

# Antenna SPEC

**Applicant**    Shenzhen General Test System Co., Ltd  
**Product**        RayZone1800  
**Issue Date**     April 18, 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°C, Max.=25°C |        |
| 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



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



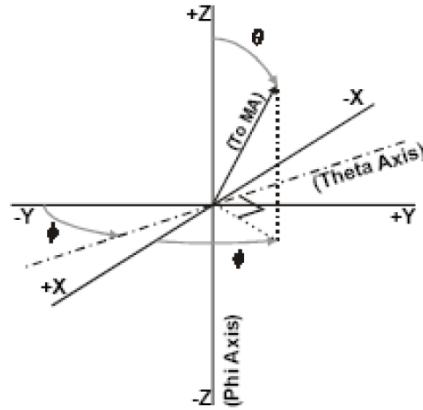
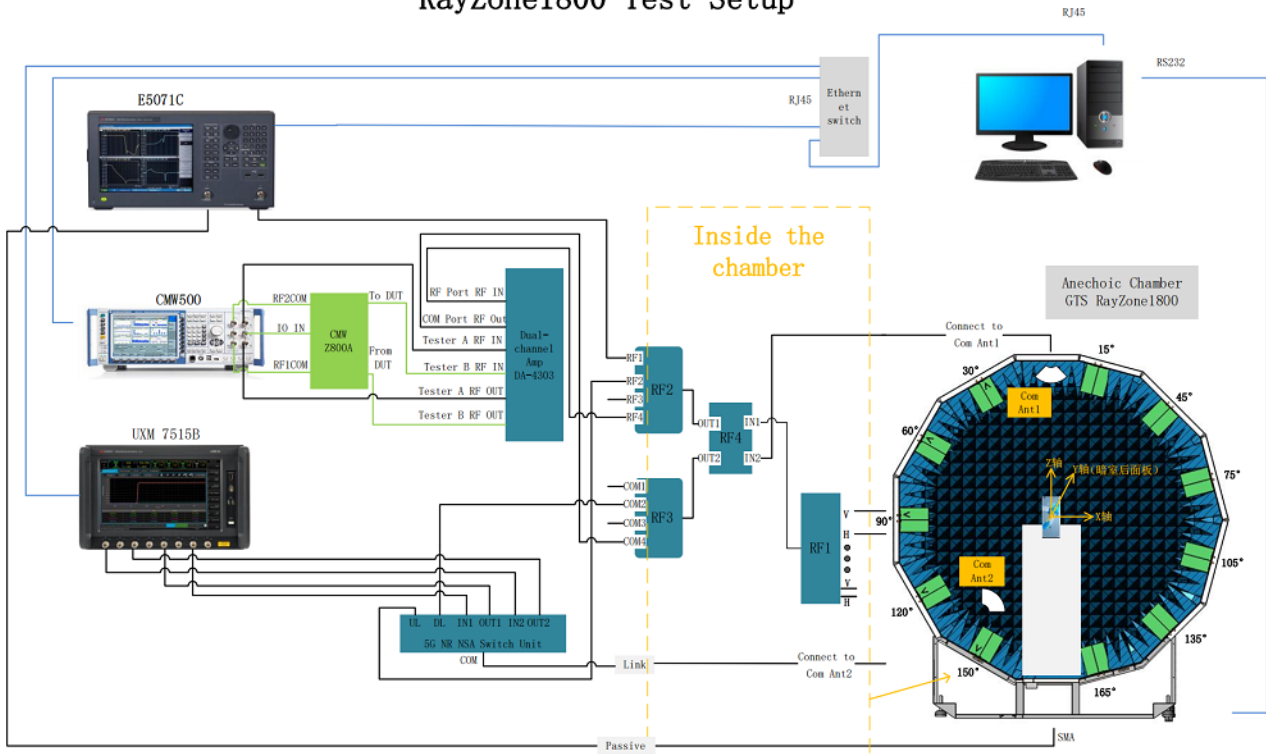


