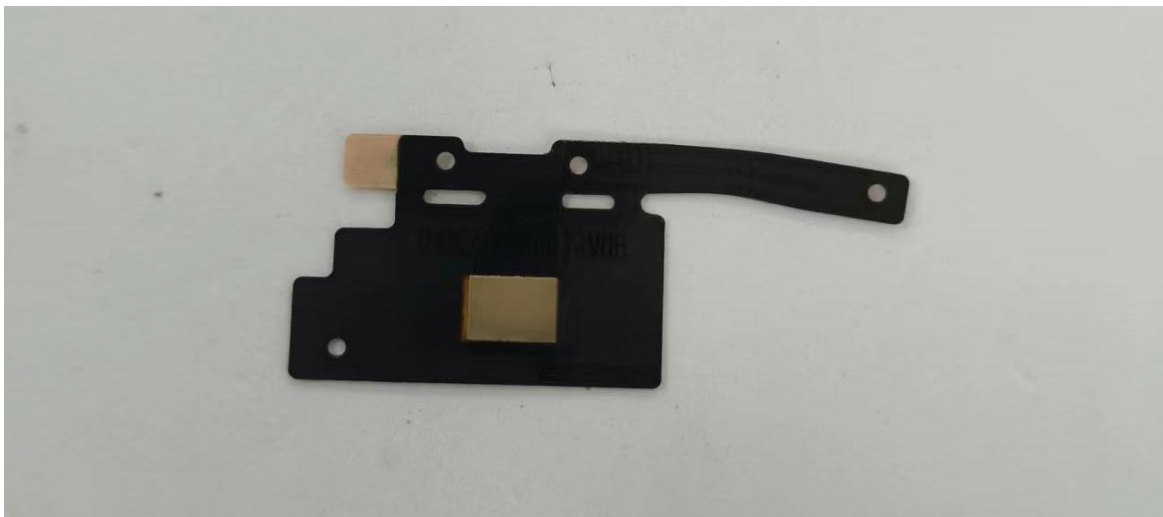
### 1.3 Antenna appearing diagram



Main antenna



Diversity antenna



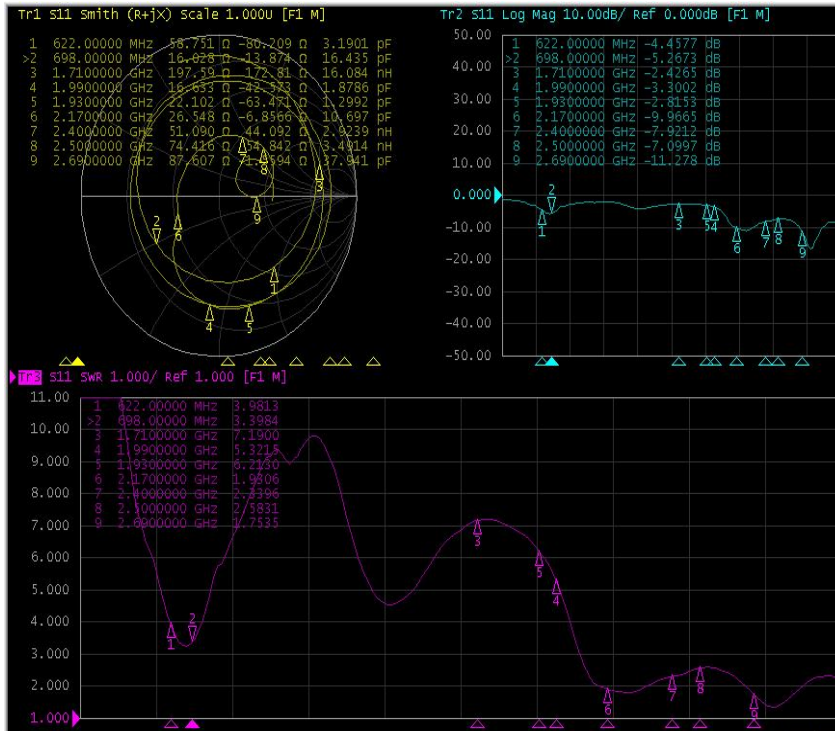
WiFi/BT/GPS antenna

## 2 Electrical performance

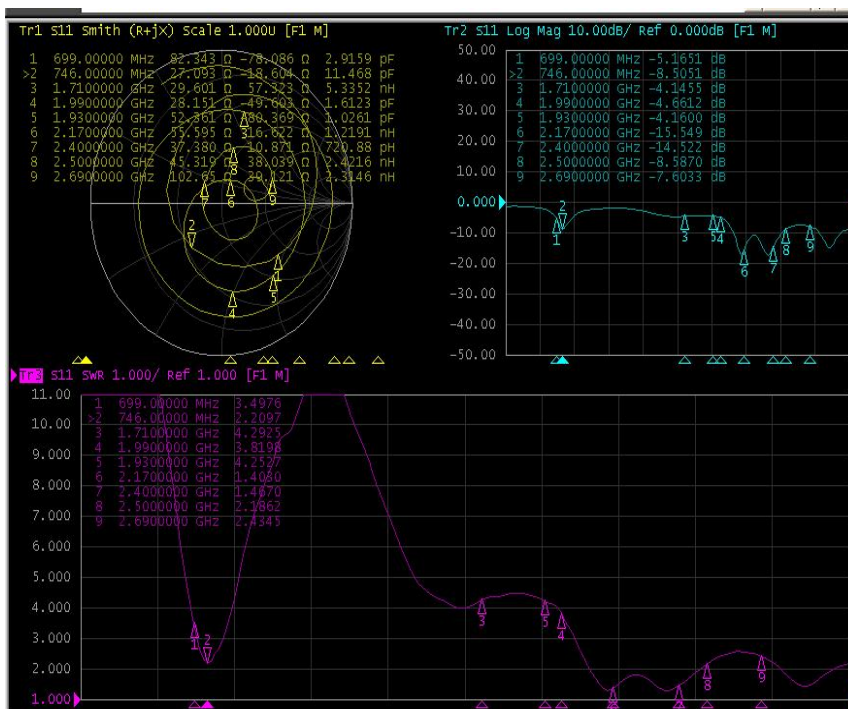
