OTA TEST REPORT(Passive)

Applicant Shenzhen General Test System Co., Ltd

Product RayZone1800

Issue Date May 9, 2024

Shenzhen 3Good Wireless Communication Co., Ltd .
Tested the above equipment in accordance with the requirements in **ANTI/IEEE Std 149-2008**.The test results show that the equipment tested is capable of demonstrating compliance with the Requirements as documented in this report.

Prepared by: Lang Zhu

Approved by: Wu Zhou

Shenzhen 3Good Wireless Communication Co., Ltd

Room501-508,jinfulai Building,No.49-1,Dabao Road,Baoan District,Shenzhen

1. Test Laboratory

1.1 Notes of the Test report

This report shall not be reproduced in full or partial. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of applicable standards stated above.

1.2 Test facility

GTS1800 Microwave Anechoic Chamber ： testing frequency ranges from 600MHz to 6GHz.

1.3 Testing Location

Company: Shenzhen 3Good Wireless Communication Co., Ltd

Address: Room501-508,jinfulaiBuilding,No.49-1,DabaoRoad,BaoanDistrict, Shenzhen

Contact: Lang Zhu

Telephone: 17608490732

E-mail: zhulang-rfrd@3good.net.cn

1.4 Laboratory Environment

Temperature	Min.= 19℃, Max.=25℃	
Relative humidity	Min.=40%，Max.=72%	
Shield effect	0.6-7GHz	>100dB
Ground resistance	<0.5Ω	

2. General Description of Equipment under Test

2.1 Applicant and Manufacturer information

Applicant Name	Shenzhen General Test System Co., Ltd
Applicant address	Building C-A7 Suite 805,2190 Liuxian Avenue, Nanshan District, Shenzhen, P.R. China
Manufacturer Name	Shenzhen General Test System Co., Ltd
Manufacturer address	Building C-A7 Suite 805,2190 Liuxian Avenue, Nanshan District, Shenzhen, P.R. China

2.2 General information

EUT Description	
Product Name	RayZone1800
Model	GTS-ANT D-H
HW Version	RayZone1800 V1.0
SW Version	MaxSign 100
Antenna Type	FPC Antenna
Antenna Manufacturer	Shenzhen 3Good Wireless Communication Co., Ltd
Test Frequency	800MHz-2500MHz

2.3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:
Test Method: **ANSI/IEEE Std 149-2008**

3. Test Conditions

3.1 Test Configuration

The method is used to measure the antenna 3D GAIN of EUT in OTA qualified anechoic

chamber. Equipment Under Test (EUT) geometry centre vertical projection at the centre of platform, the distance from EUT to measurement antenna is 1m.

3.2 Test Measurement

Spherical coordinate system

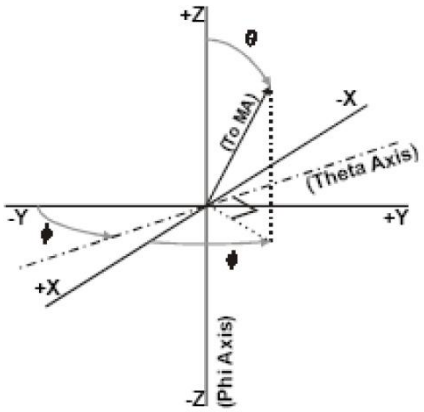
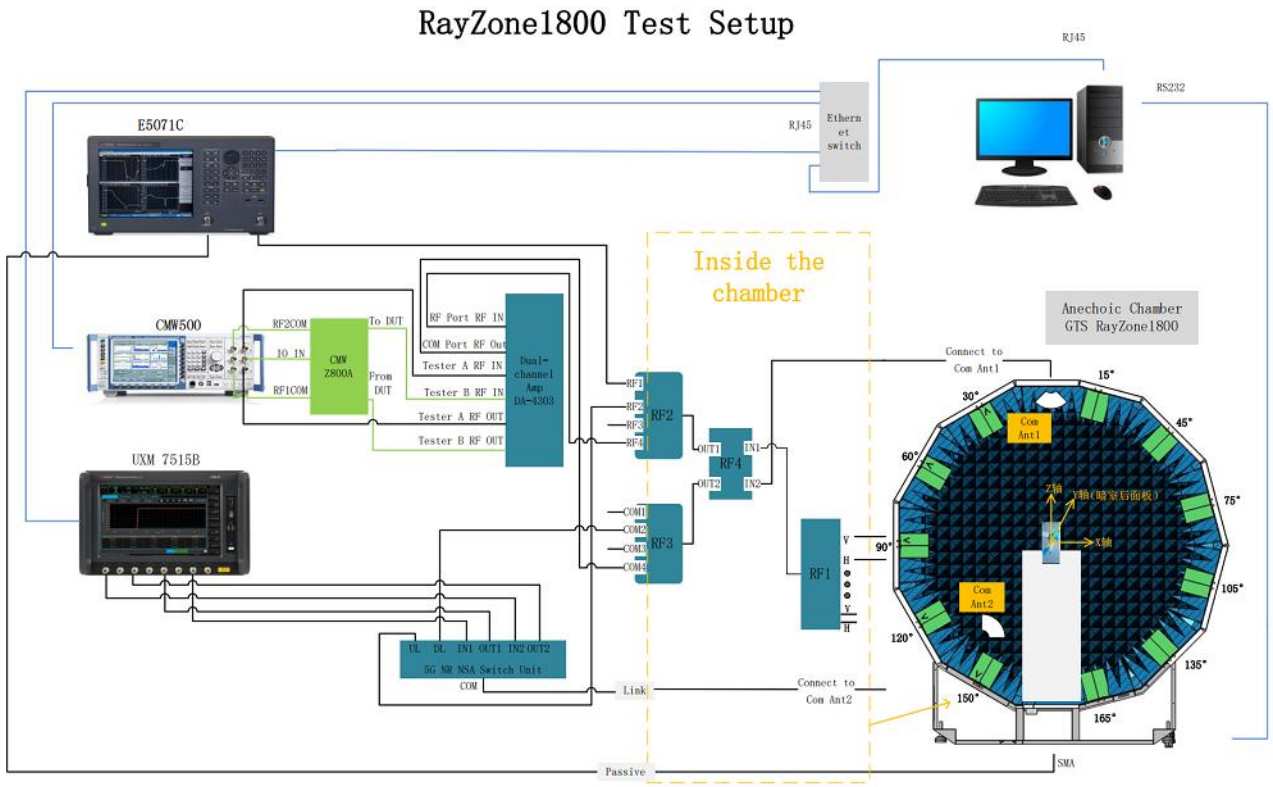


