SPECIFICATION

Part No. : **GW.71.5153**

Product Name : 2.4GHz/5.8GHz Dipole Antenna for ISM Band and WLAN
IEEE 802.11a/b/g/h

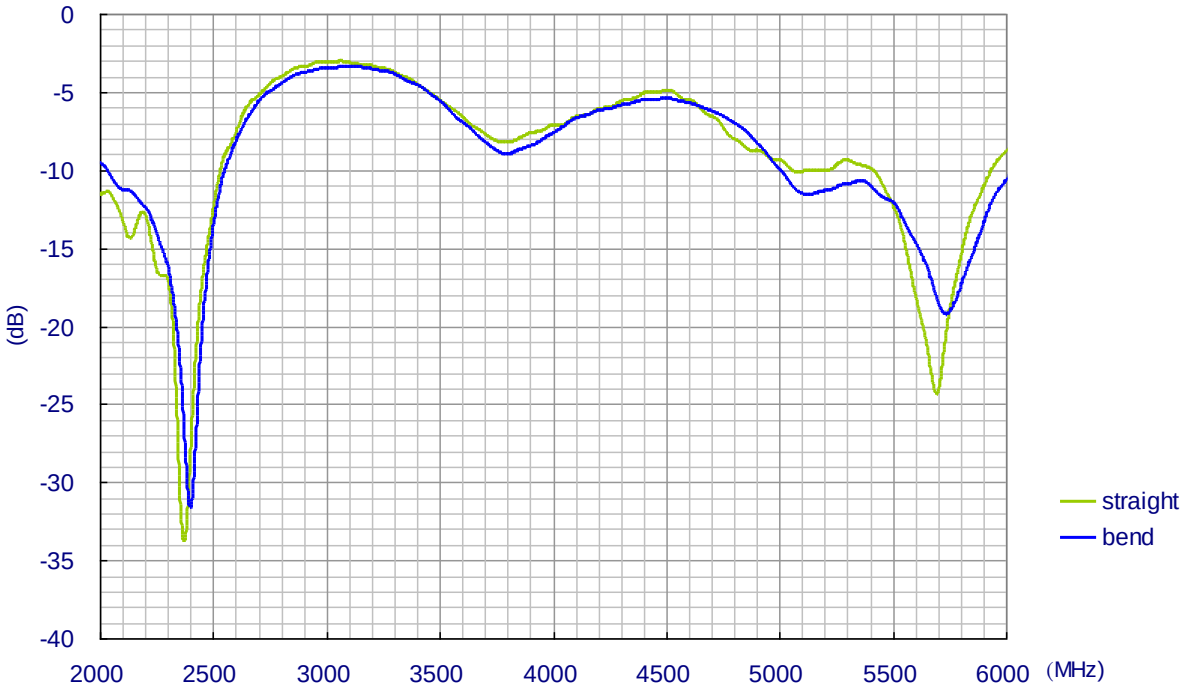
Feature : 5dBi High Performance Antenna
RP-SMA(M) Hinged Antenna
RoHS Compliant

1. Specification

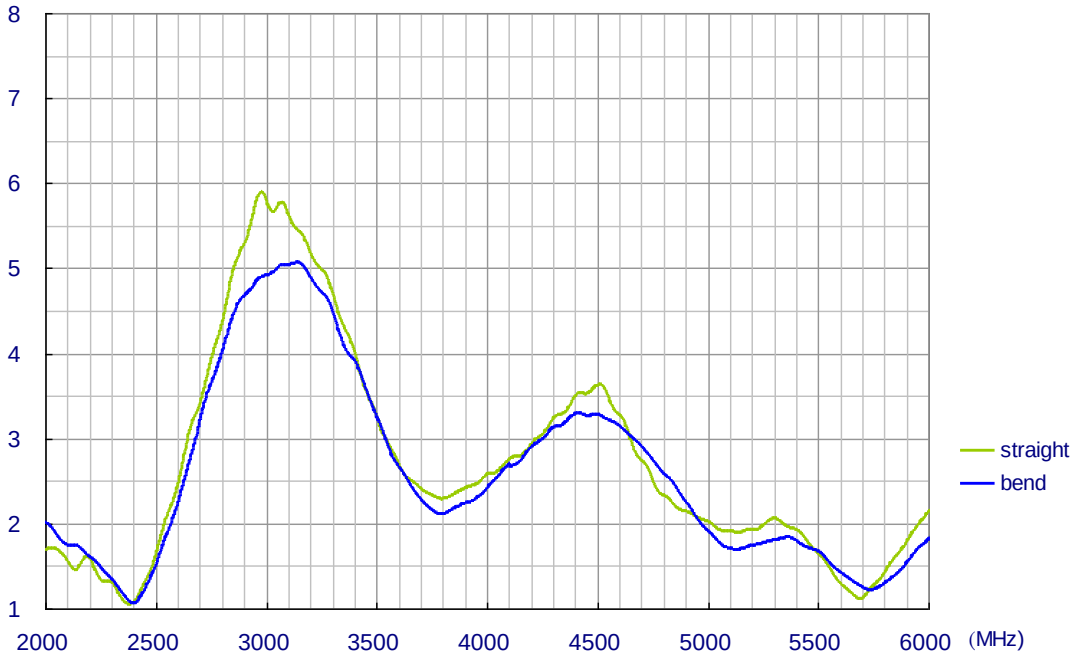
ELECTRICAL		
Frequency	2.4 ~ 2.5GHz,	4.9 ~ 5.8GHz
VSWR	<2	<2.1
Peak Gain (straight)	3.3dBi	4.9dBi
Peak Gain (bend)	3.8dBi	5.5dBi
Average Gain (straight)	-0.9dBi	-1.5dBi
Average Gain (bend)	-0.7dBi	-0.0dBi
Efficiency (straight)	80%	71%
Efficiency (bend)	86%	83%
Polarization	Linear	
Impedance	50 Ohms	
Radiation Pattern	Omni	
Input Power	2W max.	
MECHANICAL		
Antenna Length	194mm	
Antenna Diameter	12.8mm	
Antenna Body Material	TPU	
ENVIRONMENTAL		
Temperature Range	-40°C to 85°C	
Humidity	Non-condensing 65°C 95% RH	