### 2.1 Passive result

#### 2.1.1 VSWR & Return Loss-Main antenna

VSWR & Return Loss test connector: R&S ZVL network analyzer → Cable → JIG

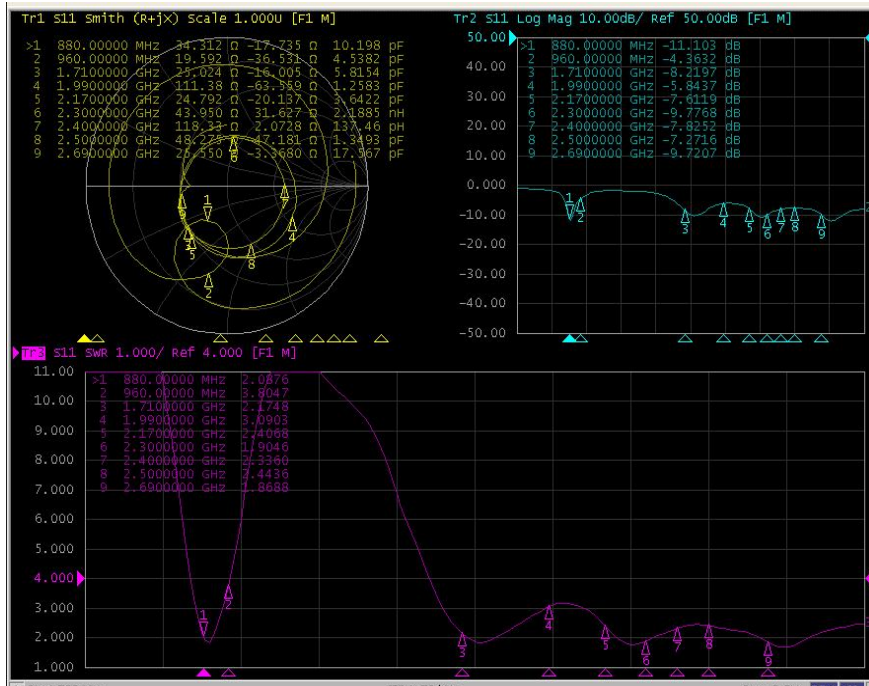


VSWR & Return Loss (LTE 71)