Figure 1 Test coordinate system

Note: Theta is from 0-180degree.Phi is from EUT and record the Date, the step of rotation is 15 degree.

Test Setup



4. Antenna location map

All of Implementation antenna
Ant0:
GSM850; WCDMA B5; LTE B5/12/13/17/26/71; NR-n5/71 RX&TX;

Ant1:
GSM1900; WCDMA B1/B2/B4; LTE B2/B4/B25/B66 RX&TX;

Ant2:
NR-n77 RX&TX

Ant3:
LTE B41; NR-n41 RX&TX

Ant4:
NR-N2/N25/N41/N66/N77 RX

Ant5:
n2/n25/n66 RX&TX

Ant6:
WiFi/BT/GPS 2412MHz~2472MHz, 5180MHz~5825MHz,1575.42MHz;

5. Test Results

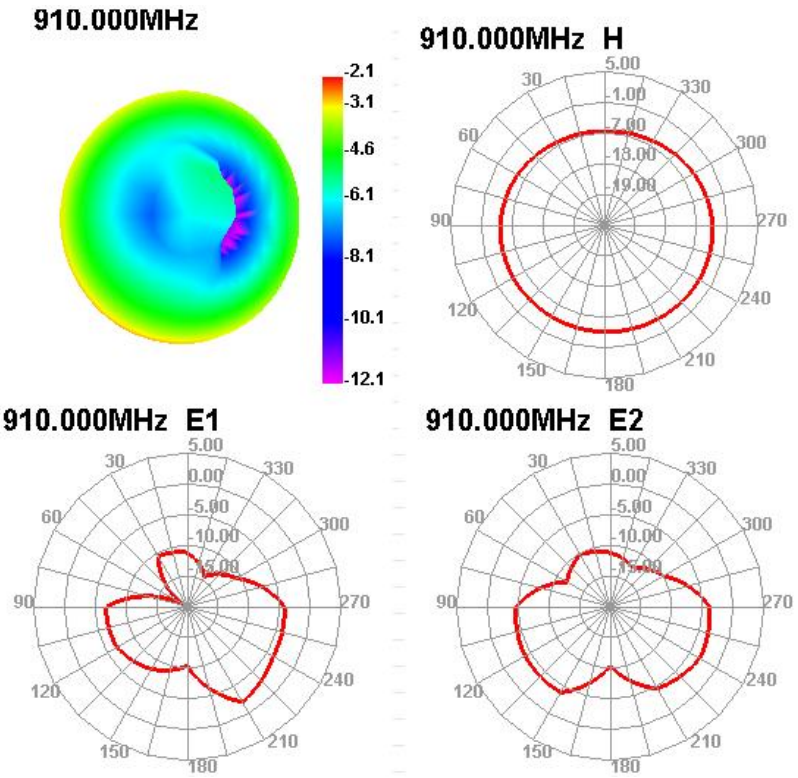
5.1 Antenna Max. Peak Gain

GSM850：-2.2dBi
EGSM900：-2.1dBi
DCS1800：-2.8dBi
PCS1900：-0.8dBi
W-B1：-0.9dBi
W-B2：-0.8dBi
W-B4：-2.8dBi
W-B5：-2.2dBi
LTE-B2：-0.8dBi
LTE-B4：-2.8dBi