2. Antenna S11 Property

2.1. Return Loss

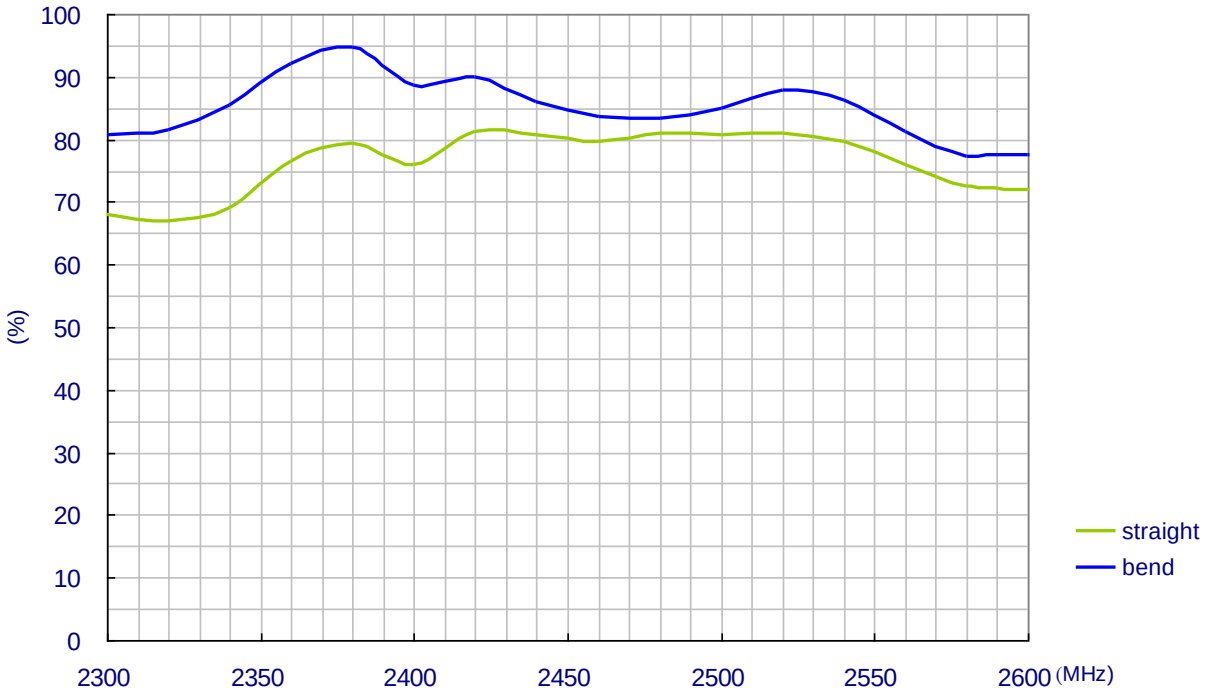


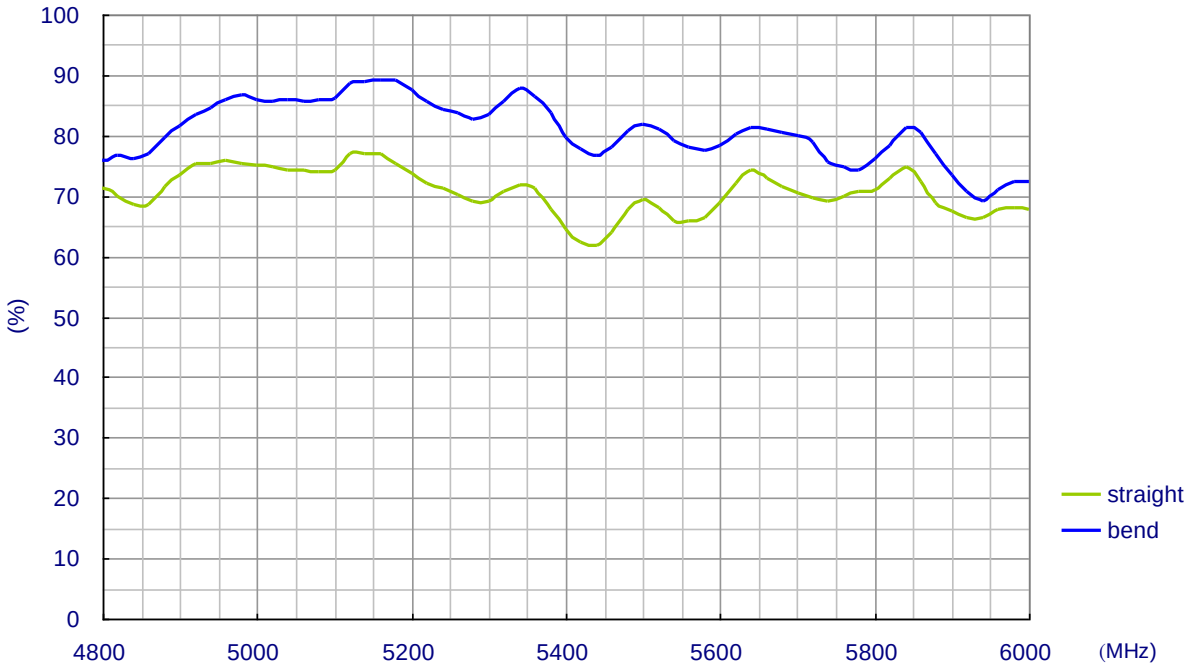
2.2. VSWR



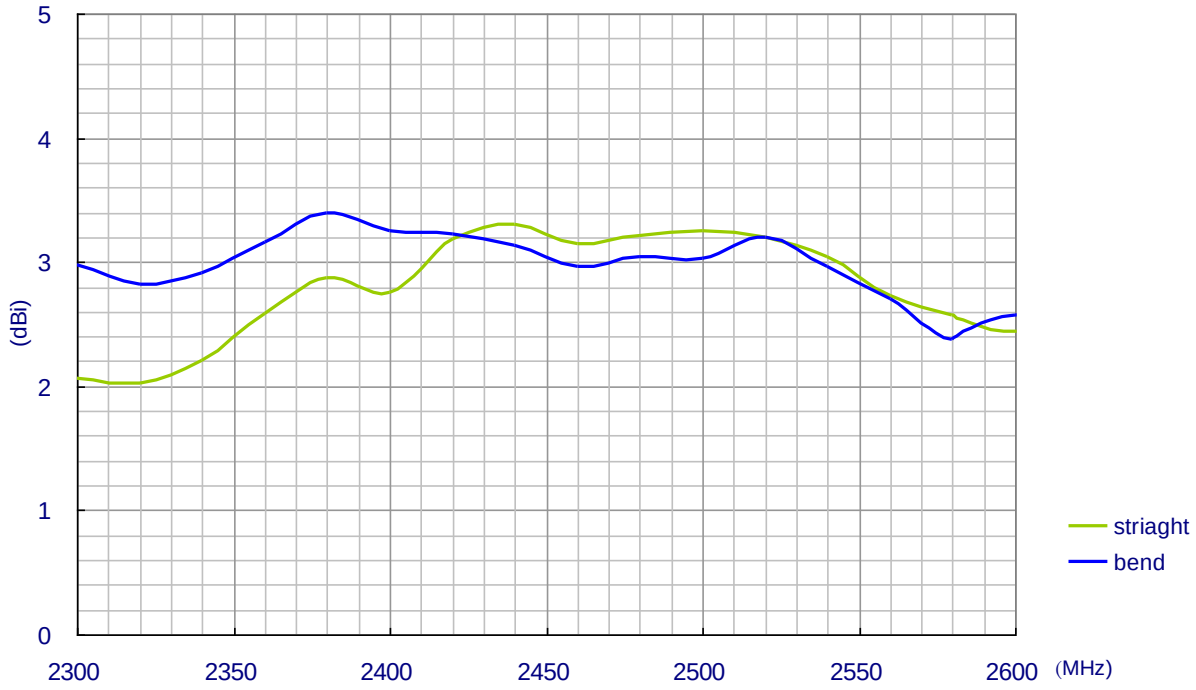
3. 3D Radiation Property

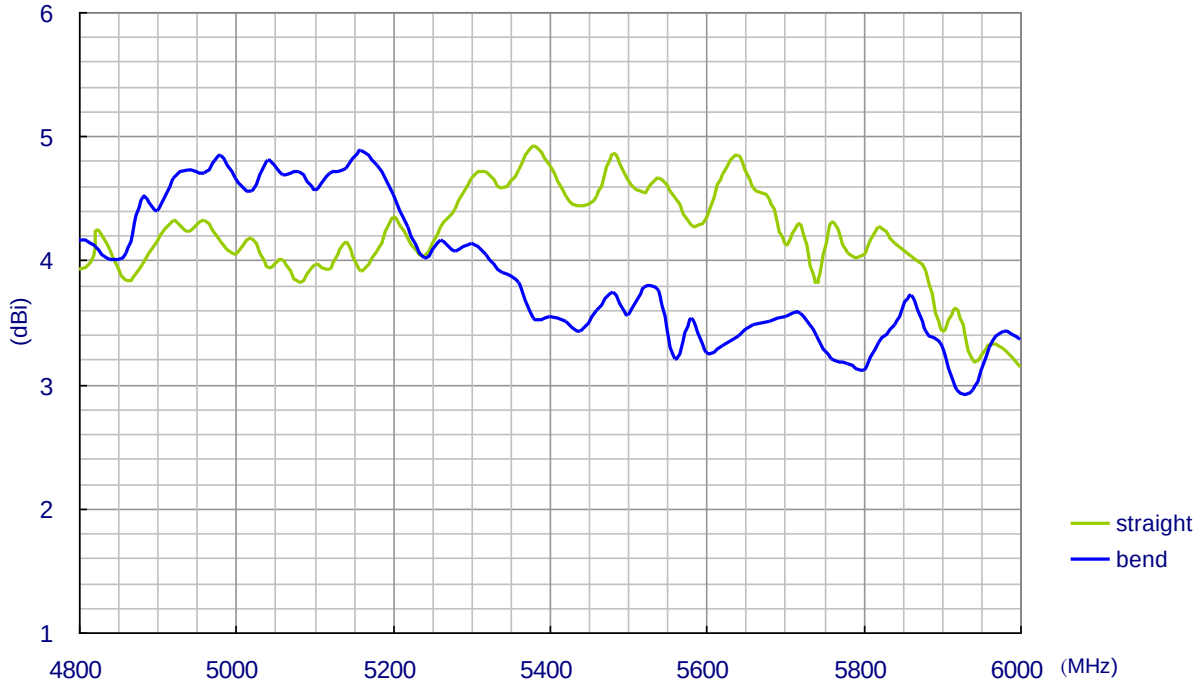
3.1. Radiation Efficiency



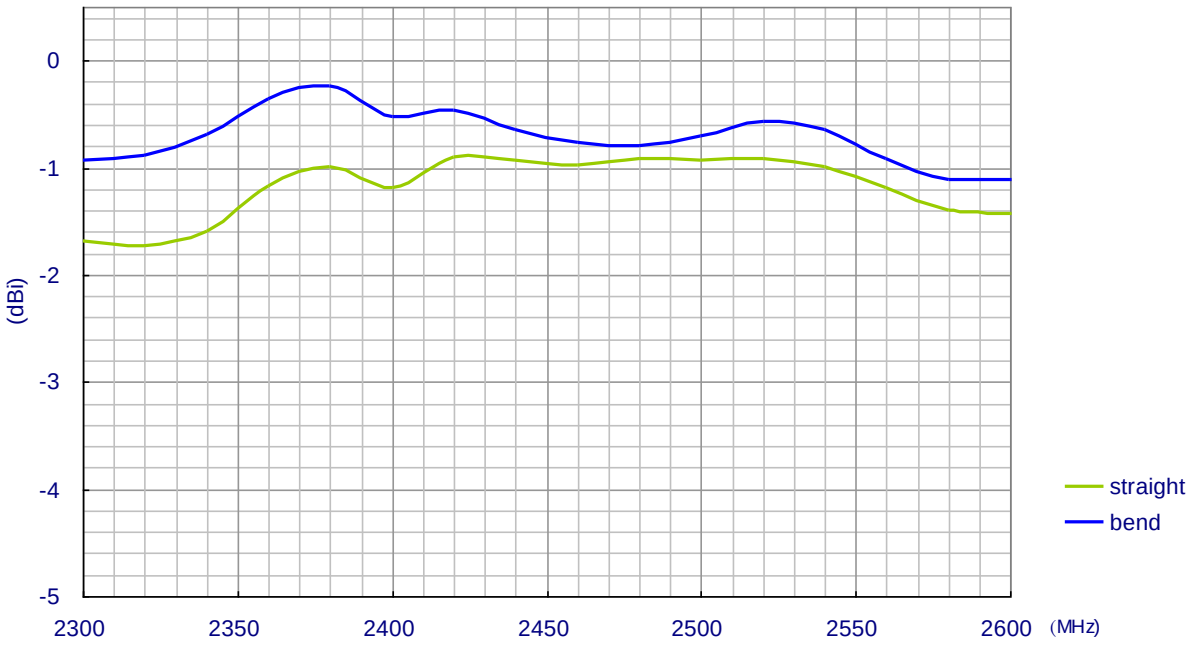


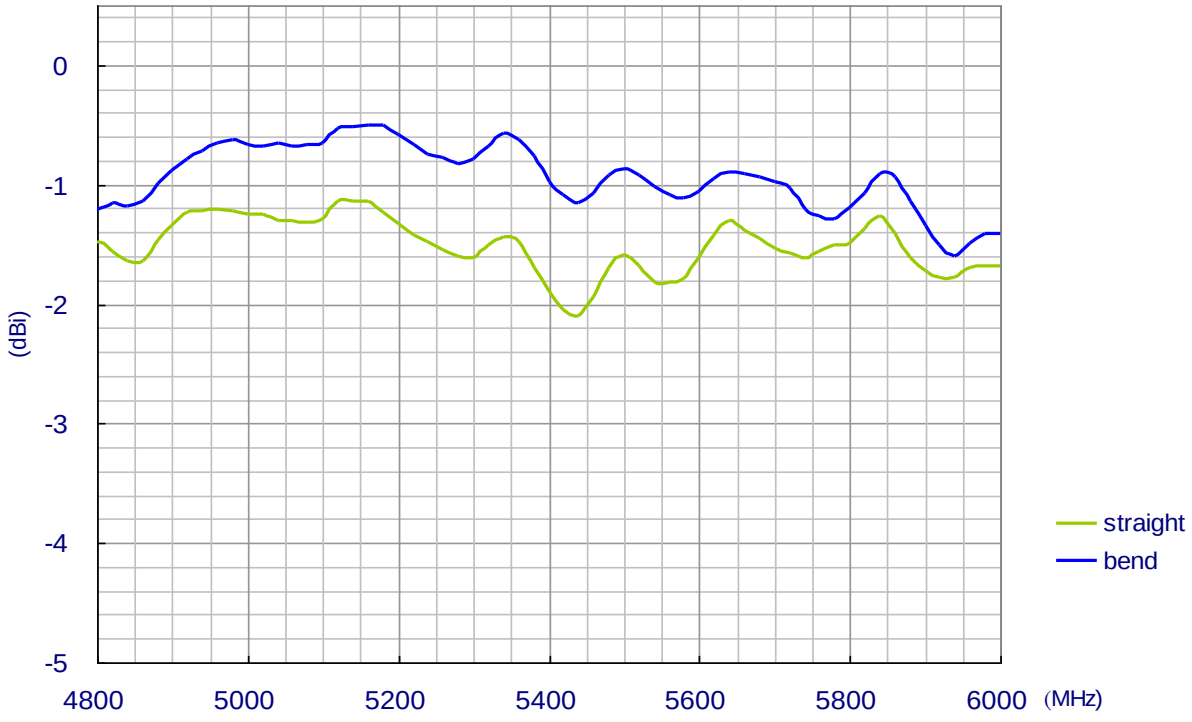
3.2. Peak Gain


5
4
3
2
1
0
(dBi)
2300
2350
2400
2450
2500
2550
2600
(MHz)
striaght
bend


6
5
4
3
2
1
(dBi)
4800
5000
5200
5400
5600
5800
6000
(MHz)
straight
bend

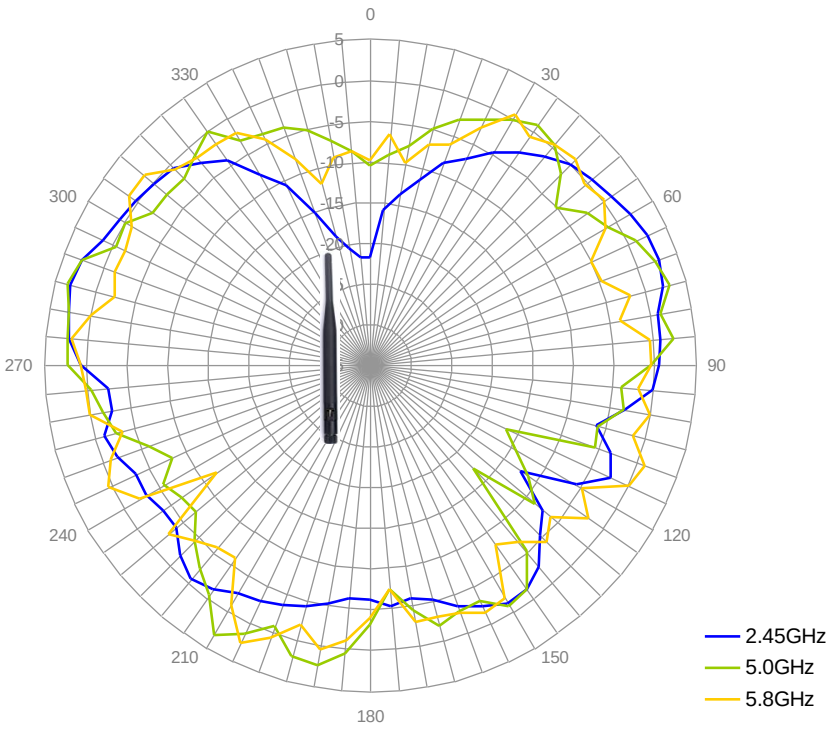
3.3. Average Gain



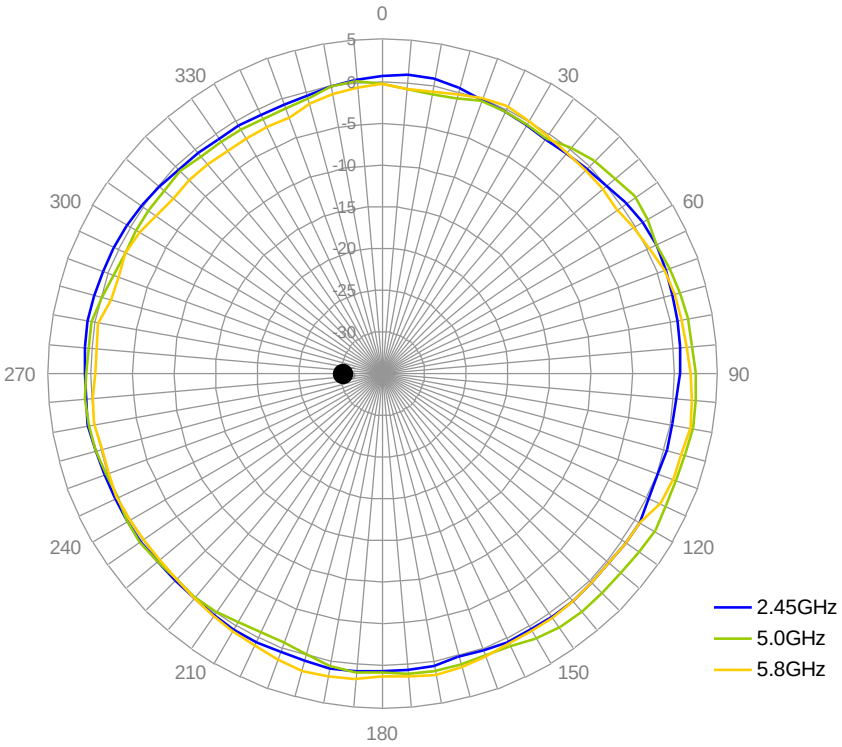


3.4. Radiation Pattern

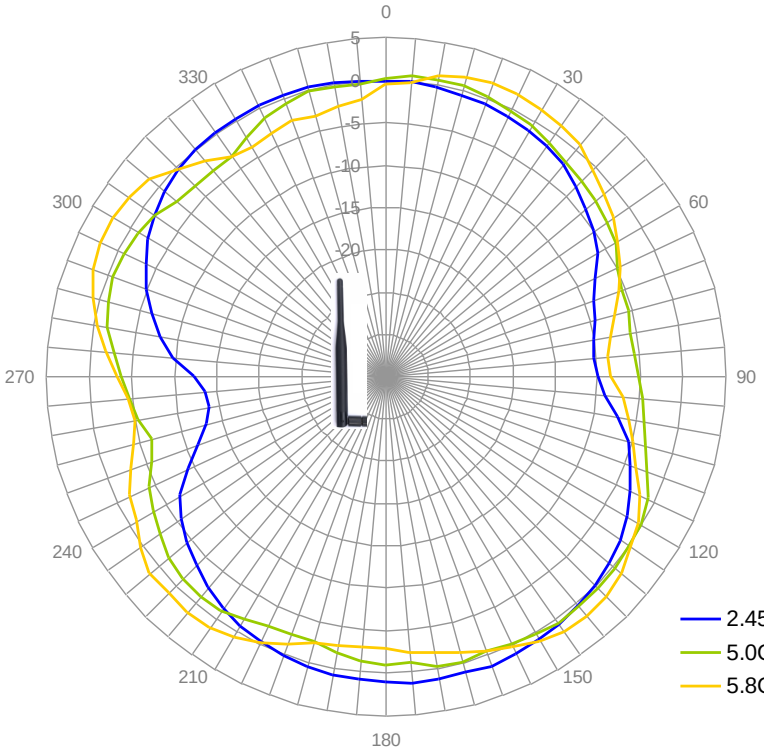
E-Plane Radiation of Straight Position



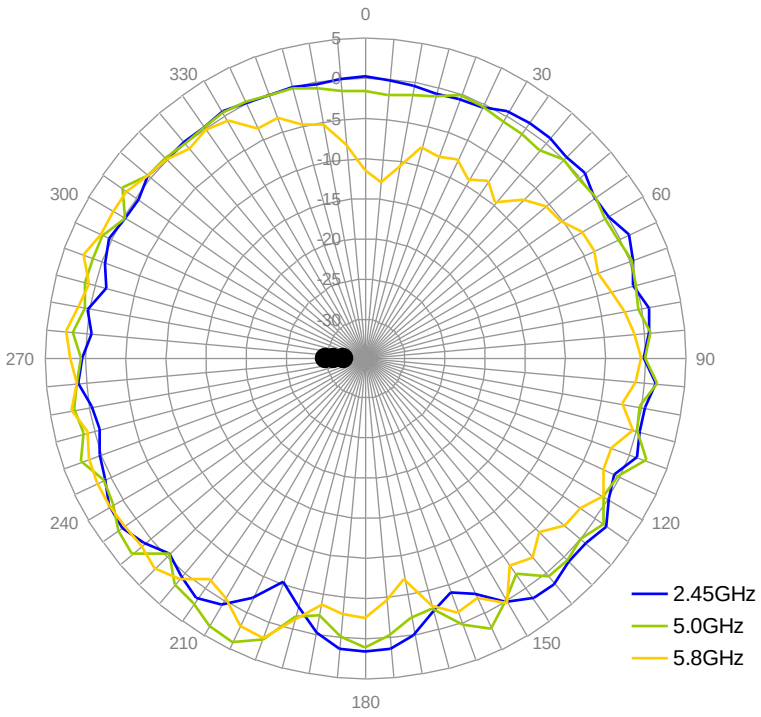
H-Plane Radiation of Straight Position



E-Plane Radiation of Bend Position



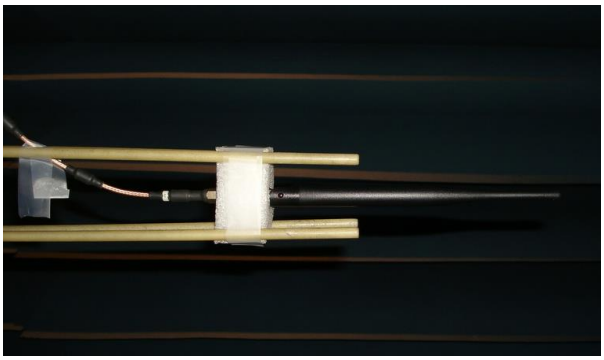