Figure 1 Test coordinate system

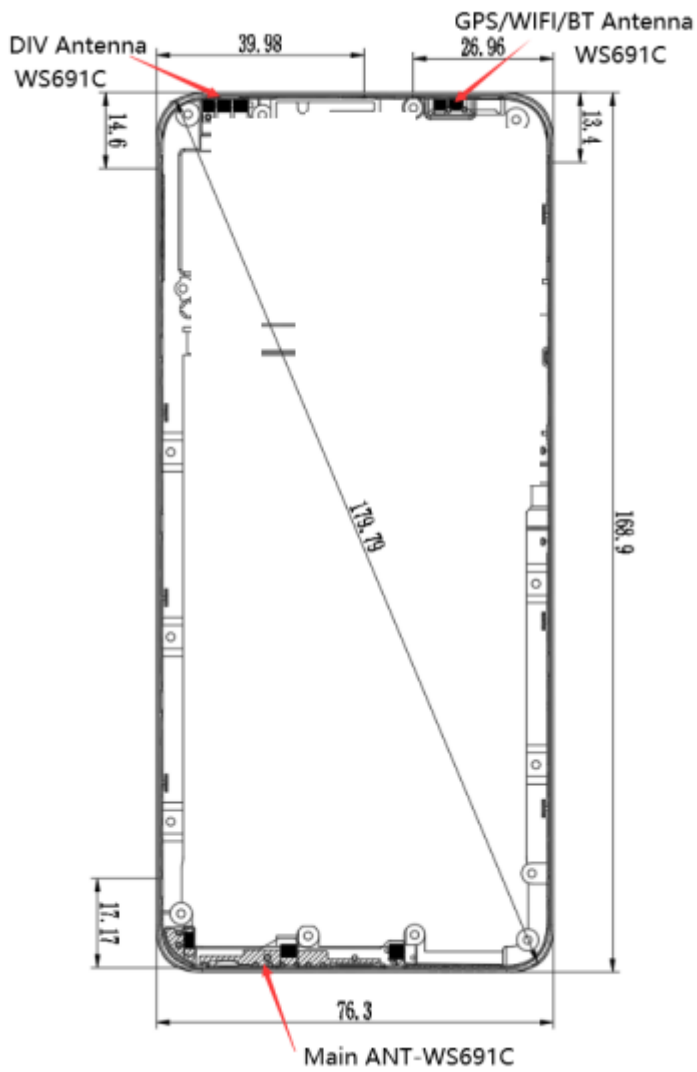
Note: Theta is from 0-180degree. Phi is from EUT and record the Date, the step of rotation is 15 degree.

**Test Setup**

**RayZone1800 Test Setup**



## 4. Antenna location map





All of Implementation antenna

Main antenna(Antenna Label:A):

GSM B5/B8 RX&TX

B2/B3 RX

WCDMA B5/B8 RX&TX

B1/B2/B4 RX

LTE B5/B12/B17/B28/B71 RX&TX

B1/B2/B3/B4/B7/B66 RX

DIV antenna(Antenna Label:B):

