

## SPECIFICATION

- Part No. : **TI.19.2113**
- Product Name : 2dBi 915MHz ISM Band Dipole Terminal  
Antenna, SMA(M) Hinge
- Feature : High efficiency dipole terminal antenna  
**ROHS compliant**



## 1. Introduction

TI.19 is a high performance 915MHz ISM band dipole omnidirectional antenna. The hinged design enables the antenna to be positioned at its most suitable angle. This antenna features a SMA(M) Plug Connector.

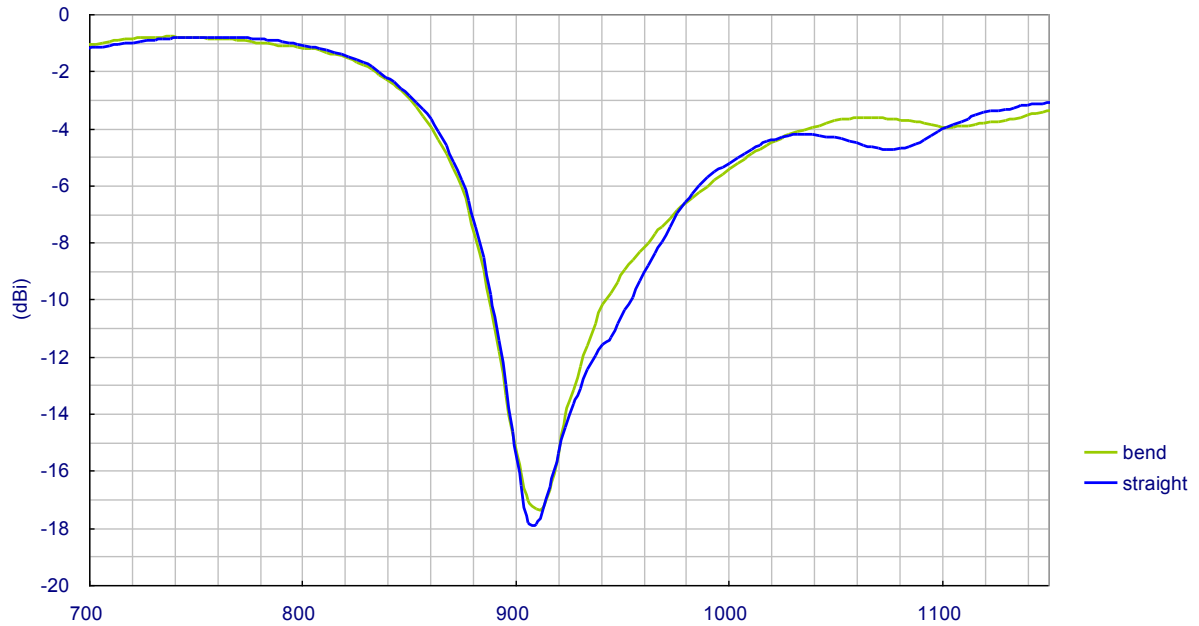
For a lot of antenna applications, such as Wi-Fi Hotspot or cellular Pico-cell, the antenna of the operator’s device and the antenna of the user’s remote device are not on the same horizontal level. The TI.19 has been designed with a butterfly shape radiation pattern, to help counteract this effect.