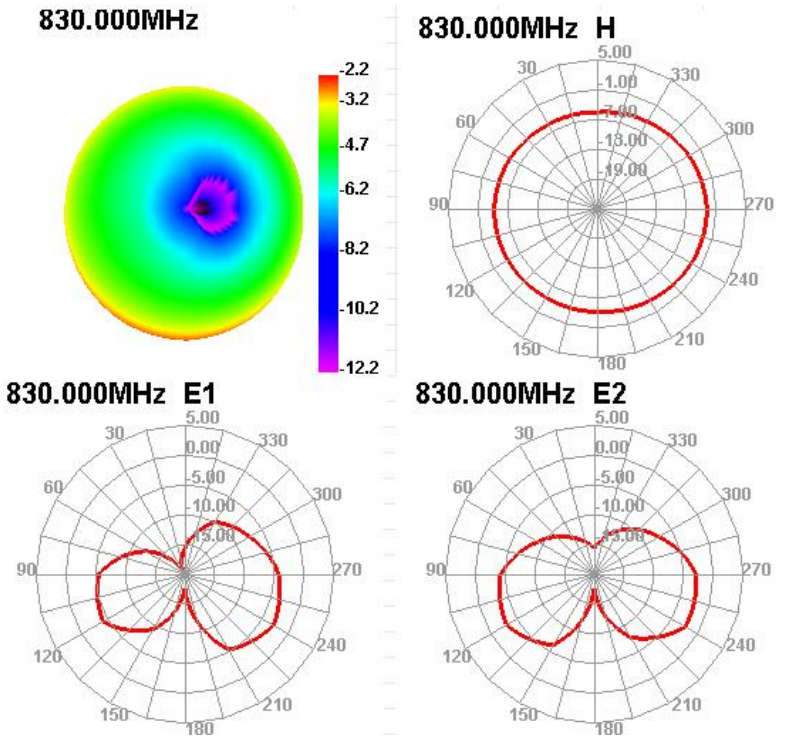
LTE-B5：-2.2dBi
LLTE-B12：-1.3dBi
LLTE-B13：-2.8dBi
LTE-B17：-1.3dBi
LTE-B25：-0.8dBi
LTE-B26：-2.2dBi
LTE-B66：-2.8dBi
LTE-B71：-2.9dBi
LTE-B41：-0.6dBi
NR-N2：-1.4dBi
NR-N5：-2.2dBi
NR-N25：-1.4dBi
NR-N41：-0.6dBi
NR-N66：-2.3dBi
NR-N71：-2.9dBi
NR-N77：-1.4dBi
WIFI 2.4G/BT：2.7dBi
WIFI 5G： -0.8dBi
GPS：0.4dBi