VSWR & Return Loss (LTE 12/13)

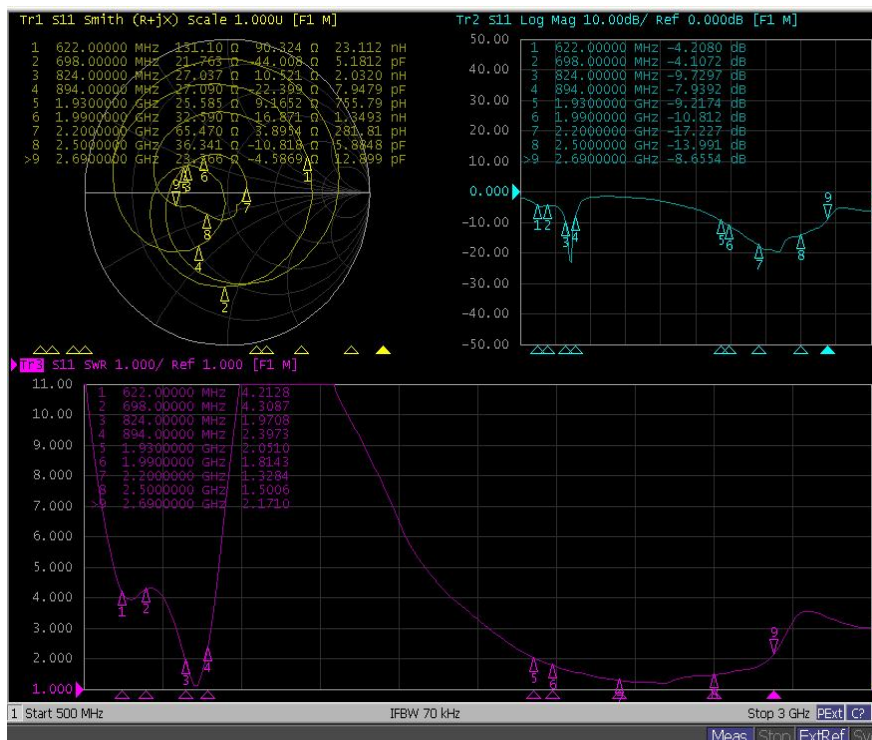
Confidential Information



VSWR & Return Loss (WCDMA 2/4/5 LTE 2/4/5/25/26/41/66)

Freq.(MHz)	622	698	746	880	960	1710	1990	2170	2300	2500	2690
VSWR	3.98	3.40	2.21	2.09	3.80	2.17	3.09	2.41	1.90	2.44	1.87
R.L.	-4.46	-5.27	-8.50	-11.10	-4.36	-8.22	-5.84	-7.61	-9.78	-7.27	-9.72

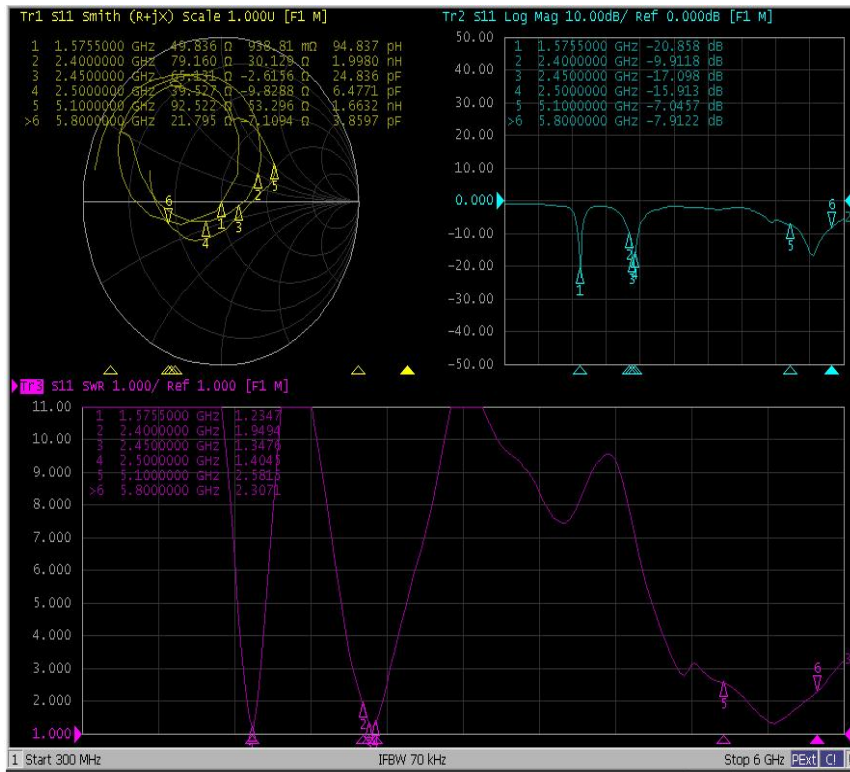
2.12 VSWR & Return Loss -Diversity antenna