## 2. Specification

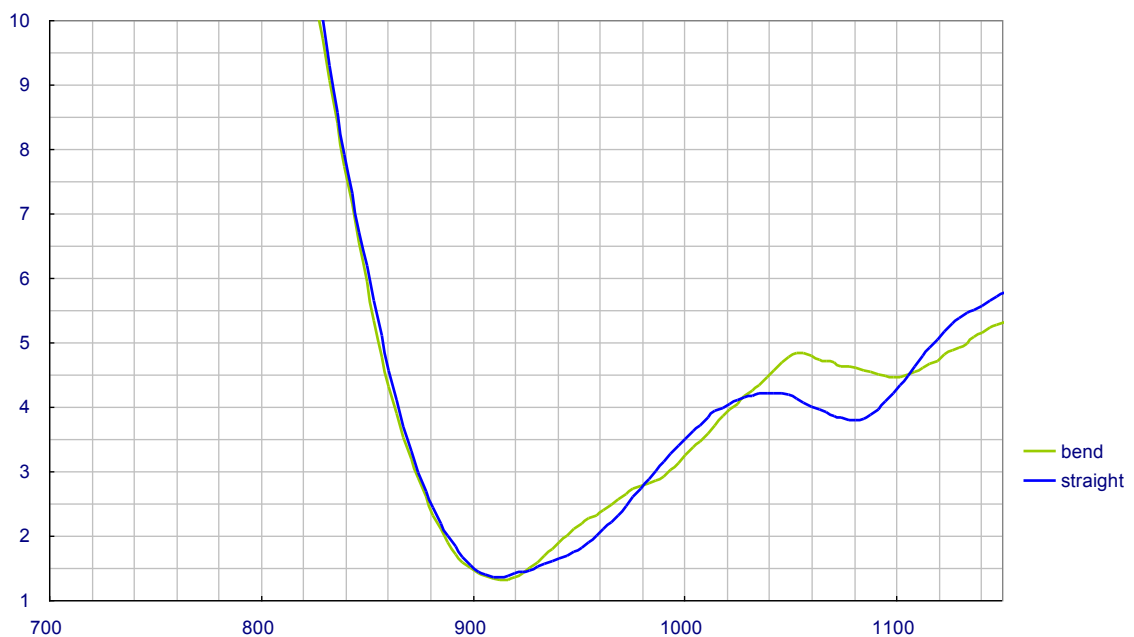
ELECTRICAL	
Frequency	902 ~ 928MHz
Peak Gain (bent)	2.5dBi
Peak Gain (straight)	2.4dBi
Average Gain (bent)	-1.0dBi
Average Gain (straight)	-0.9dBi
Efficiency (bent)	81%
Efficiency (straight)	82%
Impedance	50Ω
VSWR	< 1.9 : 1
Polarization	Linear
Radiation Pattern	Omnidirectional
Input Power	10 W
MECHANICAL	
Antenna Length	389 ± 5 mm
Antenna Diameter	13 ± 0.5 mm
Casing	TPU
Connector	SMA Male
ENVIRONMENTAL	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