5.2 Antenna radiation pattern

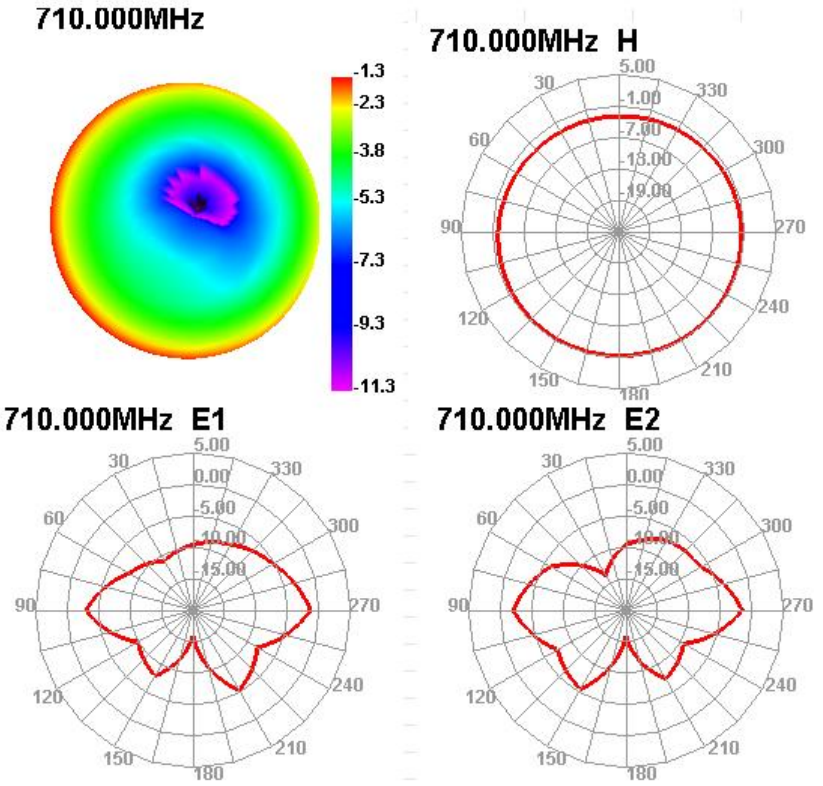
GSM900/W-B8



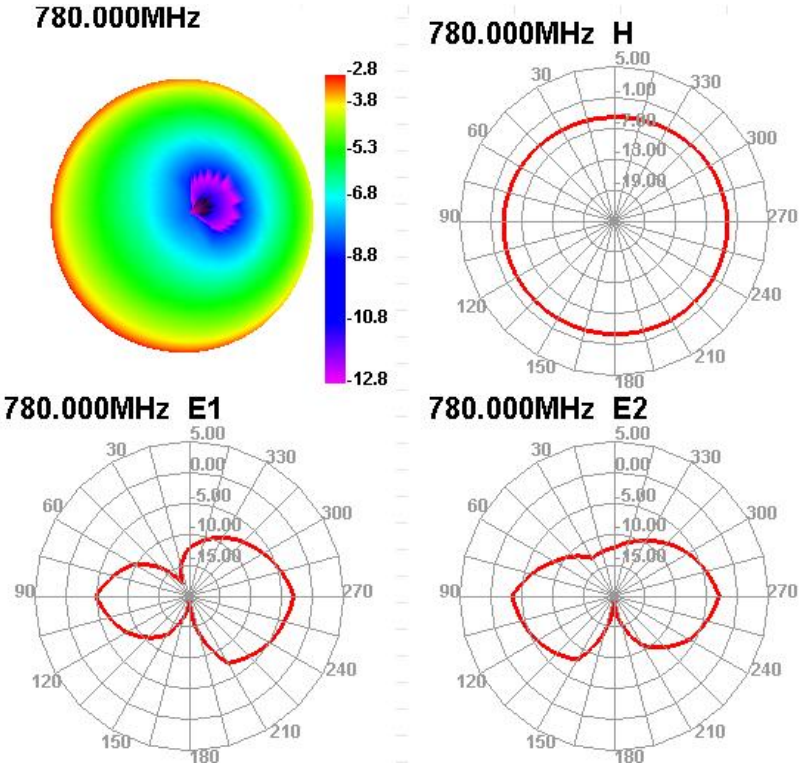
GSM850+W-B5+LTE-B5+NR-N5



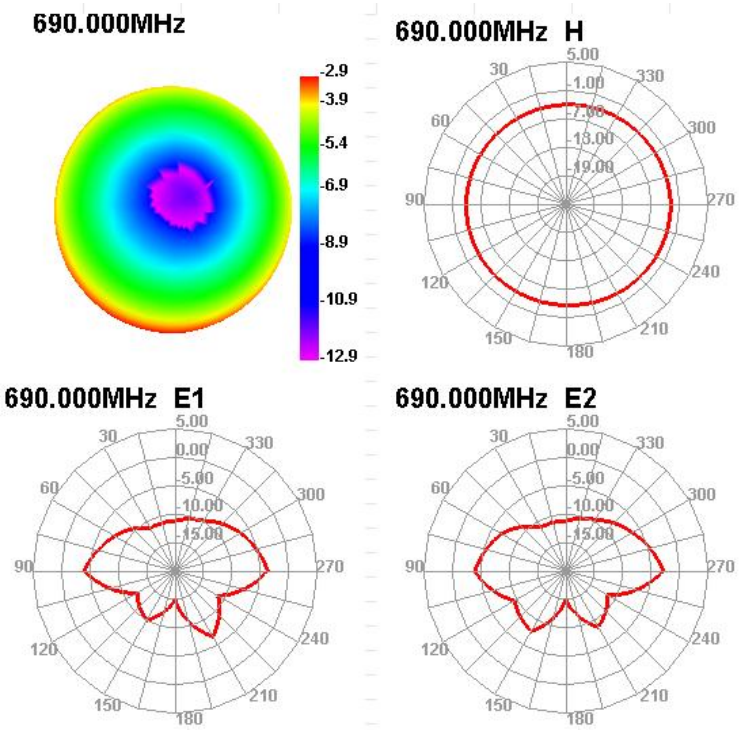