H-Plane Radiation of Bend Position



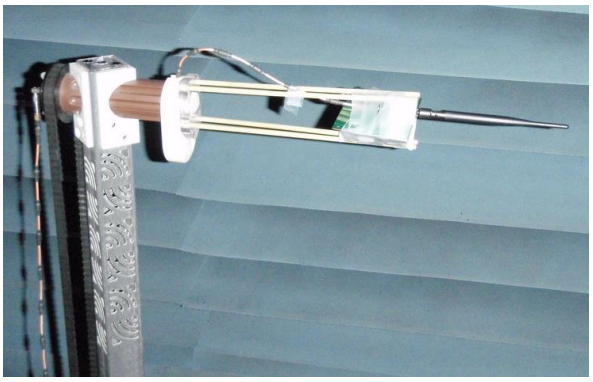
4. Ground Plane Effect

Three ground setups are used to see the affect of positioning GW.71 close to ground -

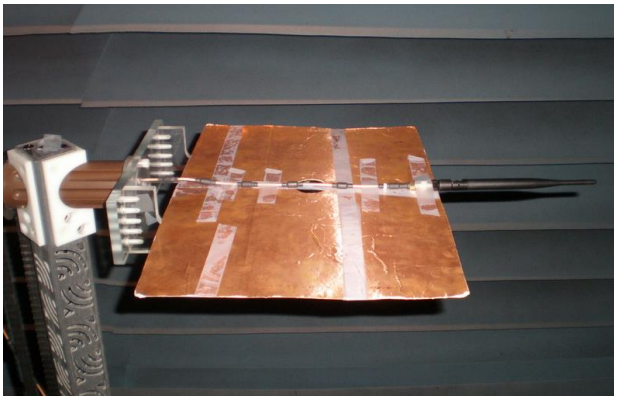
1. Small Ground (15 x 9cm) – common size of CPE devices. GW.71 is mounted at the longer edge for testing.
2. Big Ground Edge (45 x 30cm) – simulate the effect of mounting antenna on a base station device. GW.71 is mounted at the centre of the longer edge.
3. Big Ground Centre (45 x 30cm) – simulate the effect of mounting antenna in a centre of a big ground plane, such as vehicle top.



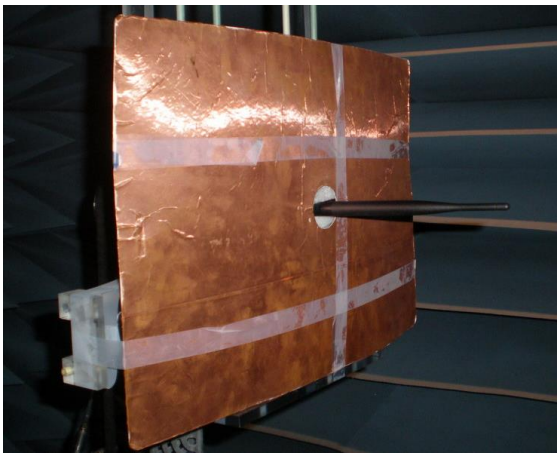
Free space



Small ground edge



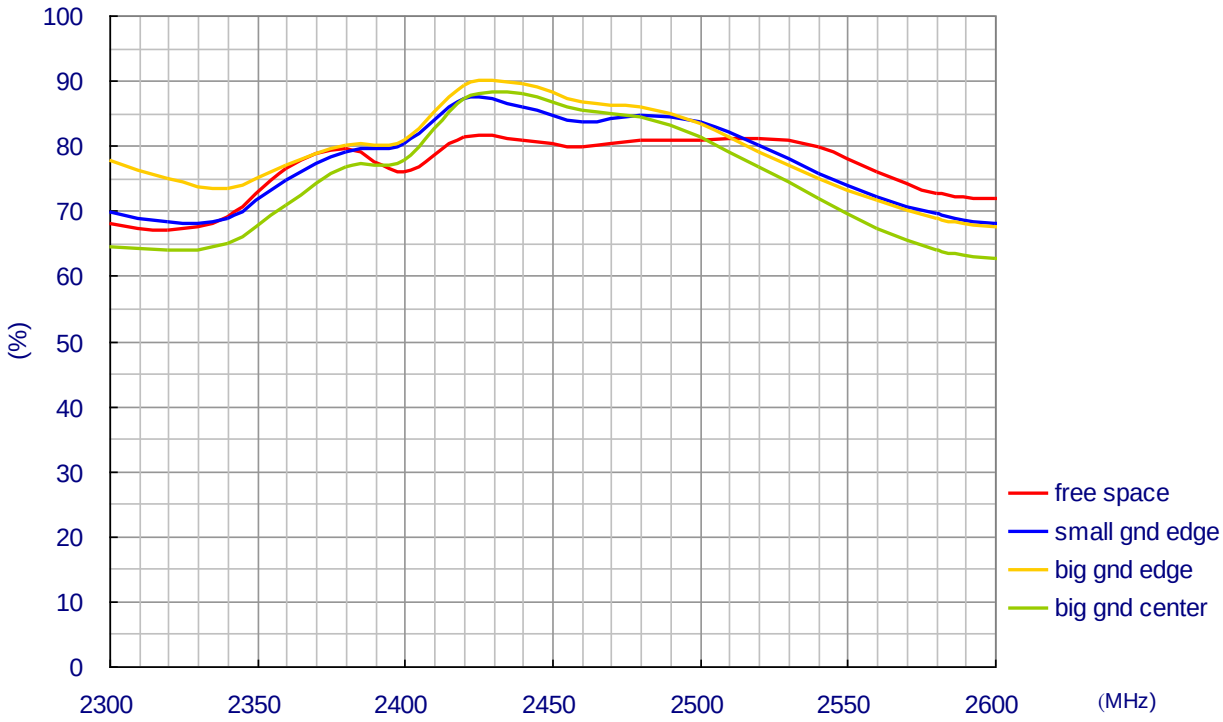
Big ground edge

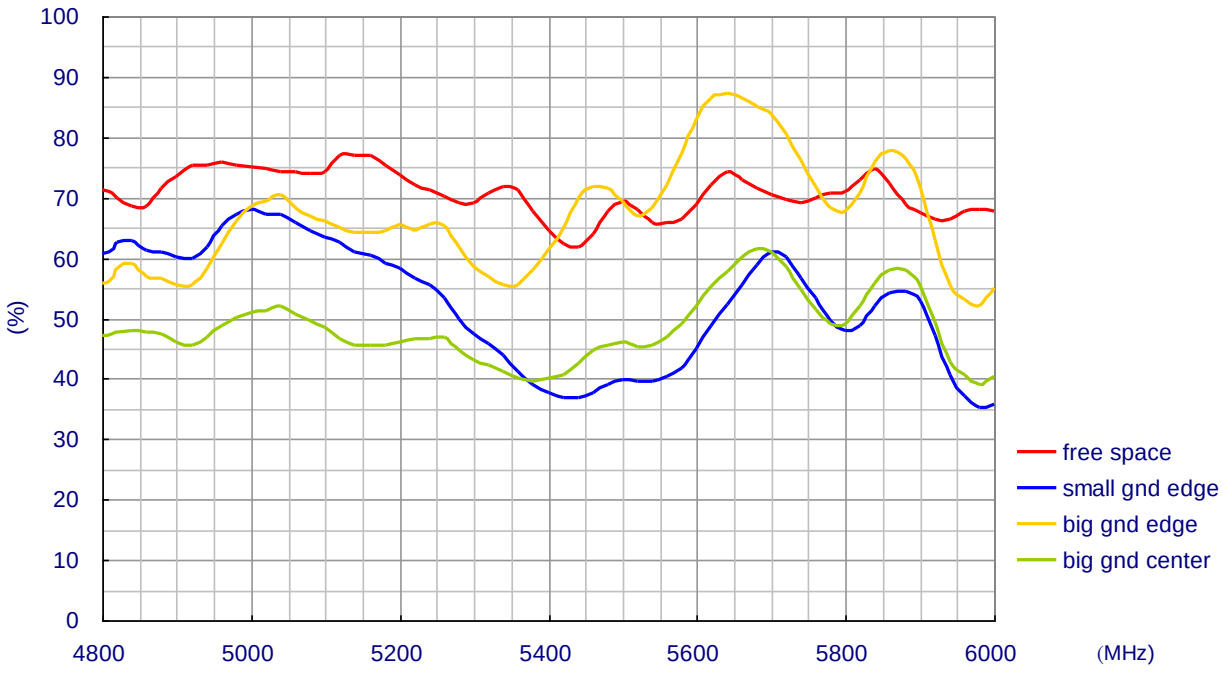


Big ground center

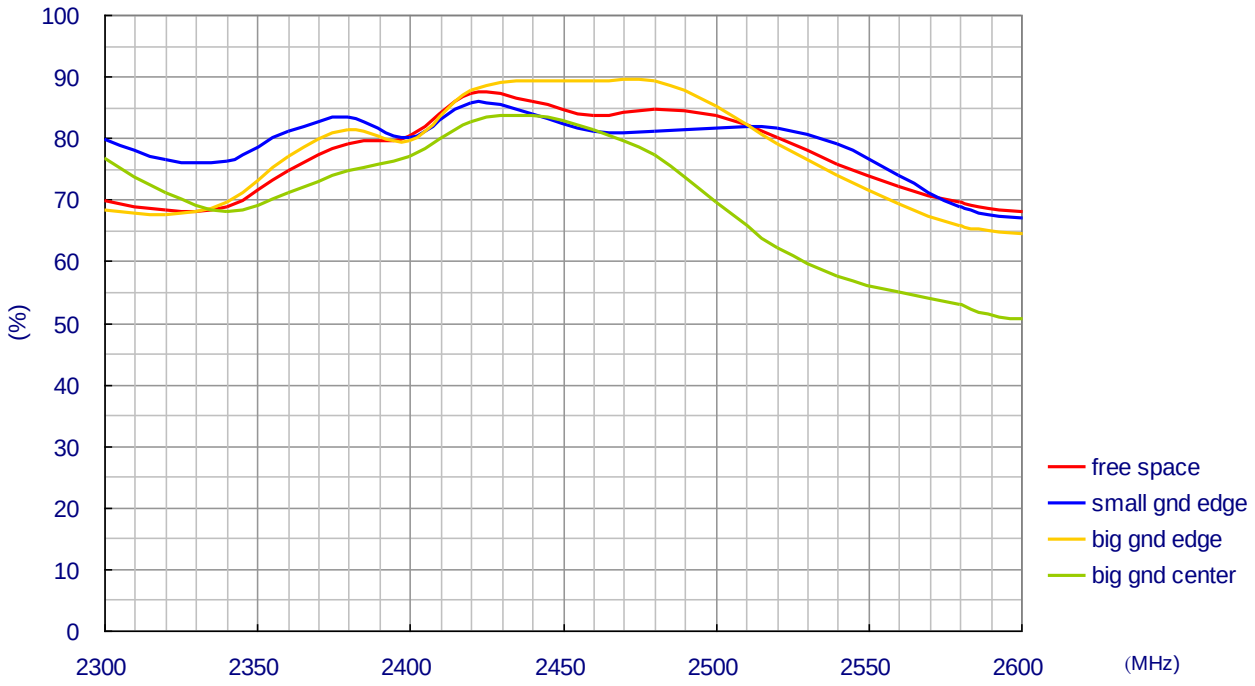
5. Radiation Property of GW.71 with Different Ground