GSM B2/B3 RX&TX

WCDMA B1/B2/B4 RX&TX

LTE B1/B2/B3/B4/B7/B66 RX&TX

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

## 5. Test Results

### 5.1 Antenna Max. Peak Gain

GSM850: -2.9dBi

EGSM900: -1.7dBi

DCS1800: -1.9dBi

PCS1900: -1.7dBi

W-B1: -3.3dBi

W-B2: -1.7dBi

W-B4: -1.9dBi

W-B5: -2.9dBi

W-B8: -1.7dBi

LTE-B1: -3.3dBi

LTE-B2: -1.7dBi

LTE-B3: -1.9dBi

LTE-B4: -1.9dBi

LTE-B5: -2.9dBi

LTE-B7: -1.4dBi

LLTE-B12: -0.8dBi

LTE-B17: -0.8dBi

LTE-B28: -0.8dBi

LTE-B66: -1.9dBi

LTE-B71: -3.3dBi

WIFI-2.4G/BT: 2.2dBi

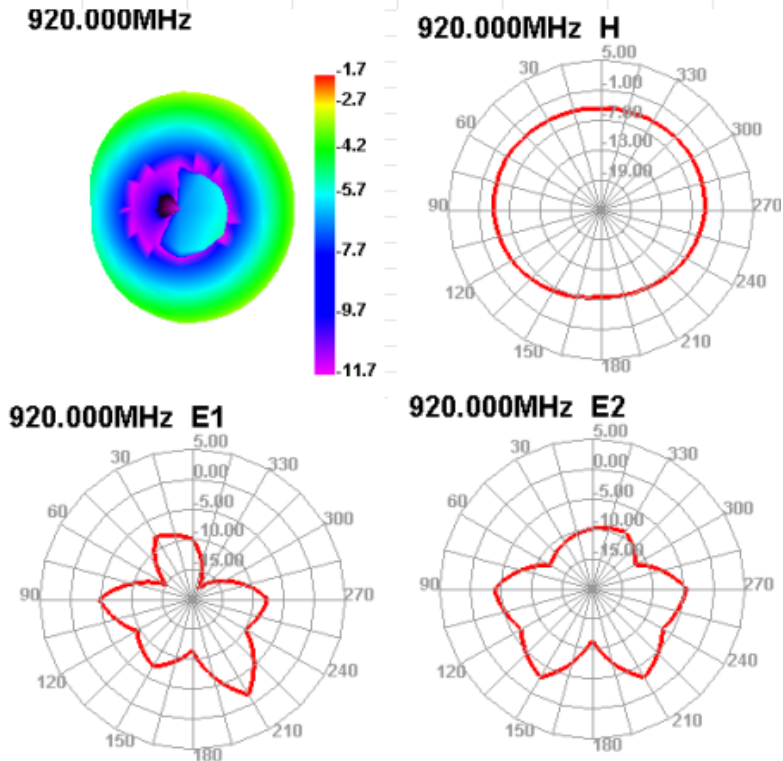
WIFI-5.8G: -2.2dBi

GPS: 0.5dB

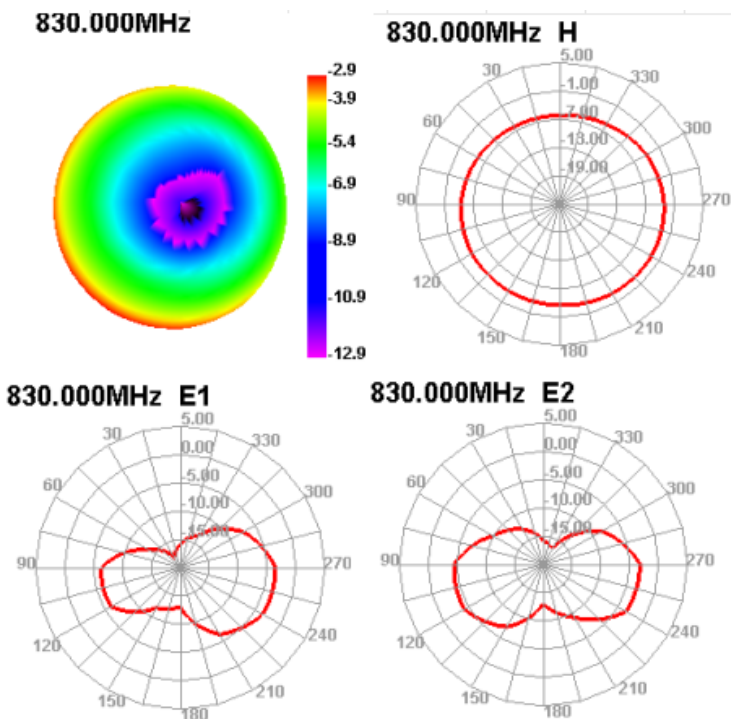


## 5.2 Antenna radiation pattern

GSM900/W-B8

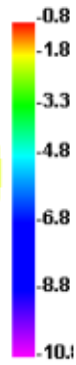
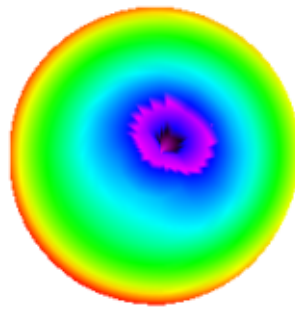