LTE-B12/B17



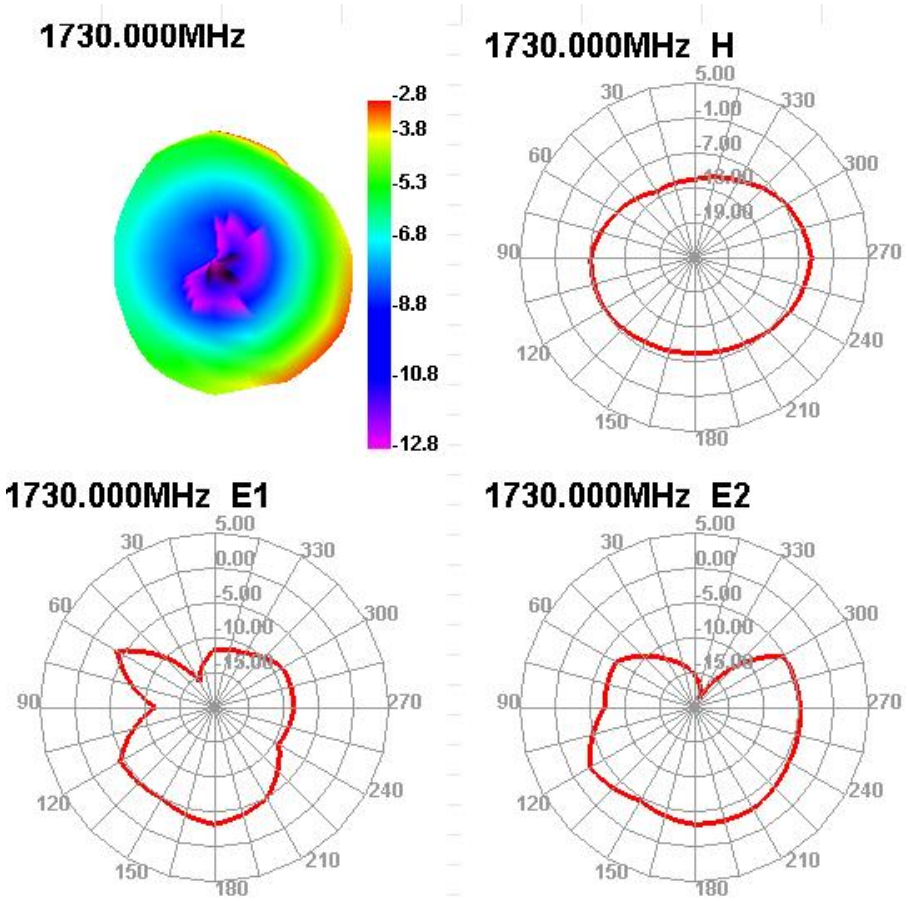
LTE-B13



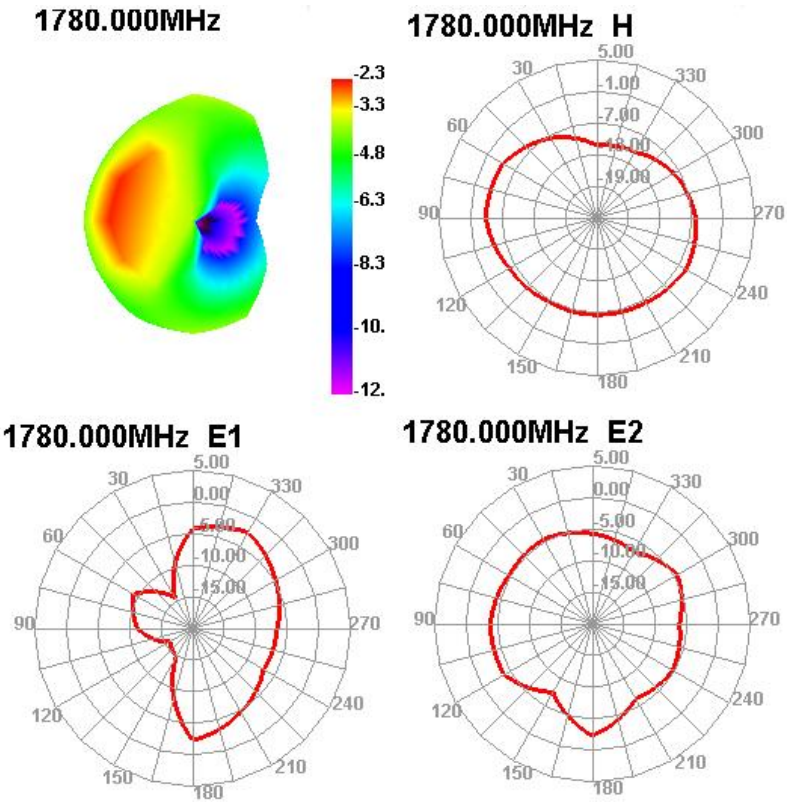
LTE-B71+NR-N71



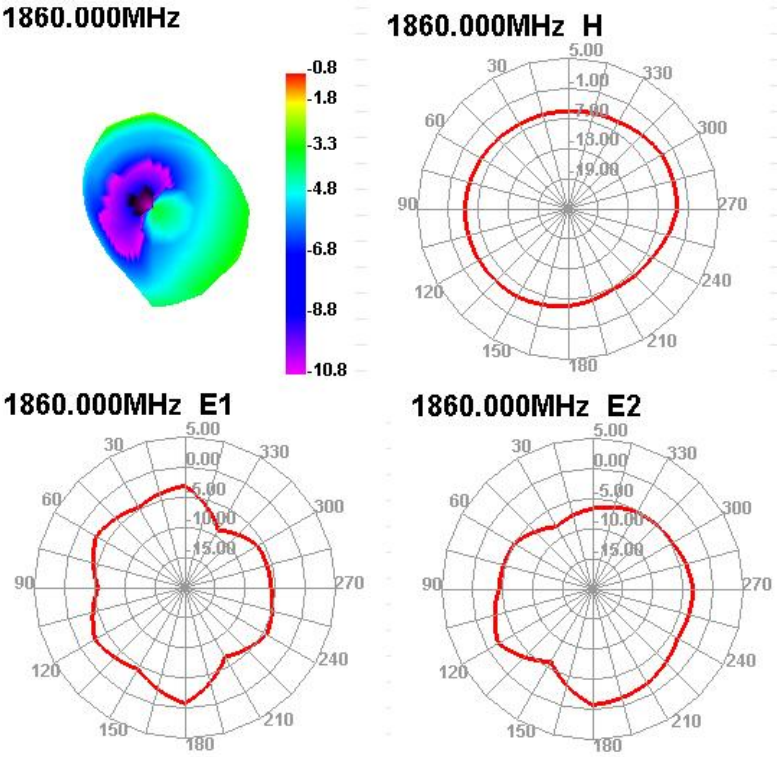
DCS1800+W-B4+LTE-B4/B66