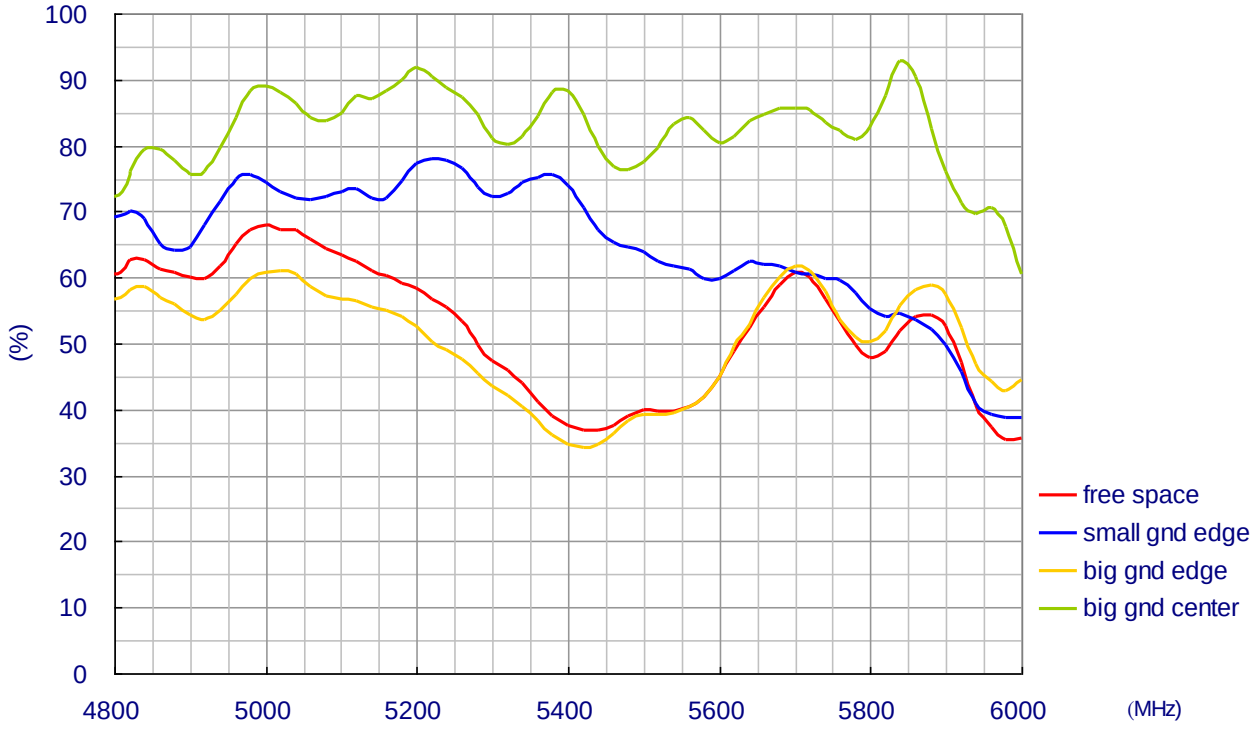
5.1. Radiation Efficiency of Straight GW.71