GSM850+W-B5+LTE-B5

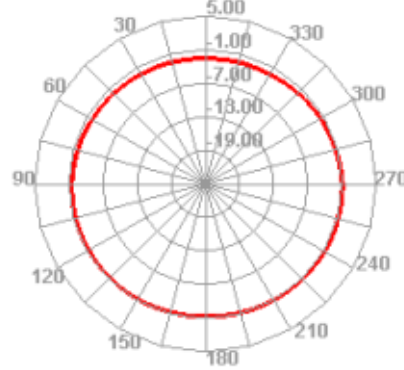


LTE-B12/B17/B28

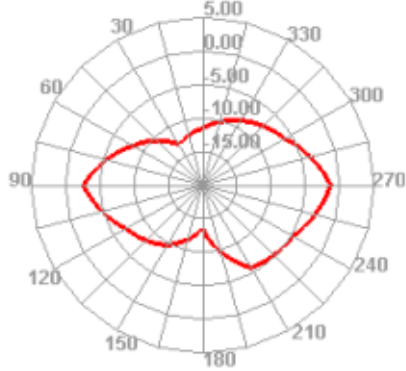
750.000MHz



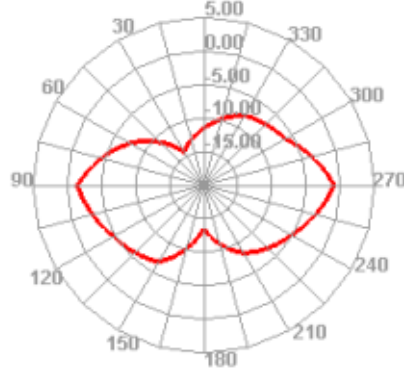
750.000MHz H



750.000MHz E1

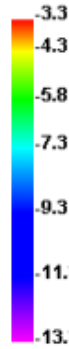
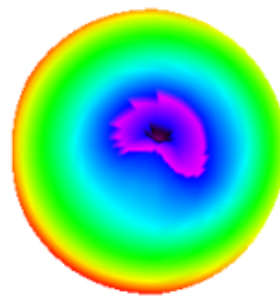


750.000MHz E2

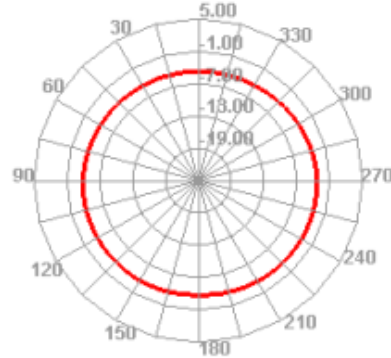


LTE-B71

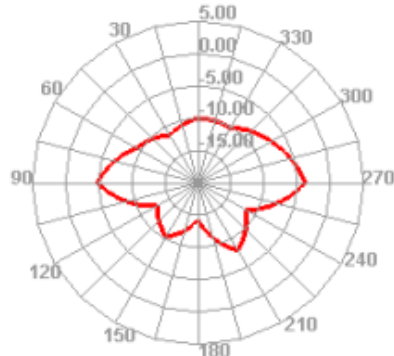
690.000MHz



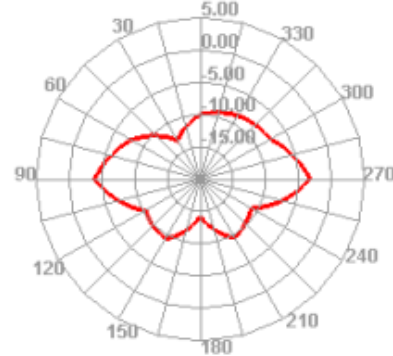
690.000MHz H



690.000MHz E1



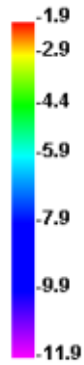
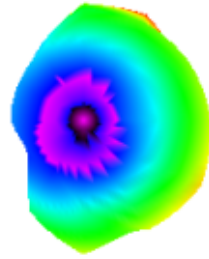
690.000MHz E2