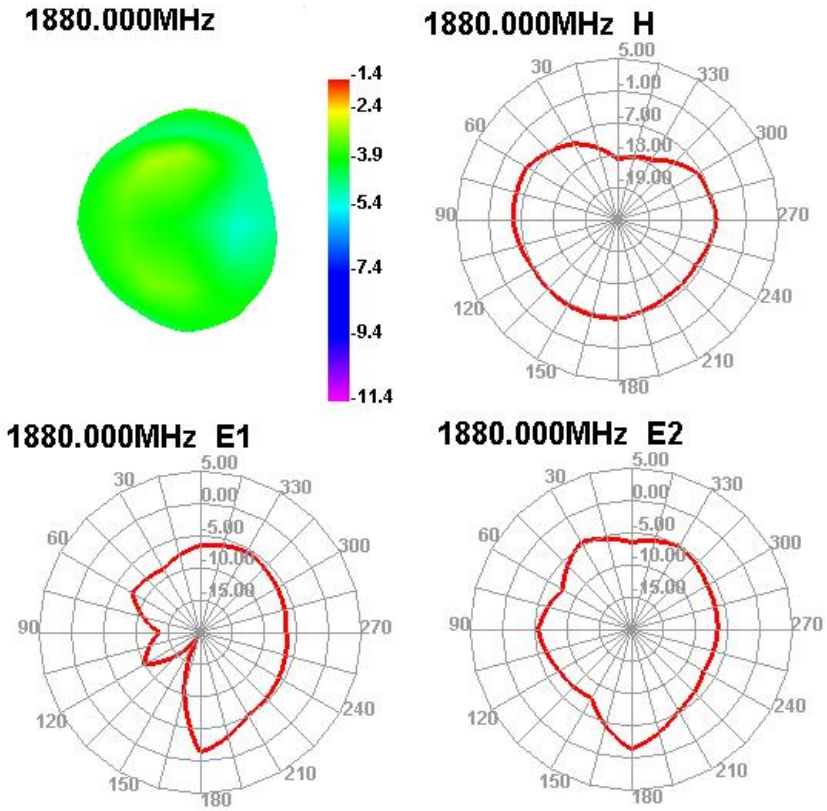
NR-N66



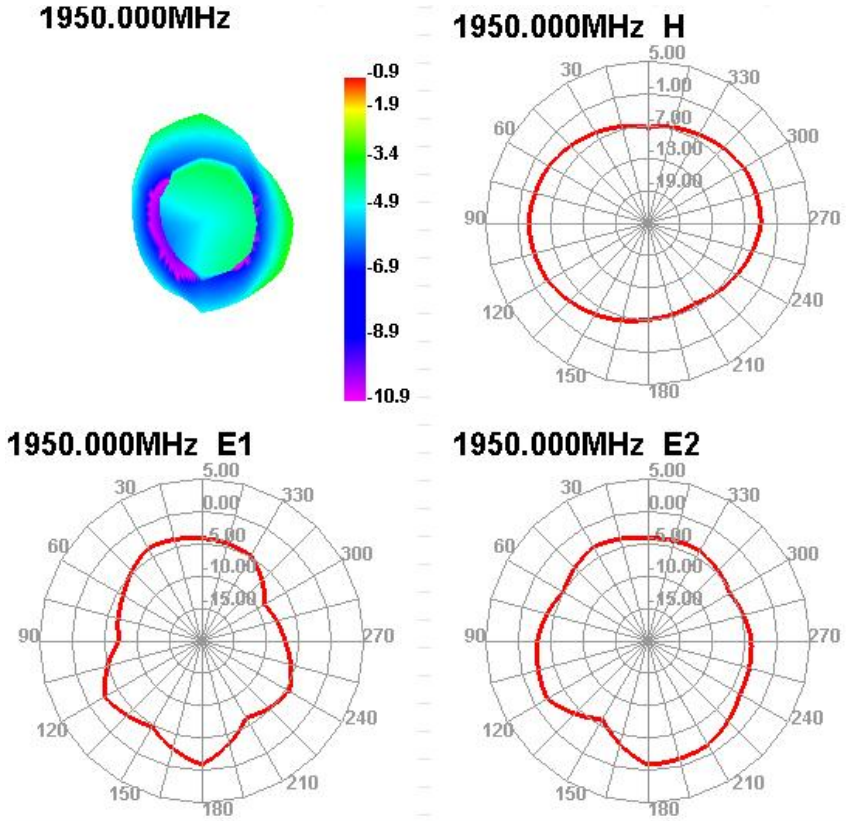
PCS1900+W-B2+LTE-B2/B25



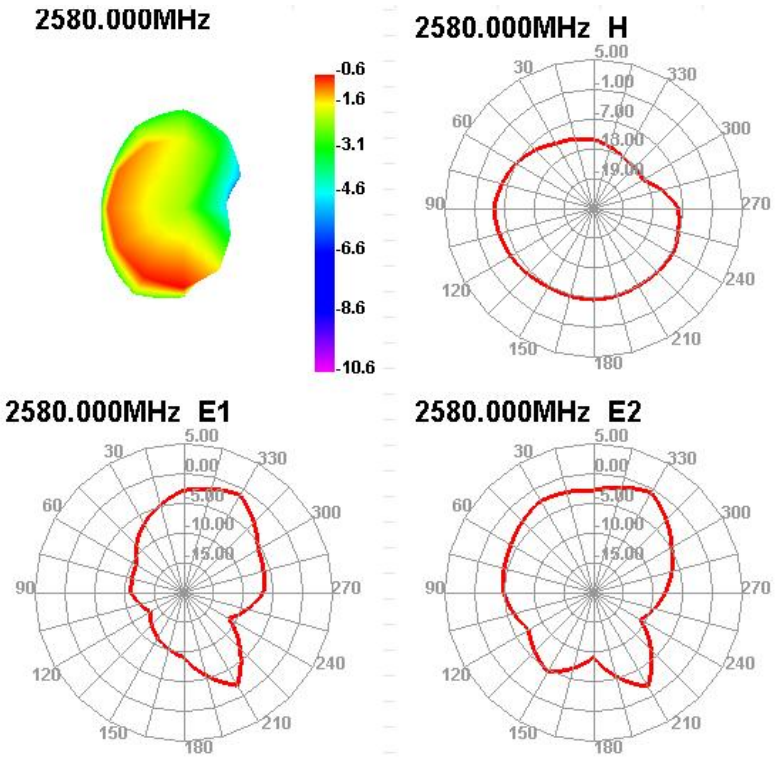
NR-N2/N25


1880.000MHz
-1.4
-2.4
-3.9
-5.4
-7.4