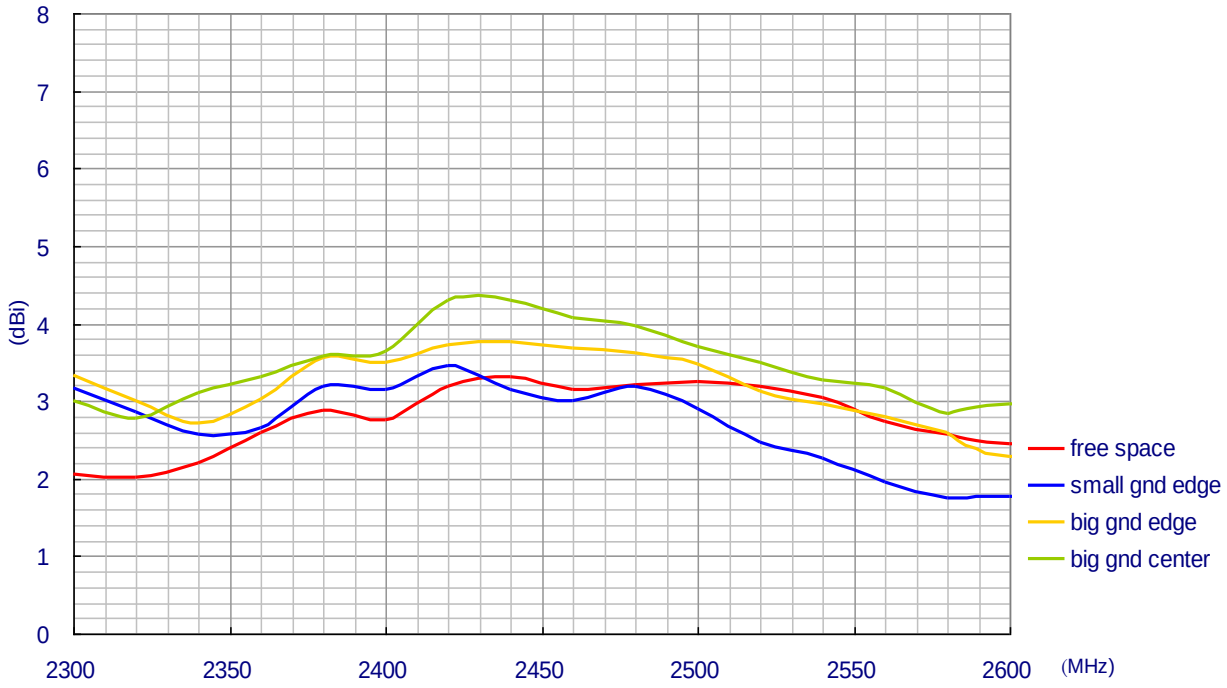


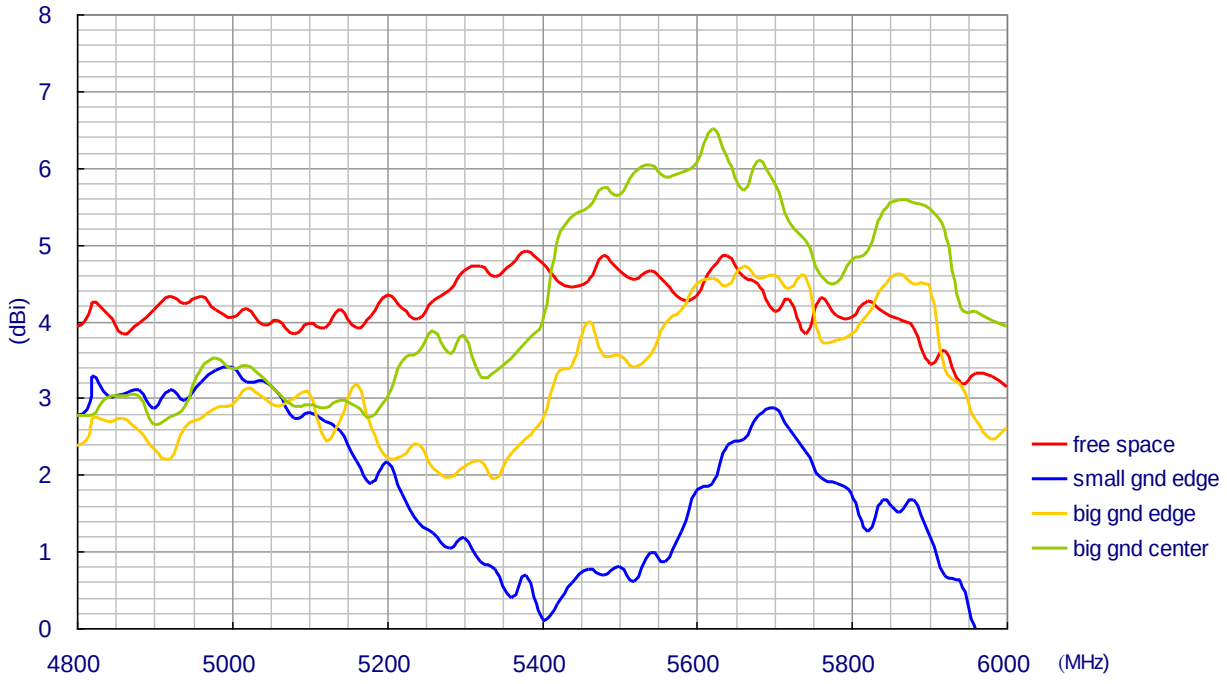
5.2. Radiation Efficiency of Bend GW.71



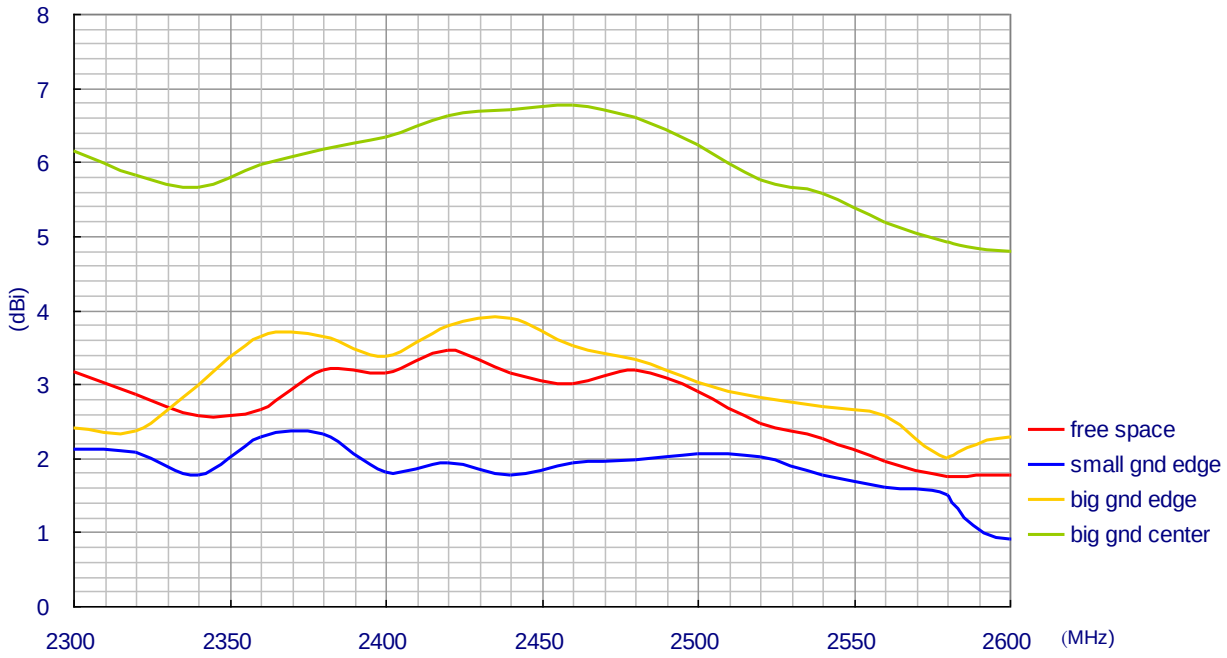


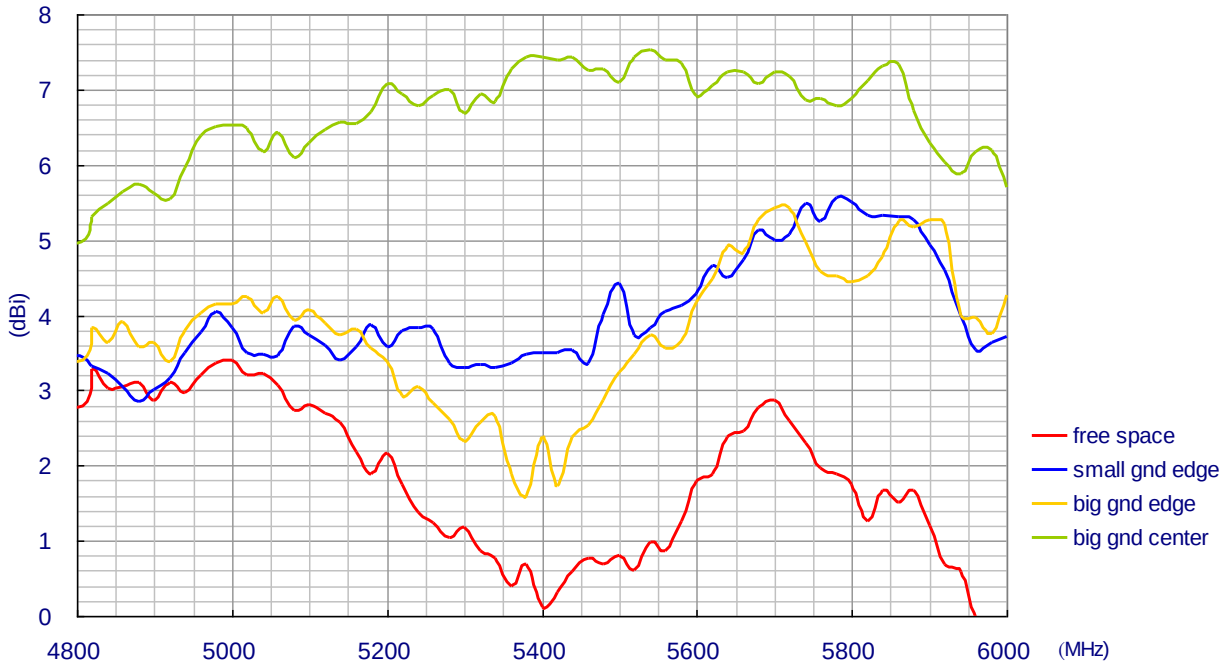
5.3. Peak Gain of Straight GW.71



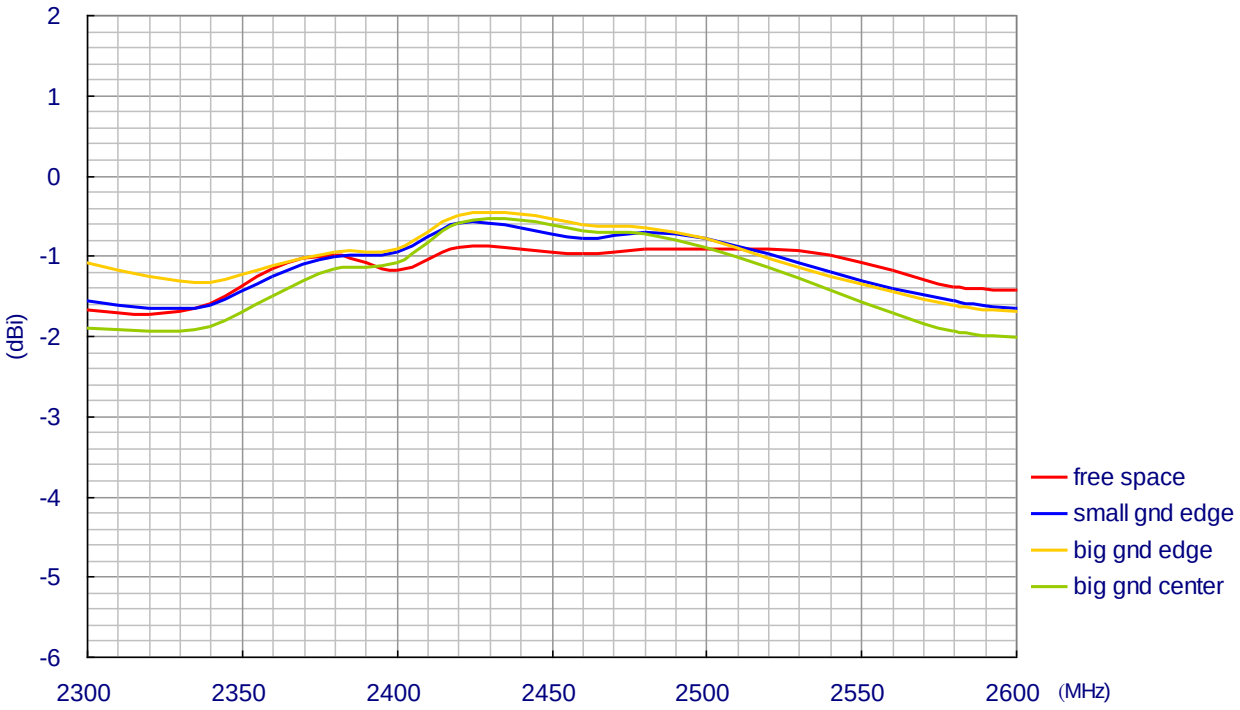


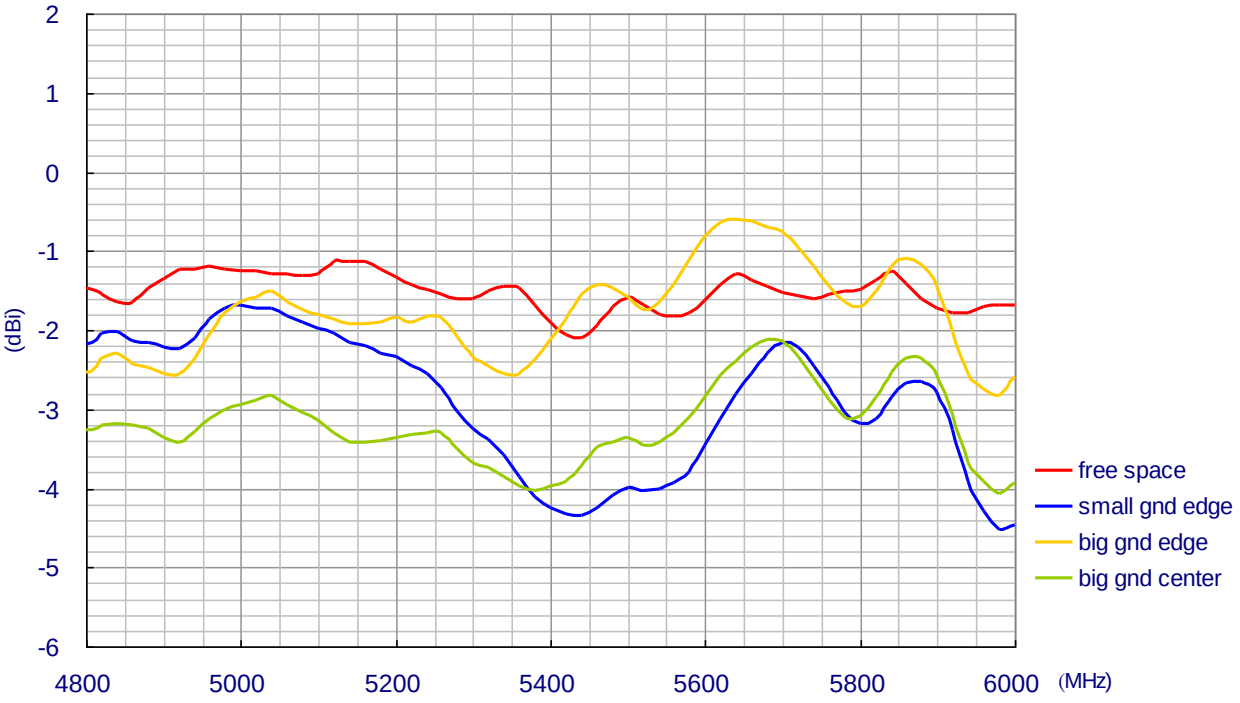
5.4. Peak Gain of Bend GW.71



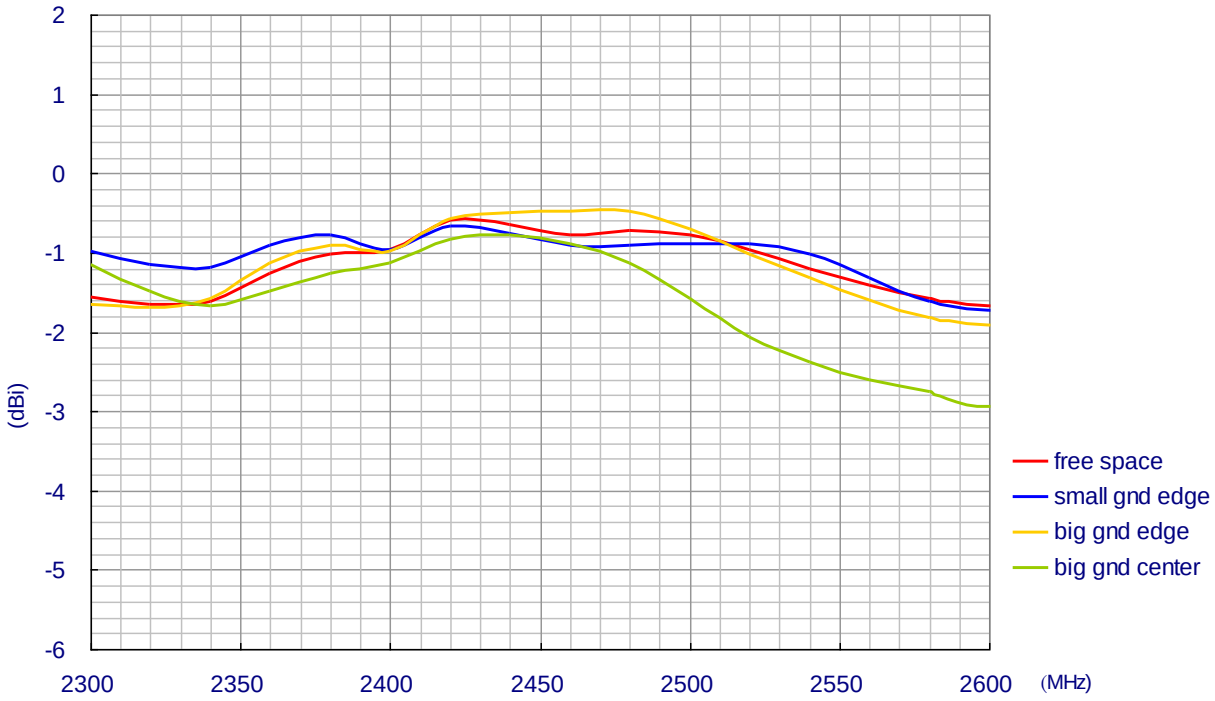


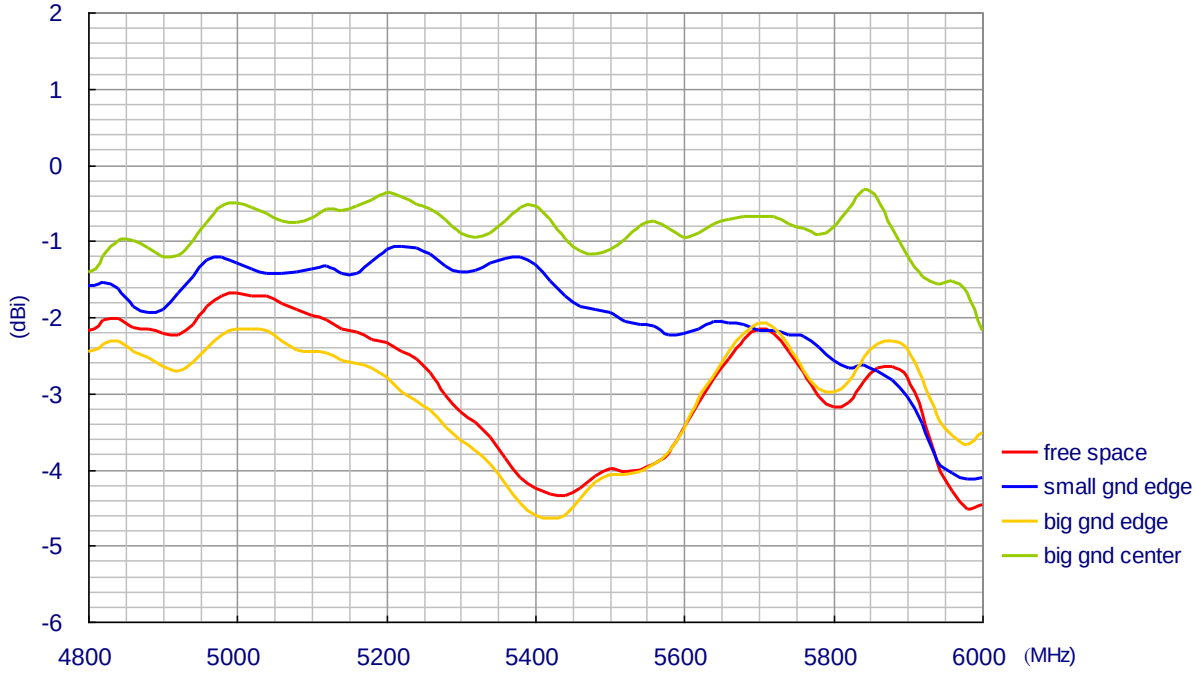
5.5. Average Gain of Straight GW.71





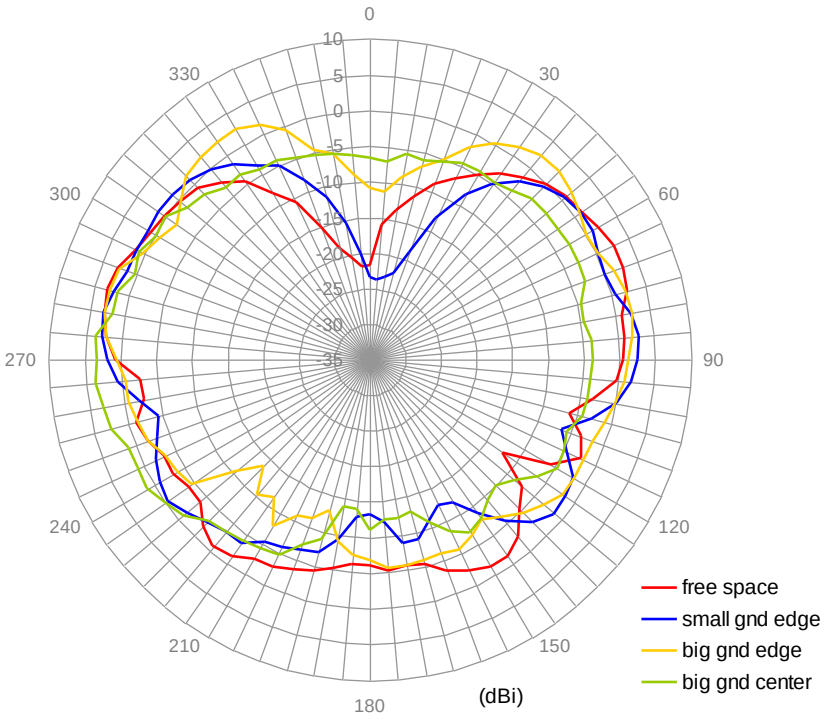
5.6. Average Gain of Bend GW.71



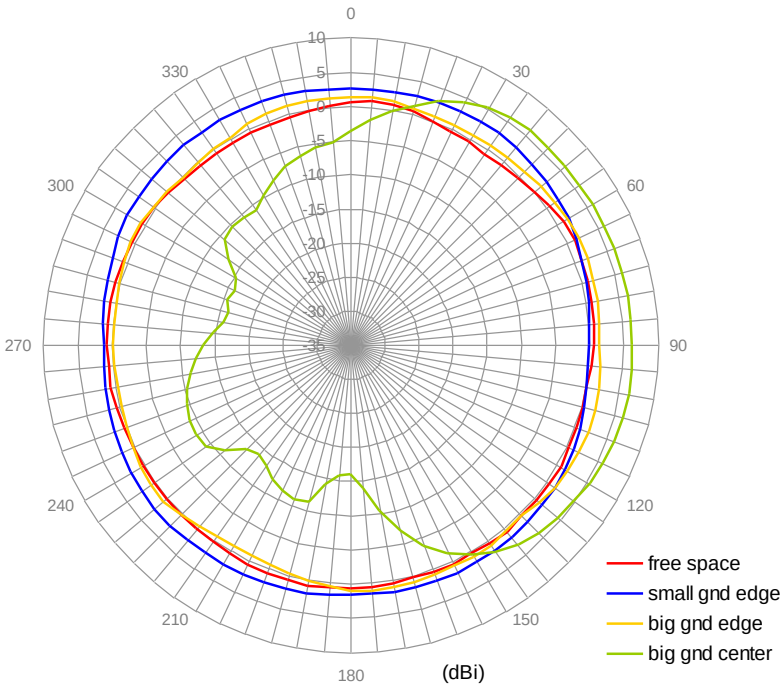


5.7. Radiation Pattern of Straight GW.71 at 2.45GHz