### 3. Antenna S11 Properties

#### 3.1 Return Loss

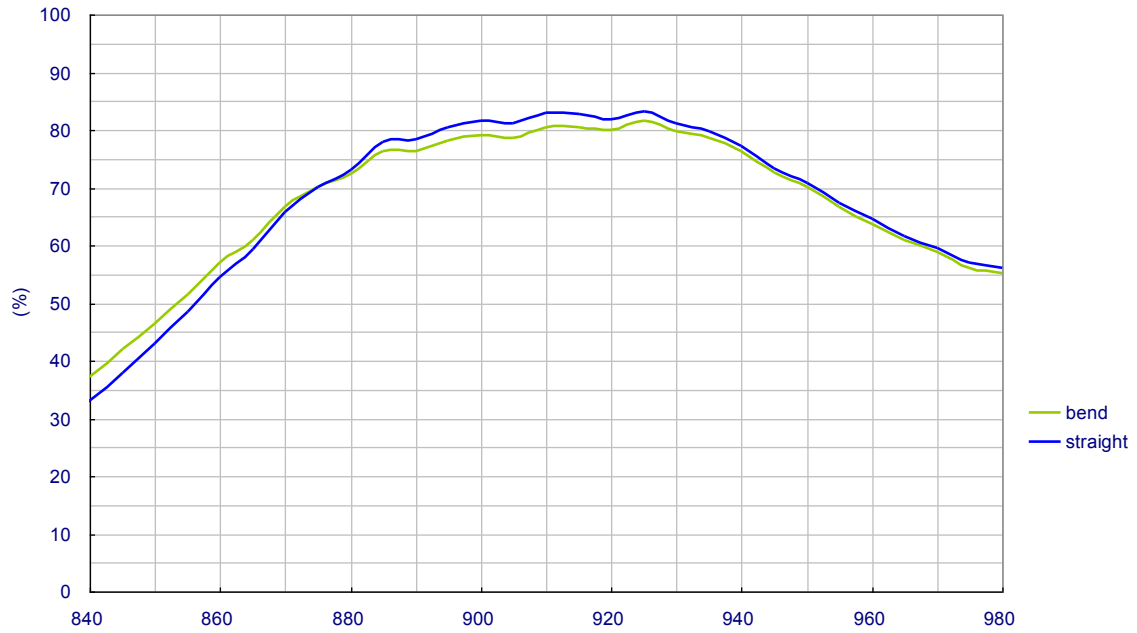


#### 3.2 VSWR

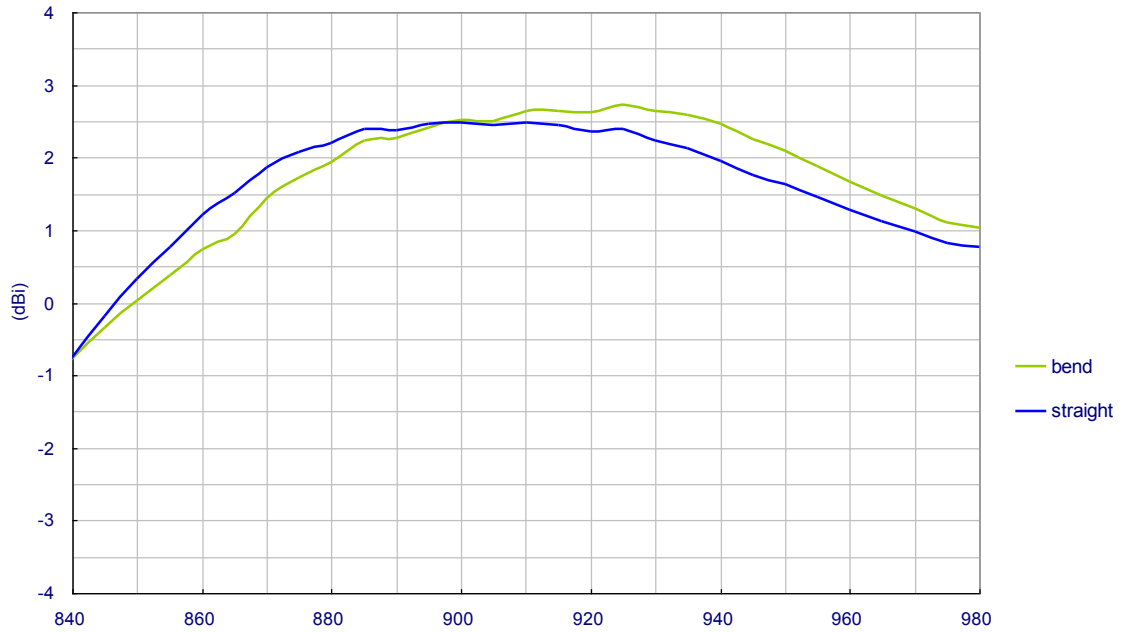


## 4. Antenna Radiation Properties