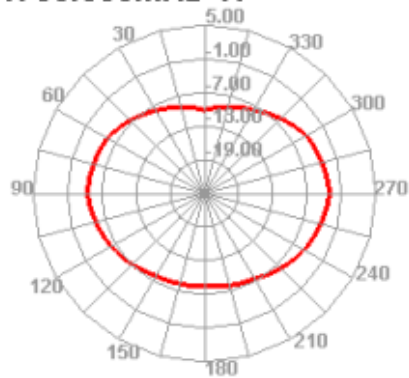


DCS1800+W-B4+LTE-B3/B4/B66

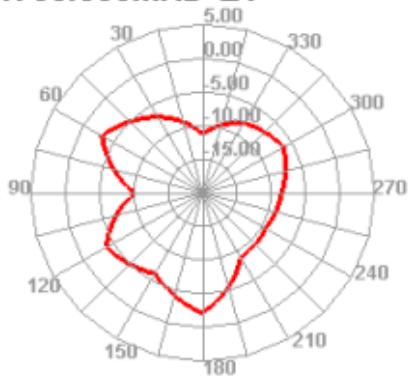
1750.000MHz



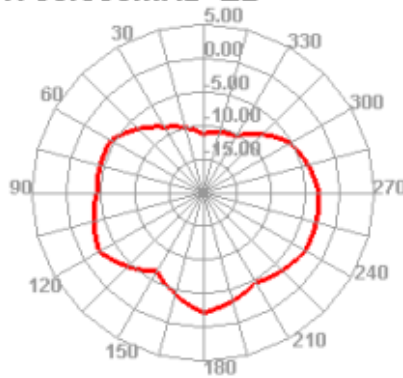
1750.000MHz H



1750.000MHz E1

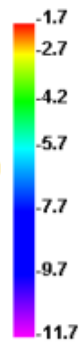
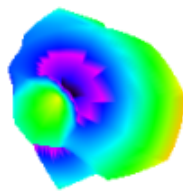