E-Plane Radiation

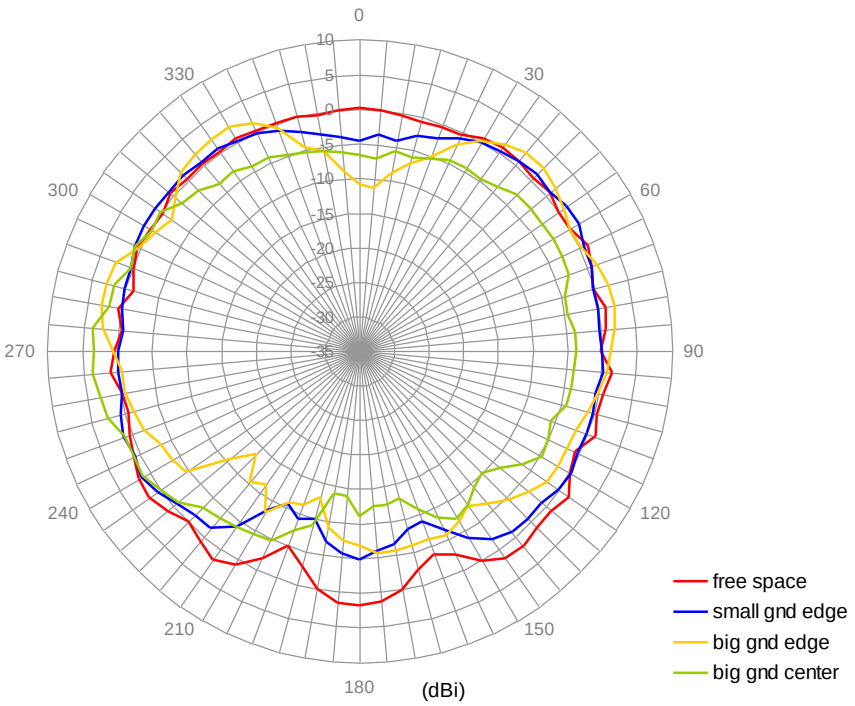


H-Plane Radiation

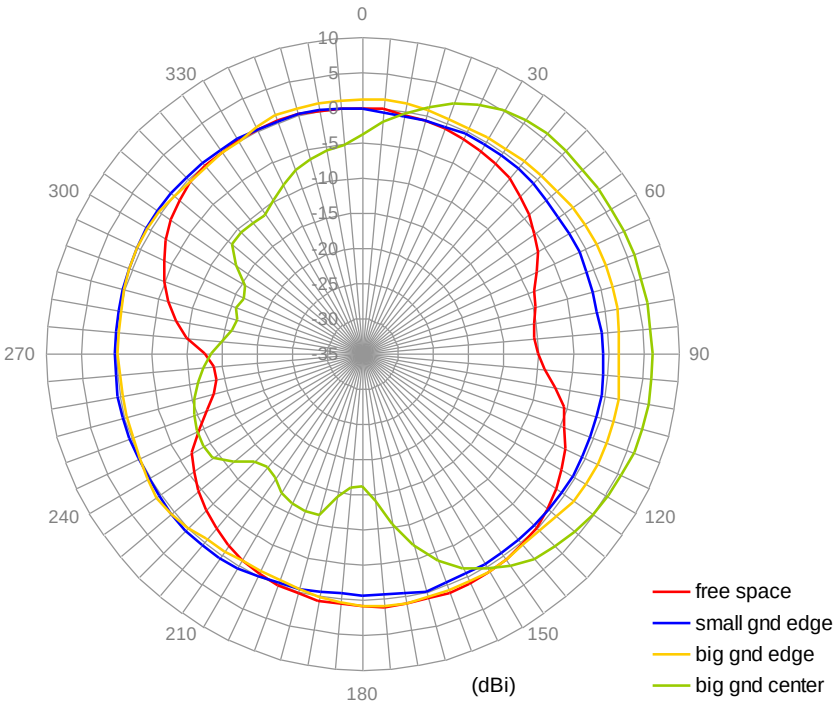


5.8. Radiation Pattern of Bend GW.71 at 2.45GHz

E-Plane Radiation

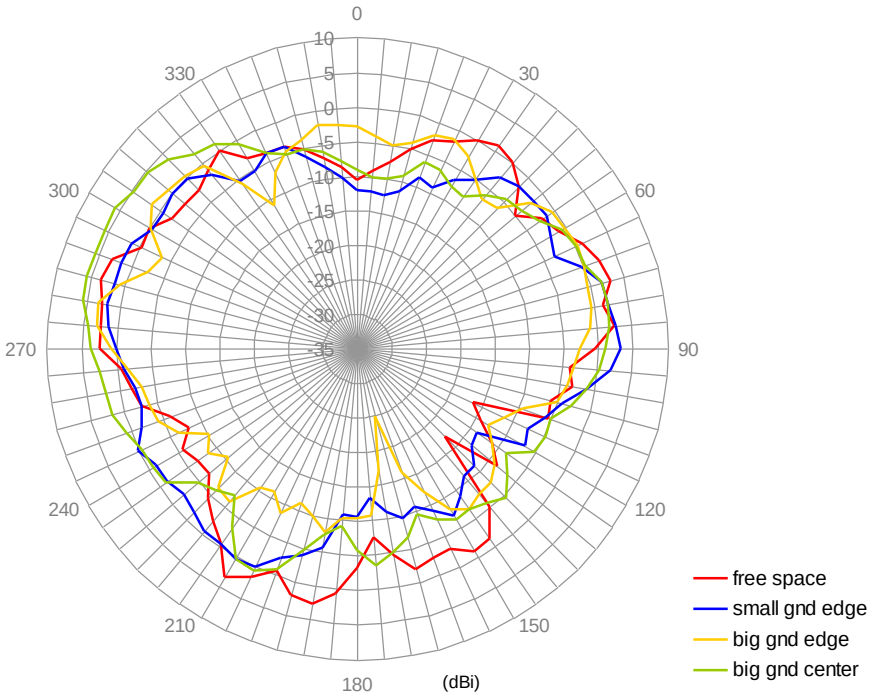


H-Plane Radiation

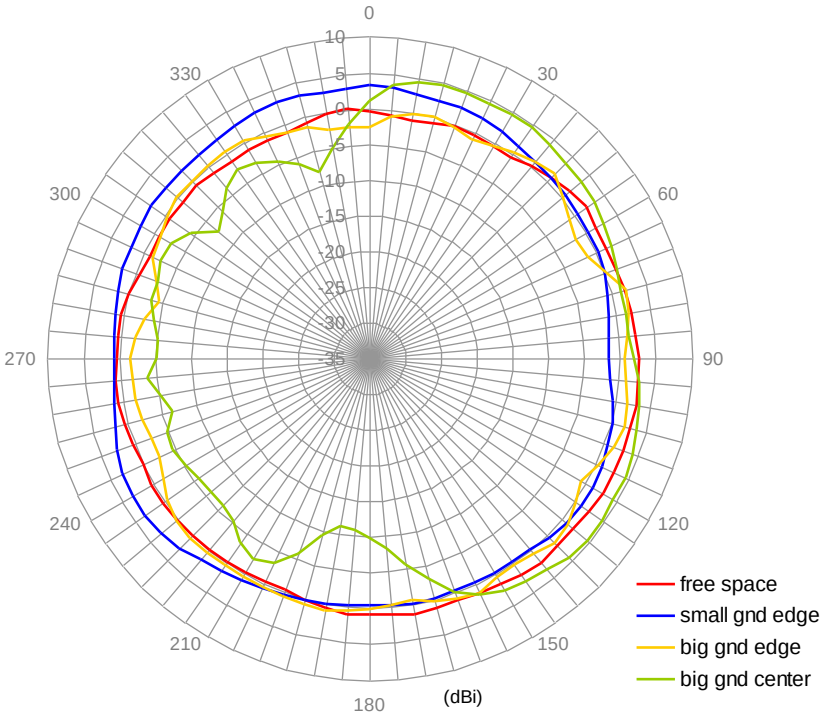


5.9. Radiation Pattern of Straight GW.71 at 5.0GHz

E-Plane Radiation

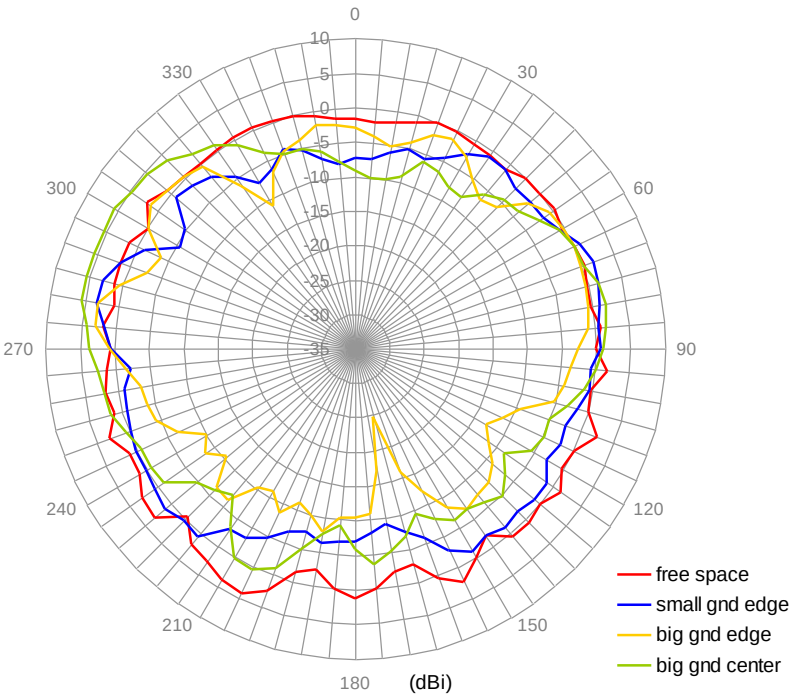


H-Plane Radiation

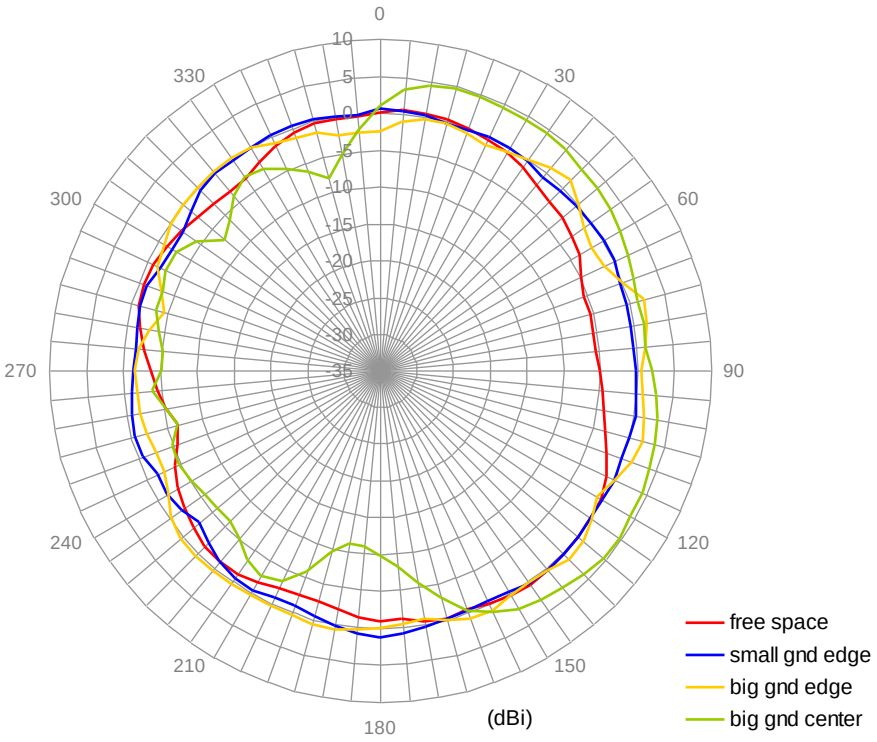


5.10. Radiation Pattern of Bend GW.71 at 5.0GHz

E-Plane Radiation

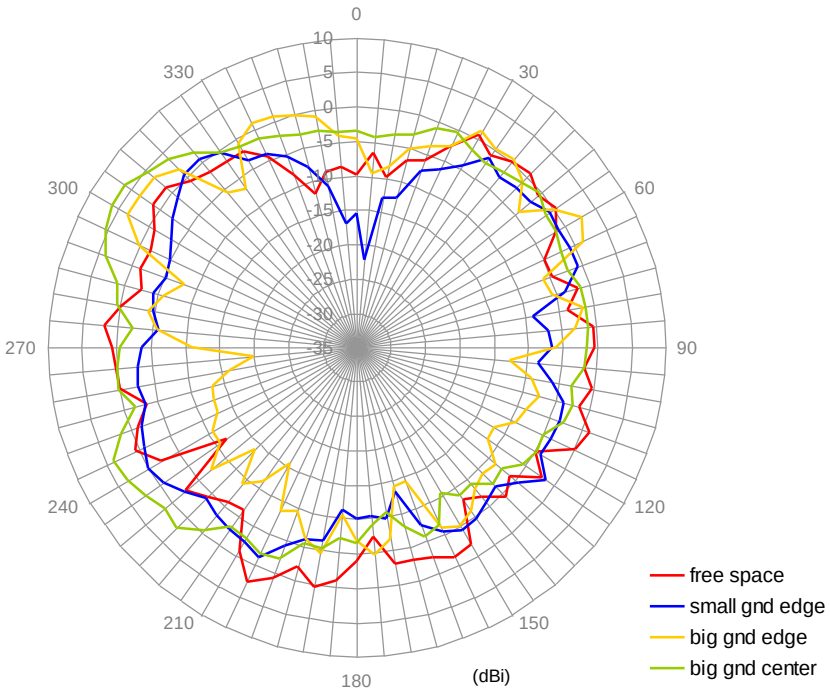


H-Plane Radiation

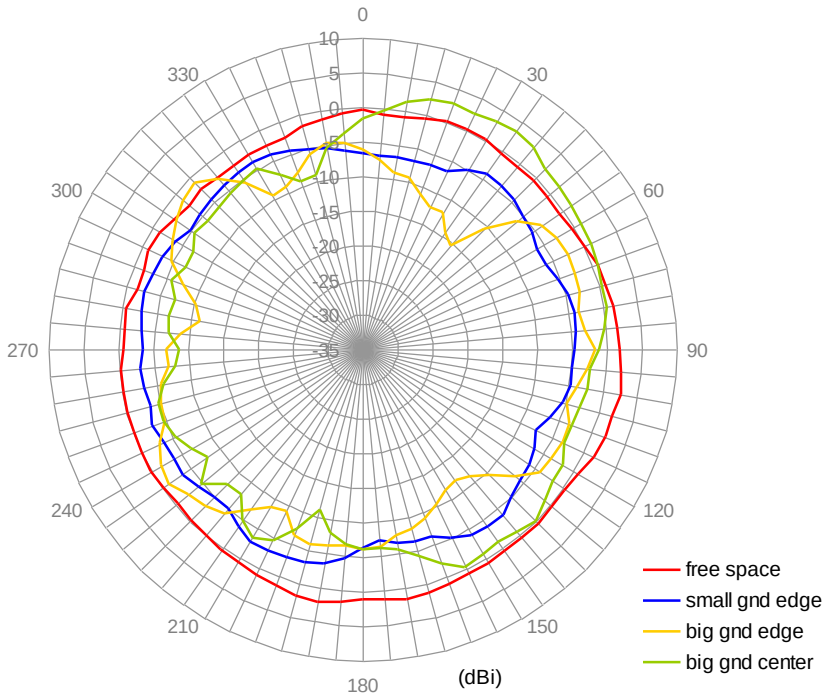