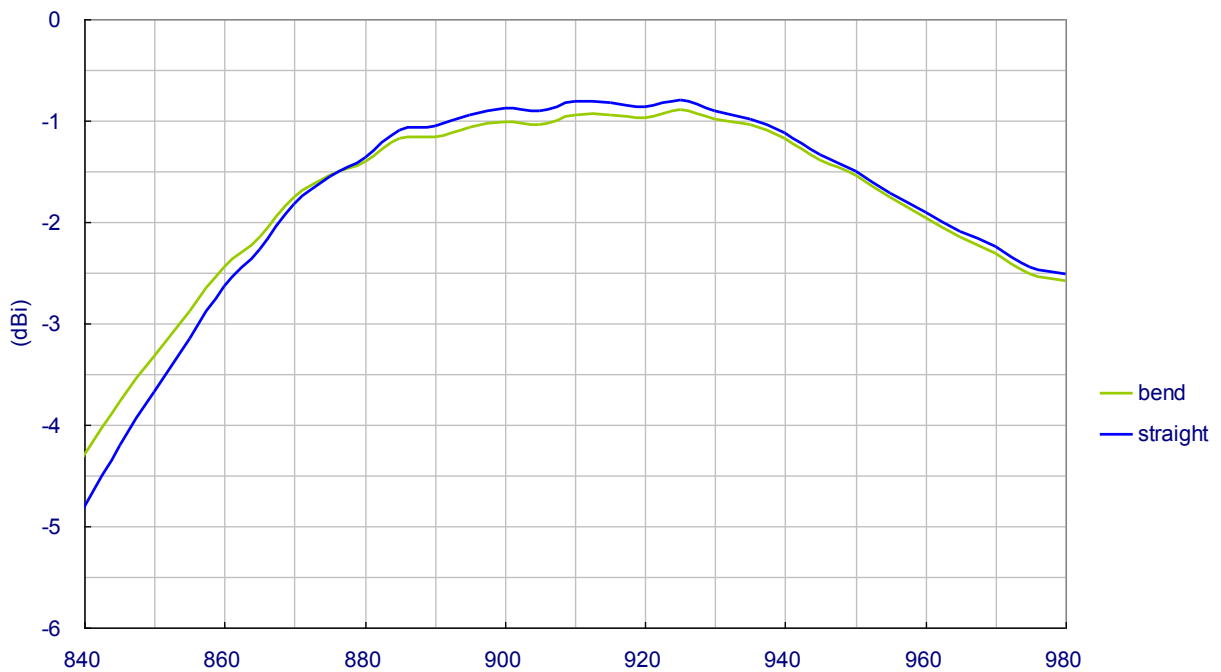
### 4.1. 3D Radiation Efficiency



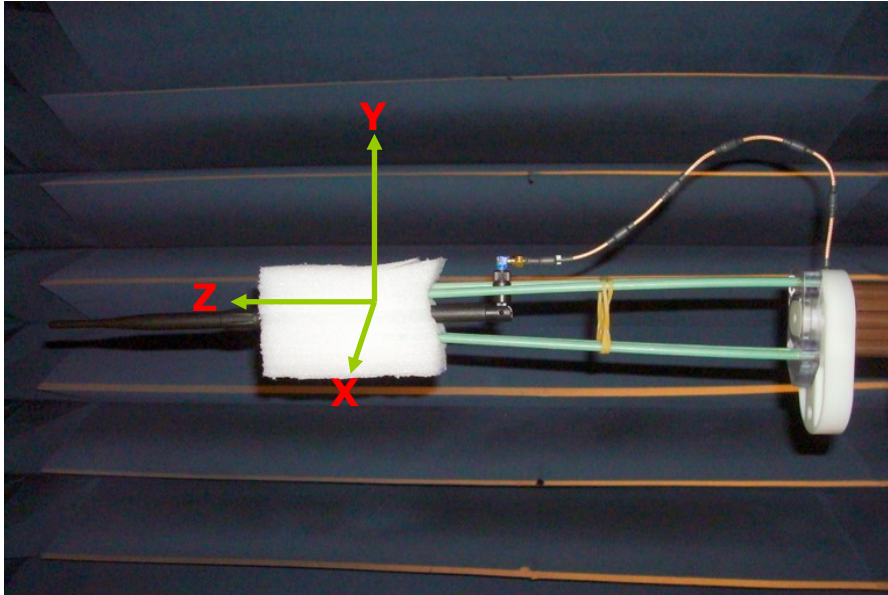
## 4.2. Peak Gain



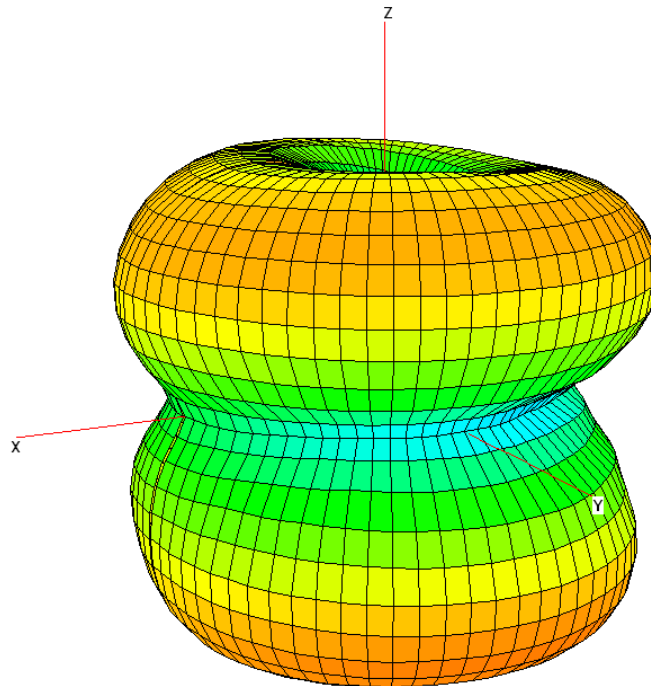