-9.4
-11.4
1880.000MHz H
1880.000MHz E1
1880.000MHz E2

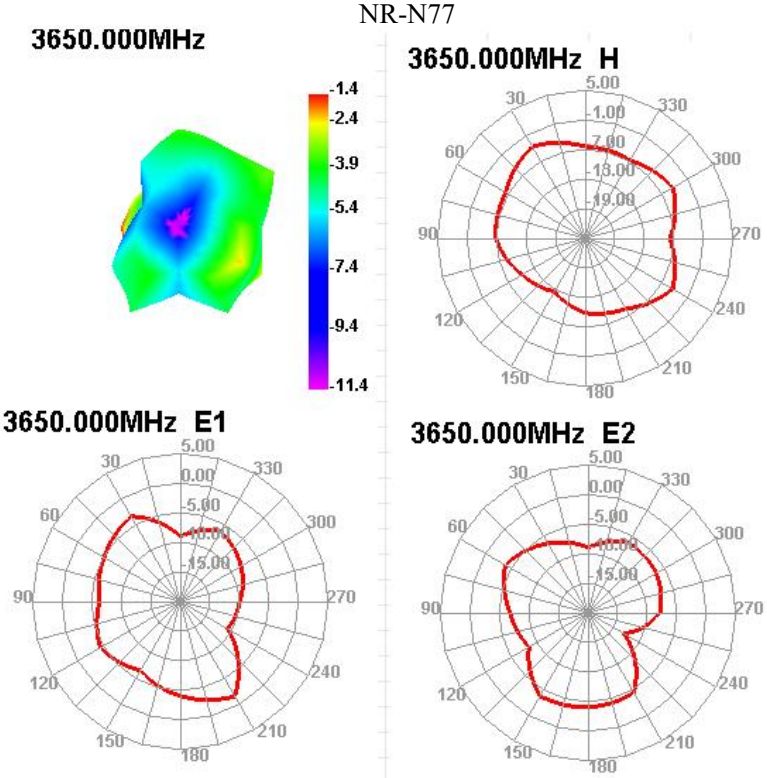
W-B1


1950.000MHz
-0.9
-1.9
-3.4
-4.9
-6.9
-8.9
-10.9
1950.000MHz H
1950.000MHz E1
1950.000MHz E2