1750.000MHz E2

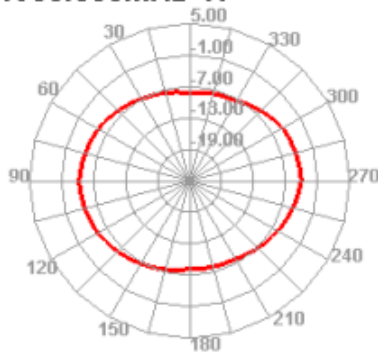


PCS1900+W-B2+LTE-B2

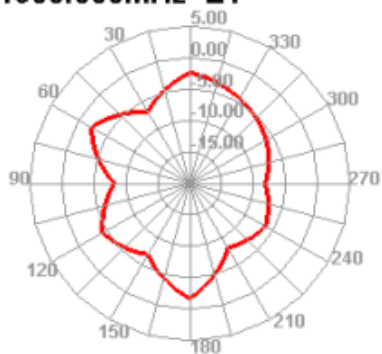
1900.000MHz



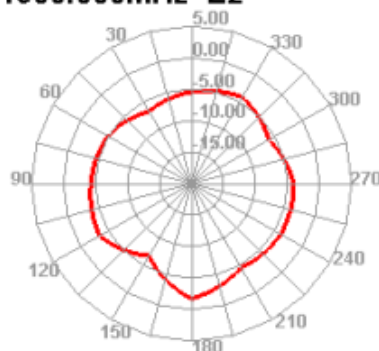
1900.000MHz H



1900.000MHz E1

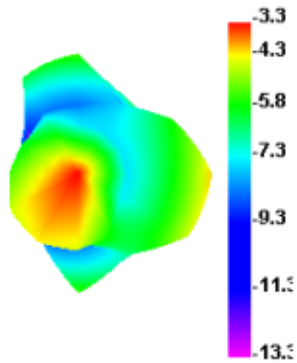


1900.000MHz E2

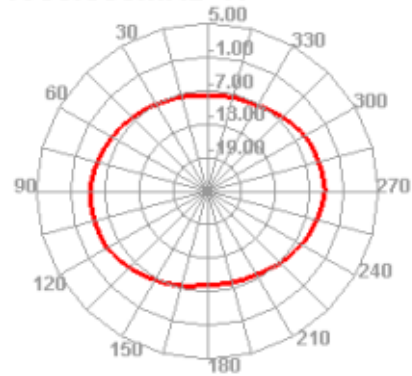


W-B1+LTE-B1

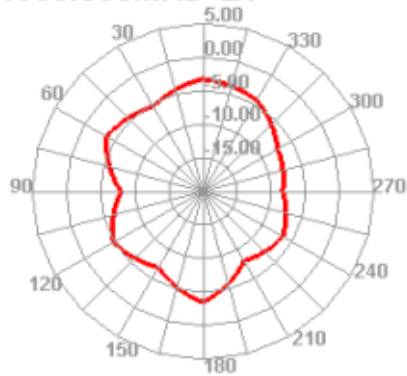
1950.000MHz



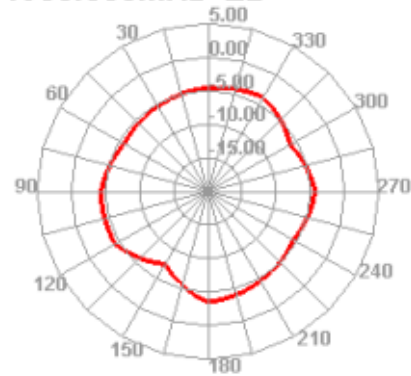
1950.000MHz H



1950.000MHz E1

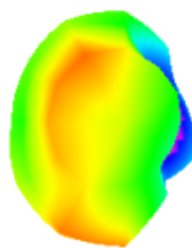


1950.000MHz E2

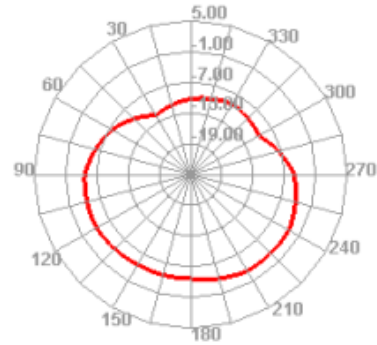


LTE-B7

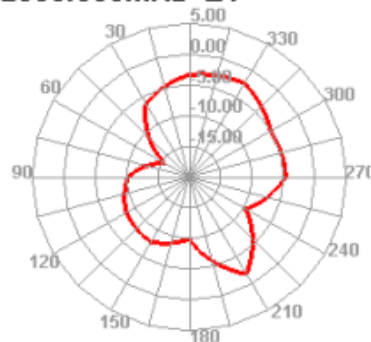
2550.000MHz



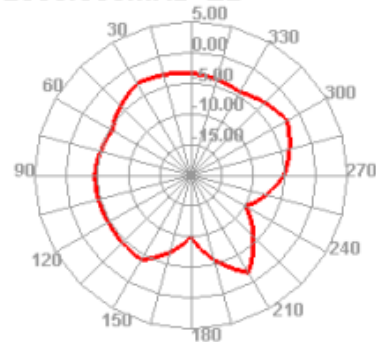
2550.000MHz H



2550.000MHz E1

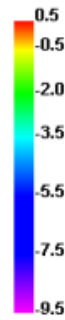
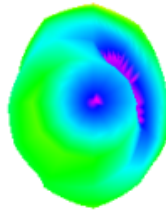


2550.000MHz E2

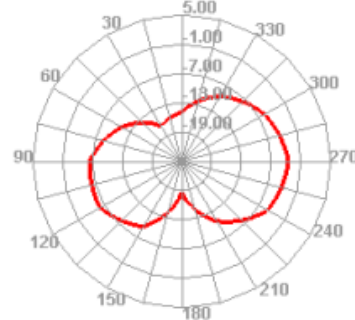


GPS

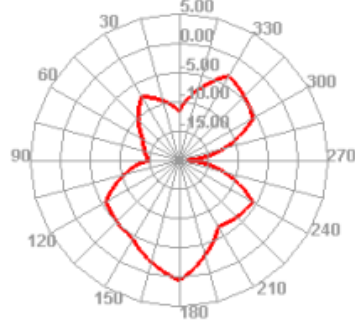
1575.000MHz



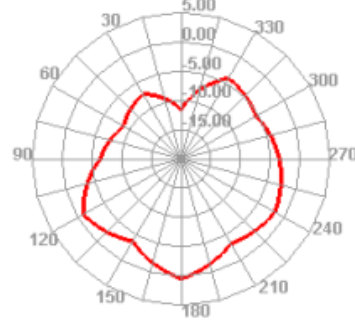
1575.000MHz H



1575.000MHz E1

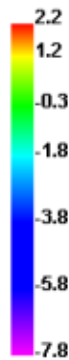
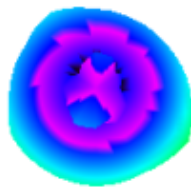