5.11. Radiation Pattern of Straight GW.71 at 5.8GHz

E-Plane Radiation

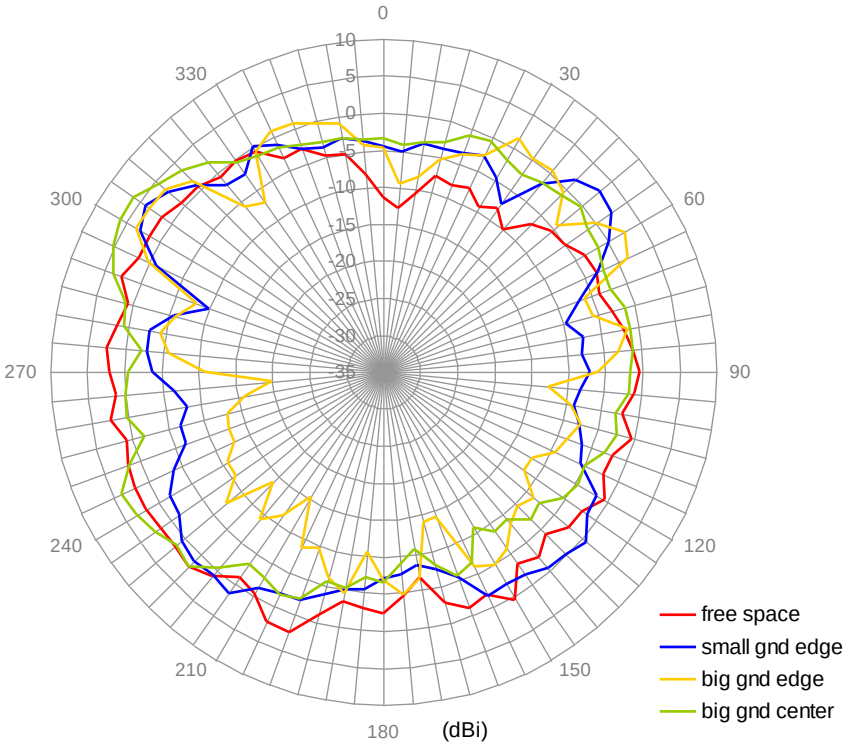


H-Plane Radiation

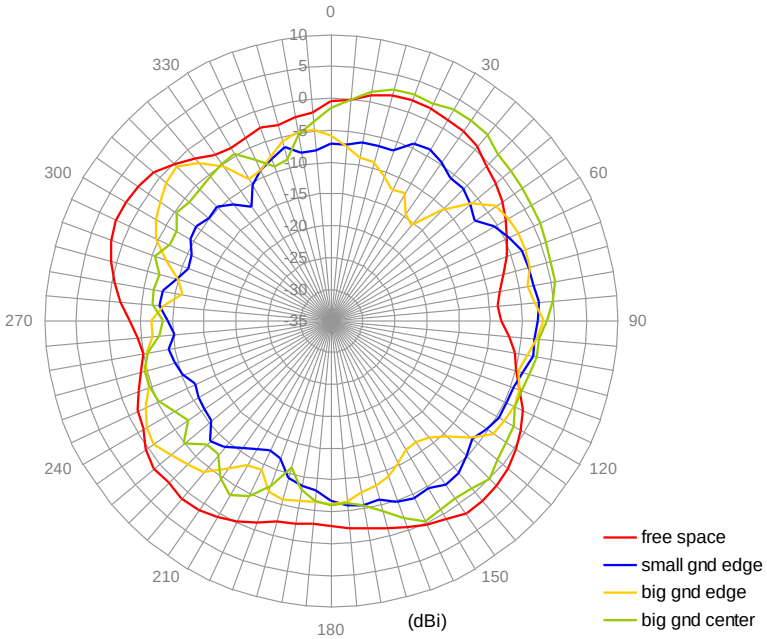


5.12. Radiation Pattern of Bend GW.71 at 5.8GHz

E-Plane Radiation

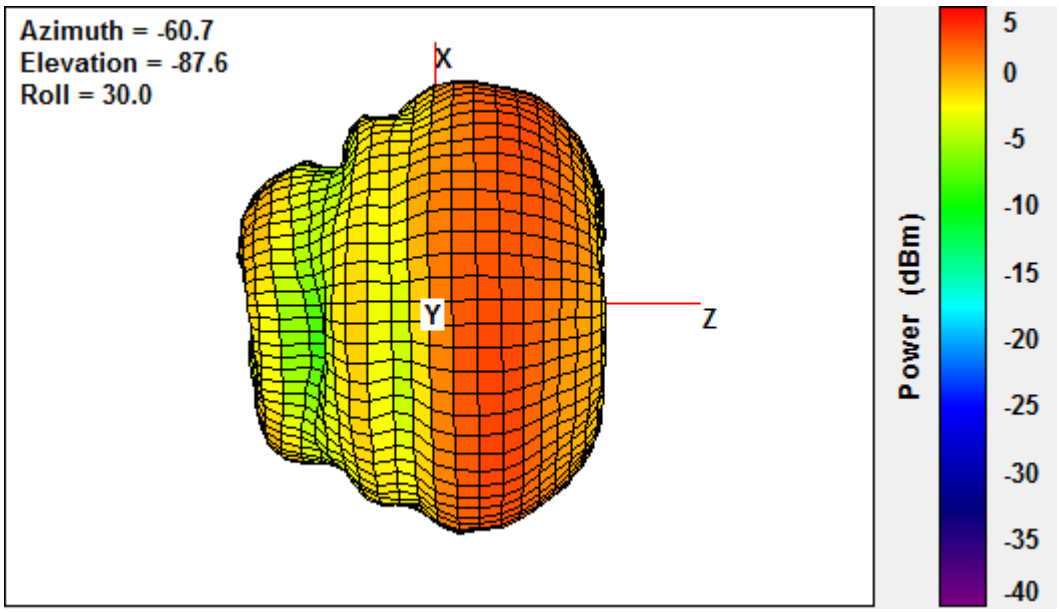


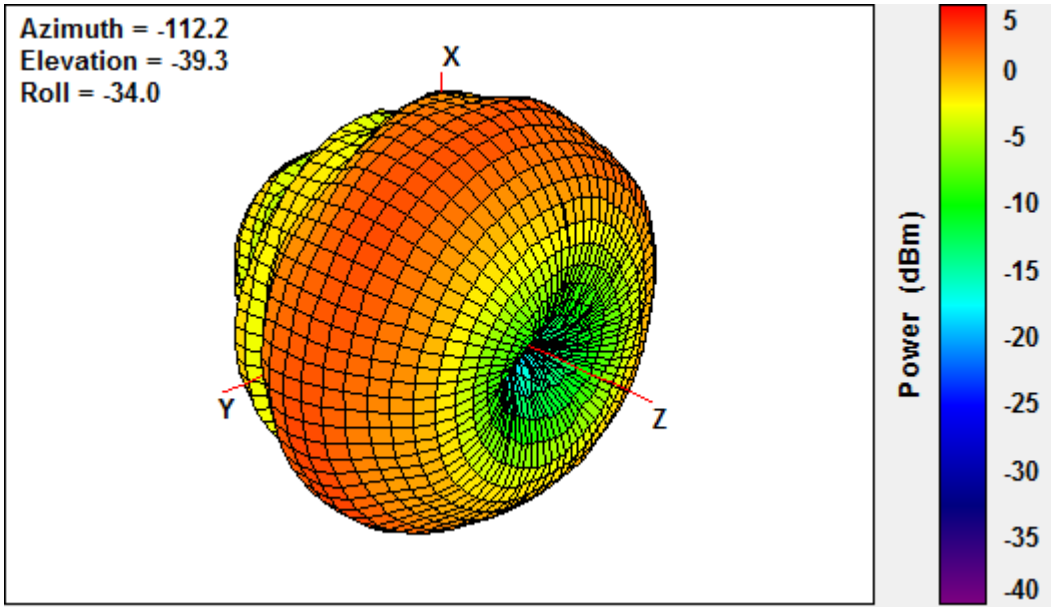
H-Plane Radiation



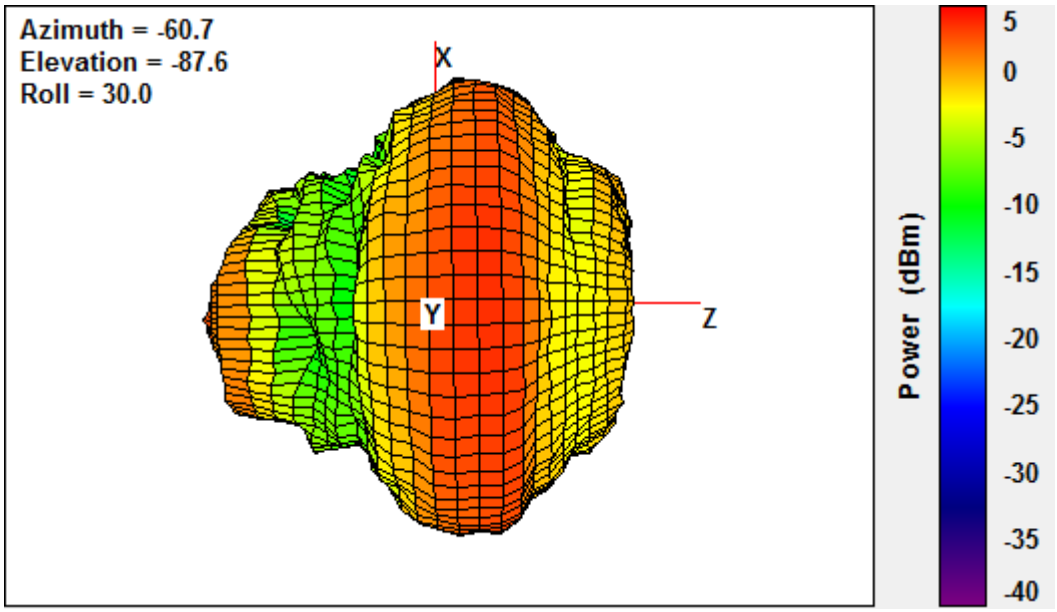
6. 3-D Radiation Patterns (Straight in free space)

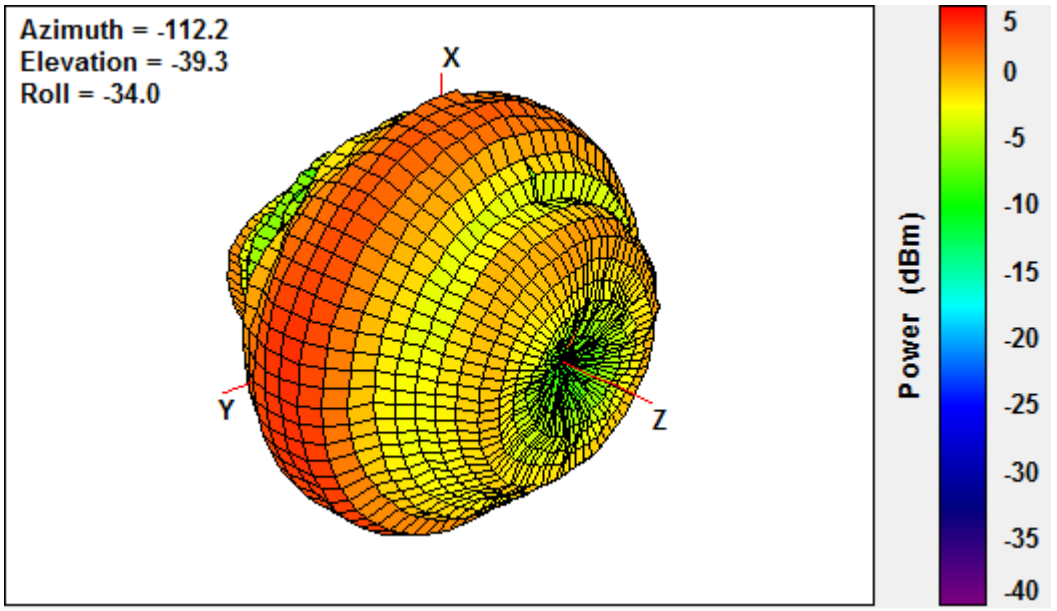
2450MHz



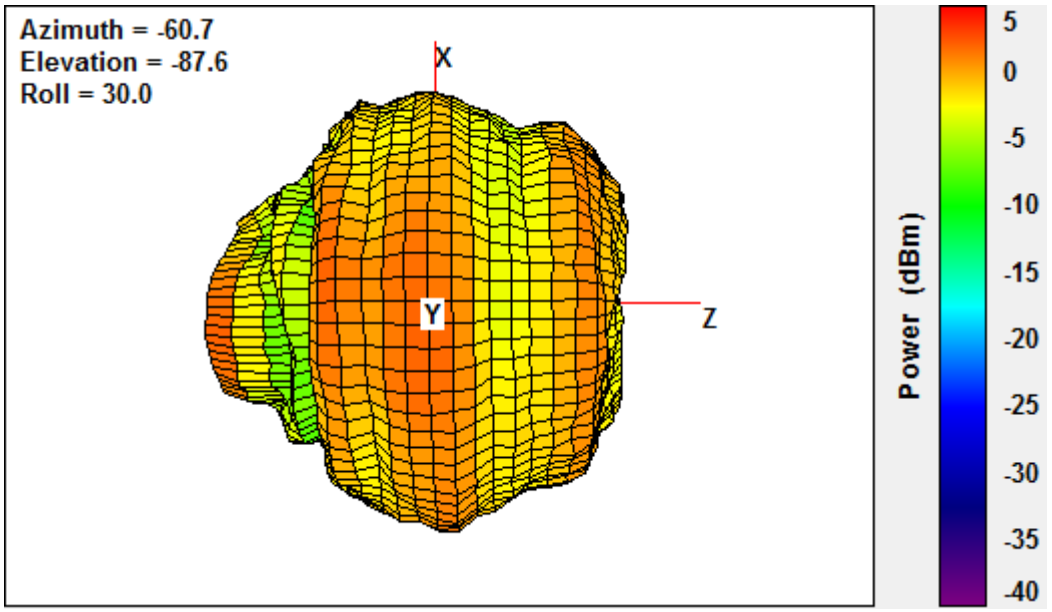


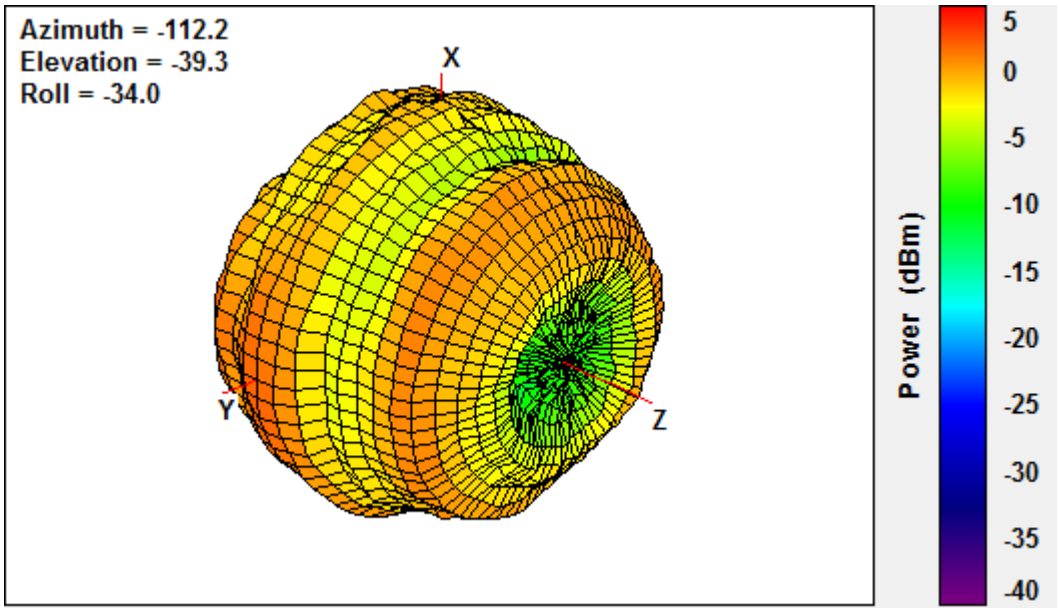
5000MHz


Azimuth = -60.7
Elevation = -87.6
Roll = 30.0
X
Y
Z
Power (dBm)
5
0
-5