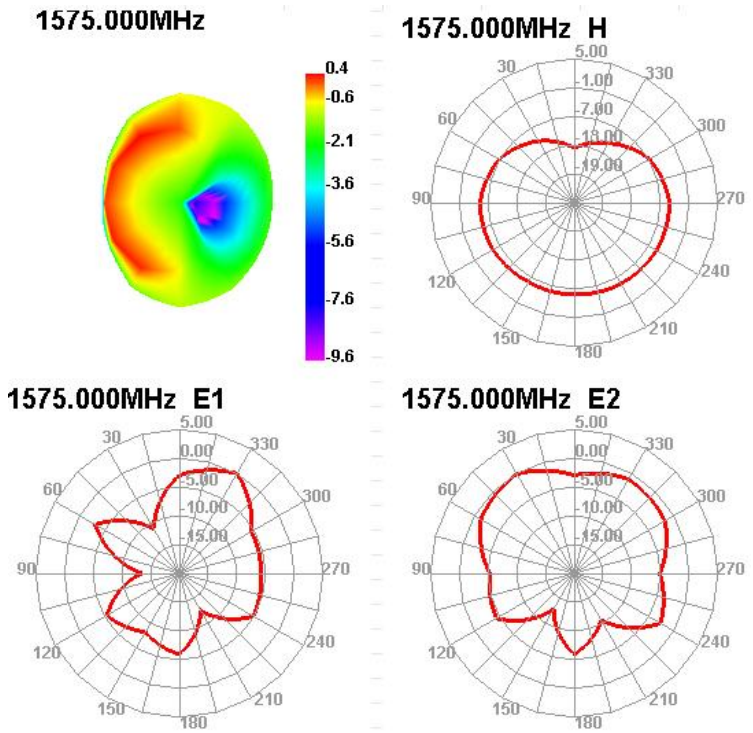
LTE-B41+NR-N41



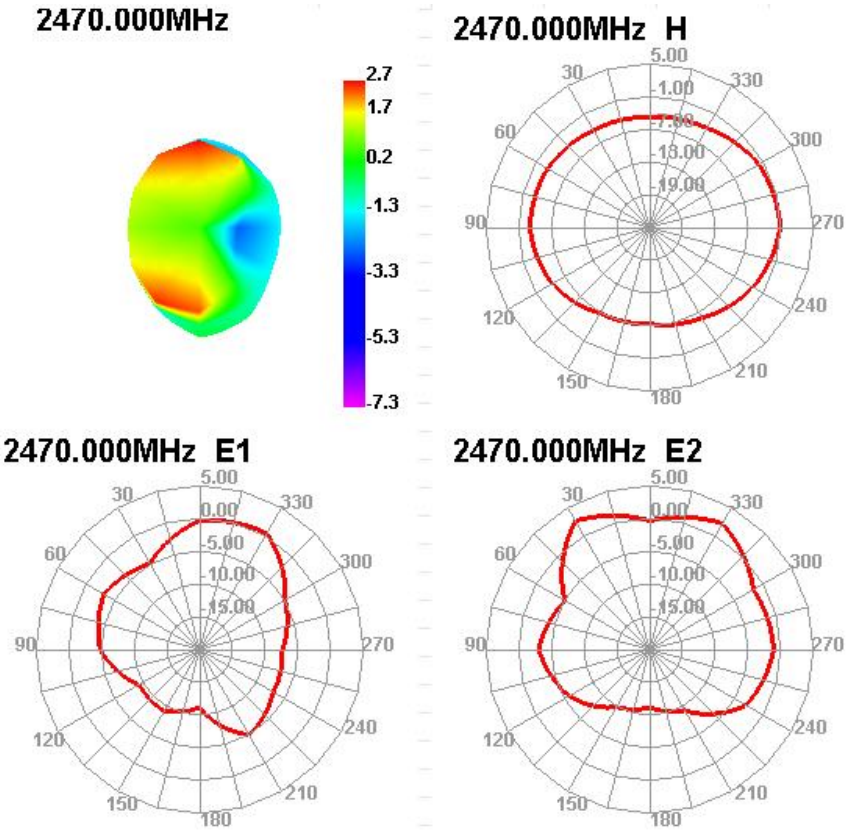
NR-N77



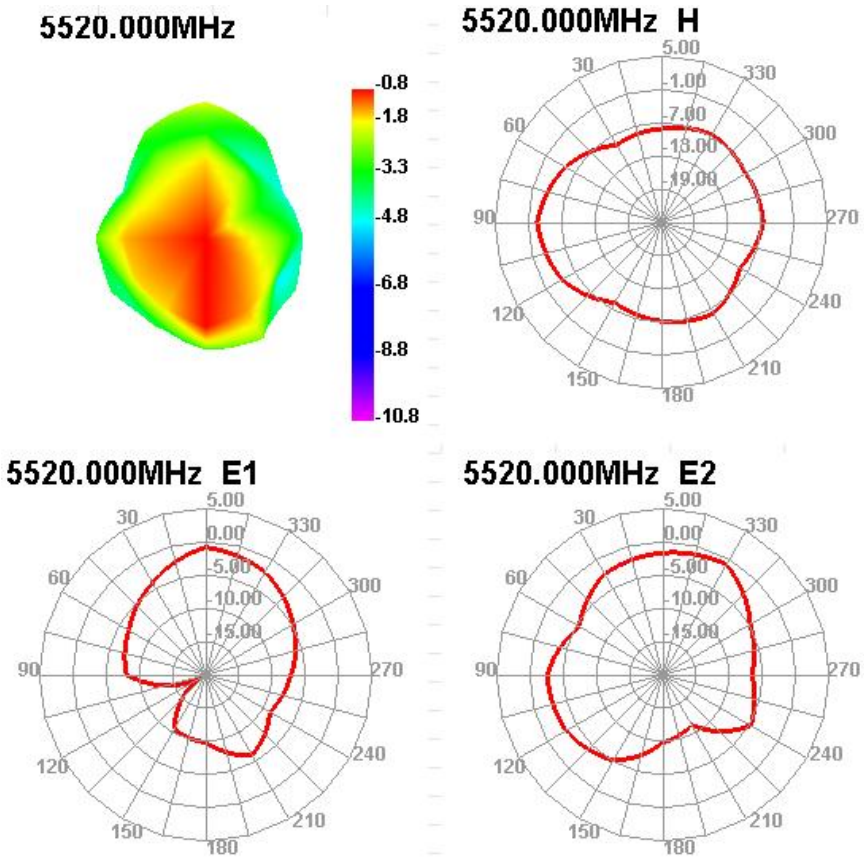
GPS


1575.000MHz
0.4
-0.6
-2.1
-3.6
-5.6
-7.6
-9.6
1575.000MHz H
1575.000MHz E1
1575.000MHz E2

WIFI 2.4G


2470.000MHz
2.7
1.7
0.2
-1.3
-3.3
-5.3
-7.3
2470.000MHz H
2470.000MHz E1
2470.000MHz E2

WIFI 5.8G



5. Equipment List

Type of Equipment	Manufacture	Model Number
Network Analyzer	Agilent Technologies	E5071B
Switch control System	GTS	RayZone1800
Software	GTS	MaxSign 100 Patten Measurement software