Confidential Information

<b>Freq.(MHz)</b>	622	698	824	894	1930	1990	2200	2500	2690
<b>VSWR</b>	4.21	4.31	1.97	2.40	2.05	1.81	1.33	1.50	2.17
<b>R.L.</b>	-4.21	-4.11	-9.73	-7.94	-9.22	-10.81	-17.23	-13.99	-8.66

2.13 VSWR & Return Loss -3 in 1 (WIFI&BT&GPS) antenna



<b>Freq.(MHz)</b>	1575.5	2400	2450	2500	5100	5800
<b>VSWR</b>	1.23	1.95	1.35	1.40	2.58	2.31
<b>R.L.</b>	-20.86	-9.91	-17.10	-15.91	-7.04	-7.91

2.14 Gain test

	Band	Gain	TYPE
<b>GSM/ UMTS Band(s)</b>	GSM1900 / FDD II (1850-1910 MHz)	2.25 dBi	Fixed Internal/IFA
	FDD IV (1710-1755 MHz)	0.35 dBi	Fixed Internal/IFA
	GSM850 / FDD V (824-849 MHz)	-1.12 dBi	Fixed Internal/IFA
<b>LTE</b>	FDD 2: US ( 1850 -1910)	2.25 dBi	Fixed Internal/IFA
	FDD 4: US (T- Mobile) (1710-1755MHz)	0.35 dBi	Fixed Internal/IFA
	FDD 5: US (824-849)	-1.12 dBi	Fixed Internal/IFA
	FDD 12: US (699-716MHz)	-1.33 dBi	Fixed Internal/IFA
	FDD 13: US (Verizon)(777-787MHz)	-1.33 dBi	Fixed Internal/IFA



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	FDD 25: US (1850-1915MHz)	2.25 dBi	Fixed Internal/IFA
	FDD 26: US (814-849MHz)	0.19 dBi	Fixed Internal/IFA
	FDD Other Bands: 66	0.35 dBi	Fixed Internal/IFA
	FDD Other Bands:71	-2.25 dBi	Fixed Internal/IFA
	TDD 41: US, Japan(2496-2690MHz)	5.14 dBi	Fixed Internal/IFA
<b>2.4G BT</b>	2.4~2.4835GHz	4.89 dBi	Fixed Internal/IFA
<b>2.4G WLAN</b>	2.4~2.4835GHz	4.89 dBi	Fixed Internal/IFA
<b>5G WLAN</b>	5.15~5.25GHz	2.18 dBi	Fixed Internal/IFA
	5.25~5.35GHz	1.54 dBi	Fixed Internal/IFA
	5.47~5.725GHz	3.52 dBi	Fixed Internal/IFA
	5.725~5.825GHz	3.35 dBi	Fixed Internal/IFA
	5.725~5.850GHz	2.66 dBi	Fixed Internal/IFA

## 2.2 Active result

### 2.21 Test equipment

Equipment information:

GTS 2800 3D Chamber test system

Base Station Emulator CMW-500

Quad-Ridge Horn Antenna

Agilent8960 E5515C

### 2.22 OTA test data

Band	Channel	TRP(dBm)	TIS(dBm)	Band	Channel	TRP(dBm)	TIS(dBm)
WCDMA B2	9262	21.18	-108.36	WCDMA B5	4132	21.08	-107.28
	9400	20.64	-107.98		4183	20.75	-107.33
	9538	20.13	-108.17		4233	20.11	-107.85
WCDMA B4	1312	20.12	-108.66	/	/	/	/
	1413	21.11	-108.28		/	/	/
	1513	21.61	-108.36		/	/	/
Band	Channel	TRP(dBm)	TIS(dBm)	Band	Channel	TRP(dBm)	TIS(dBm)
LTE B2	18650	21.14	-98.64	LTE B25	26065	21.61	-98.64
	18900	21.22	-98.12		26365	21.02	-98.87
	19150	21.36	-98.42		26665	20.49	-99.08
LTE B4	20000	20.66	-98.69	LTE B26	26715	20.36	-98.77
	20175	21.25	-98.71		26865	20.6	-98.34
	20350	21.81	-98.62		27015	19.36	-98.32
LTE B5	20450	21.32	-96.15	LTE B66	132022	20.93	-99.12

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	20525	21.07	-96.35		132322	21.67	-98.84
	20600	20.51	-96.87		132622	21.09	-99.24
LTE B12	23035	19.14	-96.14	LTE B71	133172	18.75	-93.58
	23095	19.65	-96.34		133297	18.71	-93.36
	23155	20.14	-96.54		133422	18.68	-93.19
LTE B13	/	/	/	LTE B41 (20MHz)	18050	20.78	-95.36
	23230	17.69	-94.11		18300	20.94	-95.16
	/	/	/		18550	20.88	-95.07

### 3 Overview of test sample

#### 3.1 VSWR & Smith chart test

Test progress:

- 1、 Use 'start' key and 'stop' key to set up frequency range
- 2、 Calibrate test port of the instrument
- 3、 Connect EUT and instrument with RF cable , and finish VSWR & Return Loss & Smith chart
- 4、 Export and save test result.

Overview of EUT

Please refer to antenna report-photo for details.

## 3.2 Gain test

Test progress:

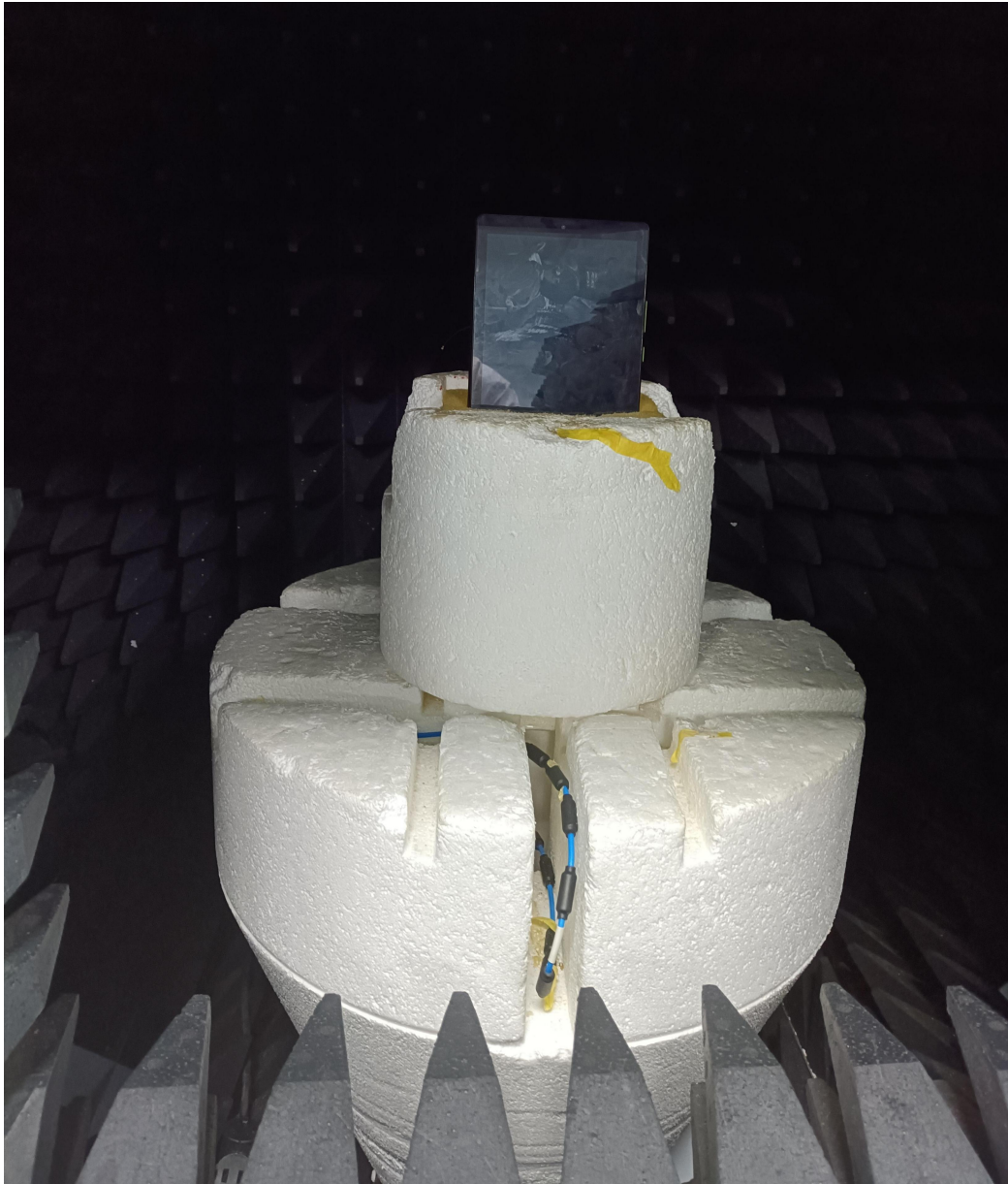
- 1、 Open computer and instrument ,choose passive test include Gain by program-controlled computer
- 2、 Put EUT on turntable and connect EUT with RF cable
- 3、 Set up frequency point by 10MHz step
- 4、 Control computer desk and finish test
- 5、 Export and save test result

Overview of EUT

Please refer to antenna report-photo for details.

### 3.3 Active test

- 1、 Open computer and instrument ,chose active test include TRP and TIS by program-controlled computer
- 2、 Place on top of the Styrofoam mast in a holding fixture
- 3、 Logon and start EUT with instrument by program-controlled computer
- 4、 Export and save test result



Overview of EUT

## 4 Reliability Testing Report

深圳市大显科技有限公司

## 盐水喷雾试验记录表

编号: QR/QC-WI09-01 版本 B

试验时间: 2022 年 10 月 12 日 15:00 至 10 月 14 日 15:00 共计 48 小时

(喷雾时间) 试验若有中断, 其原因为:

□ 盐水试验法: 试验室温度 35℃, 饱和空气桶温度 47℃

1. 氯化钠品质	<b>99.50%</b>	2. 纯净水品质	<b>纯净水</b>
3. 喷雾采取 PH 值	<b>雾化前 6.5~7.2</b>	4. 试验液 PH 值	<b>6.0</b>
5. 压力表	<b>1.0</b> Kg f/cm <sup>2</sup>	6. 试验室相对湿度	<b>30%</b>
7. 试验室温度	<b>35</b> °C	8. 压力桶温度	<b>47</b> °C
9. 盐水浓度	<b>5±0.1</b> %	10. 其他	

判定: 依 GB6461-2002 标准判定

结果: 合格

备注: 试验结束后, 如果试样状态允许, 可不经清洗进行检查。如果污垢和盐类沉积物等掩盖了缺陷而使检查难以进行时, 宜用蘸有中性肥皂液的海绵对表面进行擦拭, 然后用水漂洗。但在此过程中不应施加压力, 以免洗掉腐蚀产物而造成评级偏高。清洗液不应覆盖层产生任何破坏。中途或定期检查时不允试清洗试样, 否则影响测试结果