-10
-15
-20
-25
-30
-35
-40

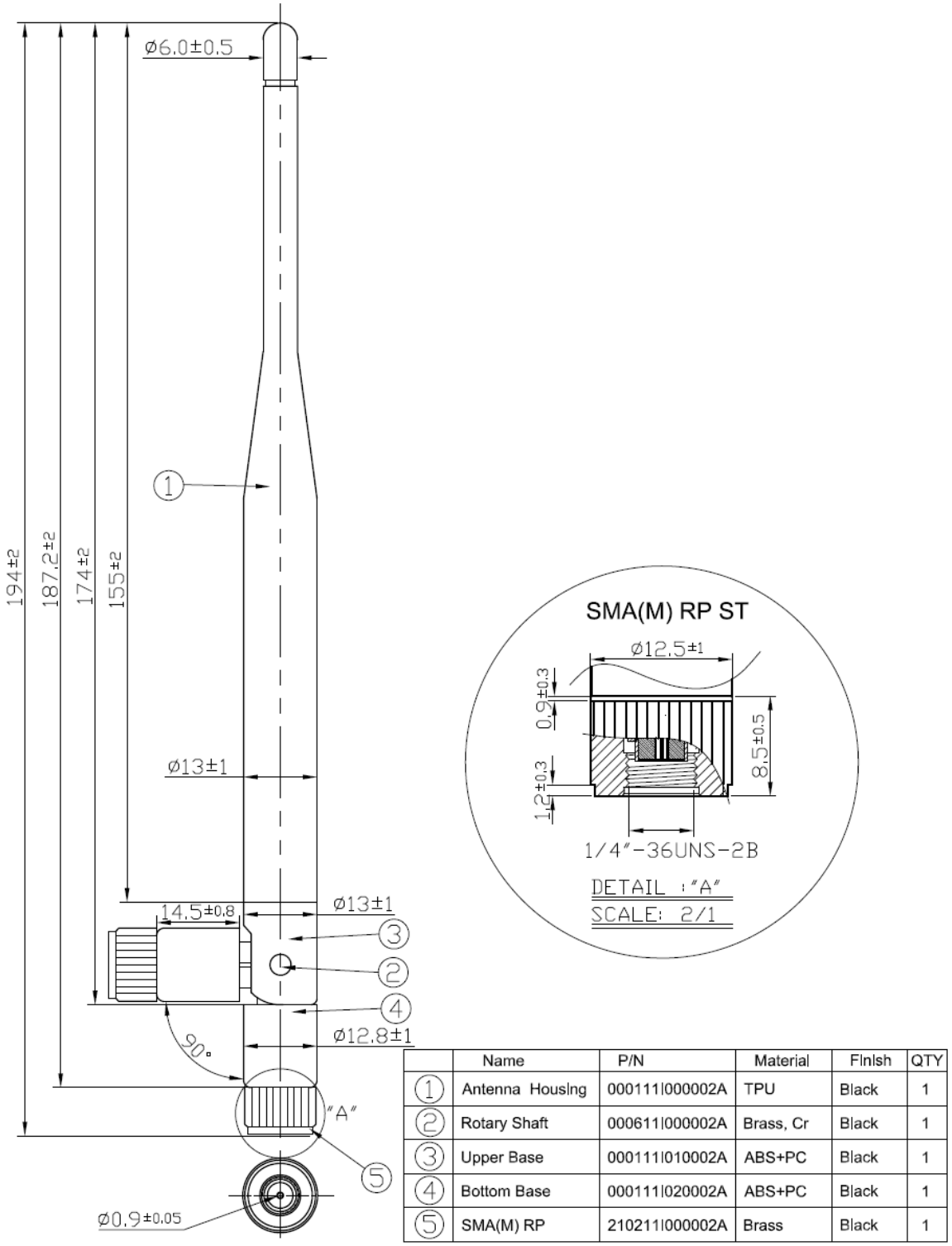

Azimuth = -112.2
Elevation = -39.3
Roll = -34.0
X
Y
Z
Power (dBm)
5
0
-5
-10
-15
-20
-25
-30
-35
-40

5800MHz


Azimuth = -60.7
Elevation = -87.6
Roll = 30.0
X
Y
Z
Power (dBm)
5
0
-5
-10
-15
-20
-25
-30
-35
-40


Azimuth = -112.2
Elevation = -39.3
Roll = -34.0
X
Y
Z
Power (dBm)
5
0
-5
-10
-15
-20
-25
-30
-35
-40

7. Antenna Drawing



	Name	P/N	Material	Finish	QTY
1	Antenna Housing	000111|000002A	TPU	Black	1
2	Rotary Shaft	000611|000002A	Brass, Cr	Black	1
3	Upper Base	000111|010002A	ABS+PC	Black	1
4	Bottom Base	000111|020002A	ABS+PC	Black	1
5	SMA(M) RP	210211|000002A	Brass	Black	1