1575.000MHz E2

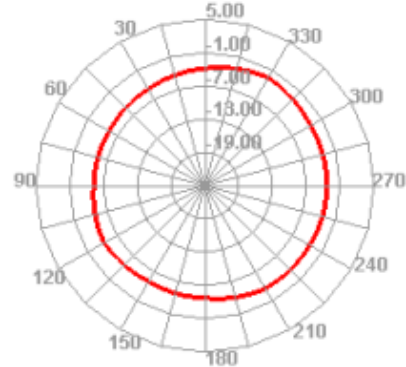


WIFI 2.4G

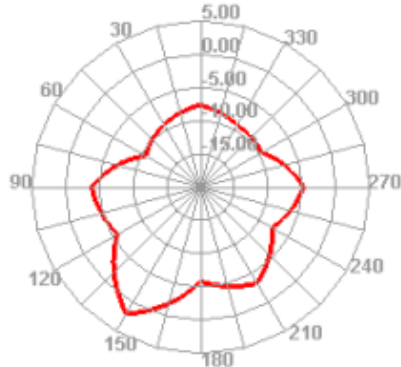
2450.000MHz



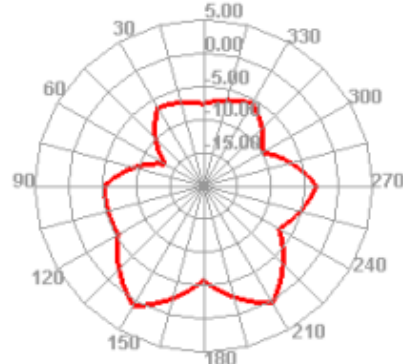
2450.000MHz H



2450.000MHz E1

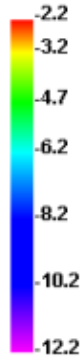
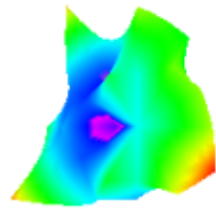


2450.000MHz E2

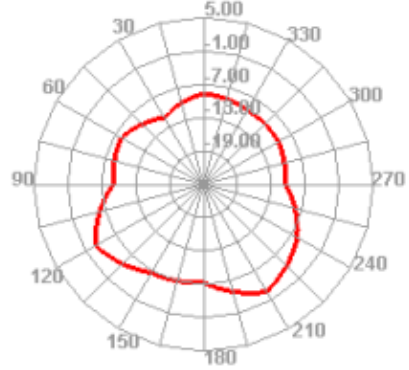


WIFI 5.8G

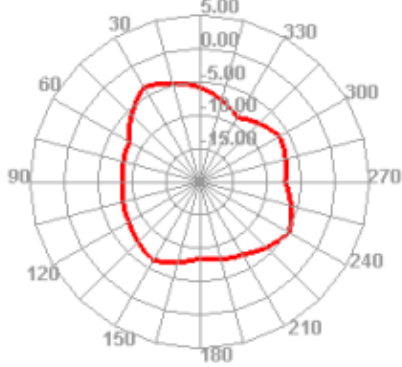
5500.000MHz



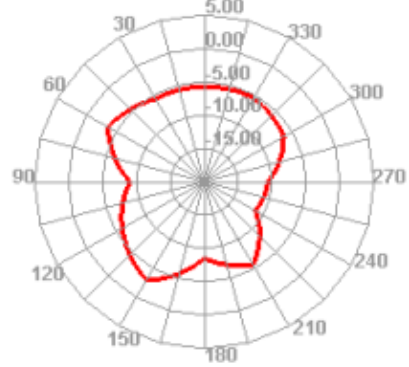
5500.000MHz H



5500.000MHz E1



5500.000MHz E2



## 5. Equipment List

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

## ANNEX B: The Test Configuration