## 4.3. Average Gain



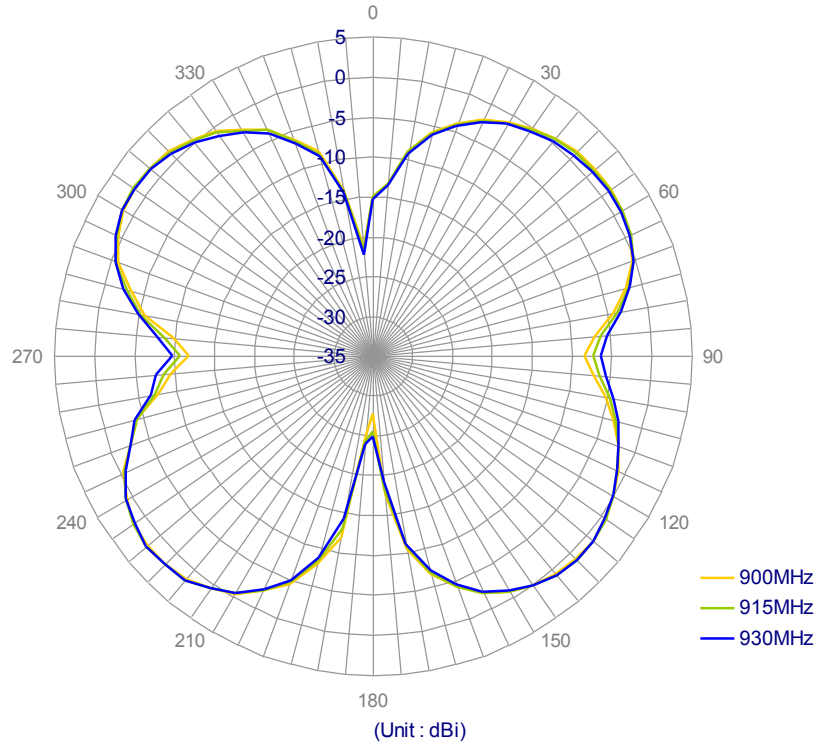
#### 4.4. Radiation Pattern of 90 Degree Bent Position



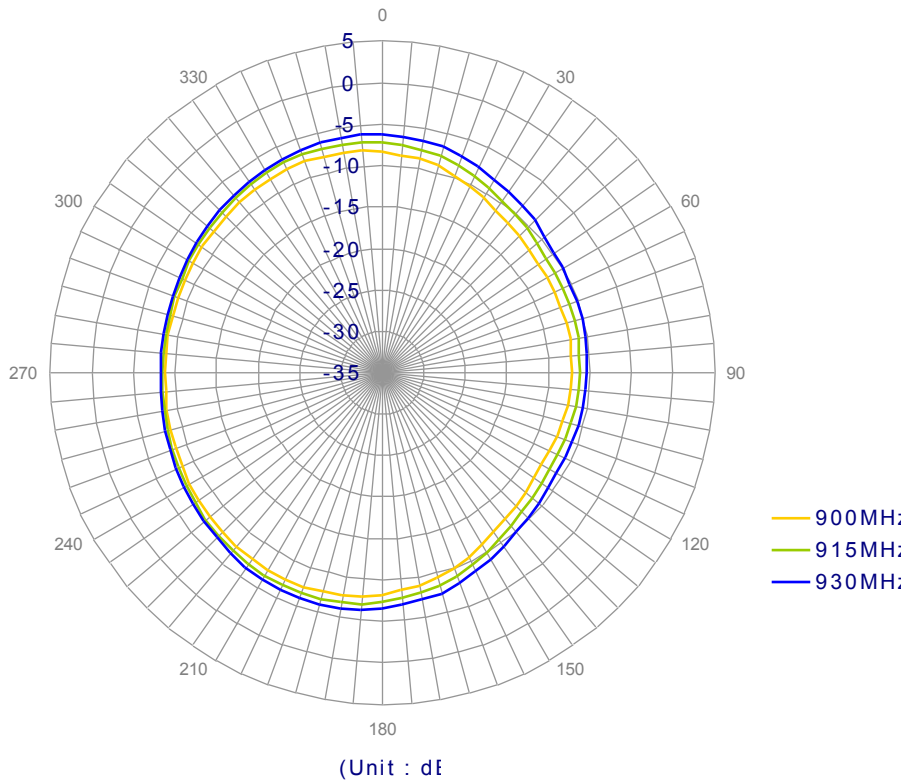
##### 4.4.1 3D Radiation Pattern



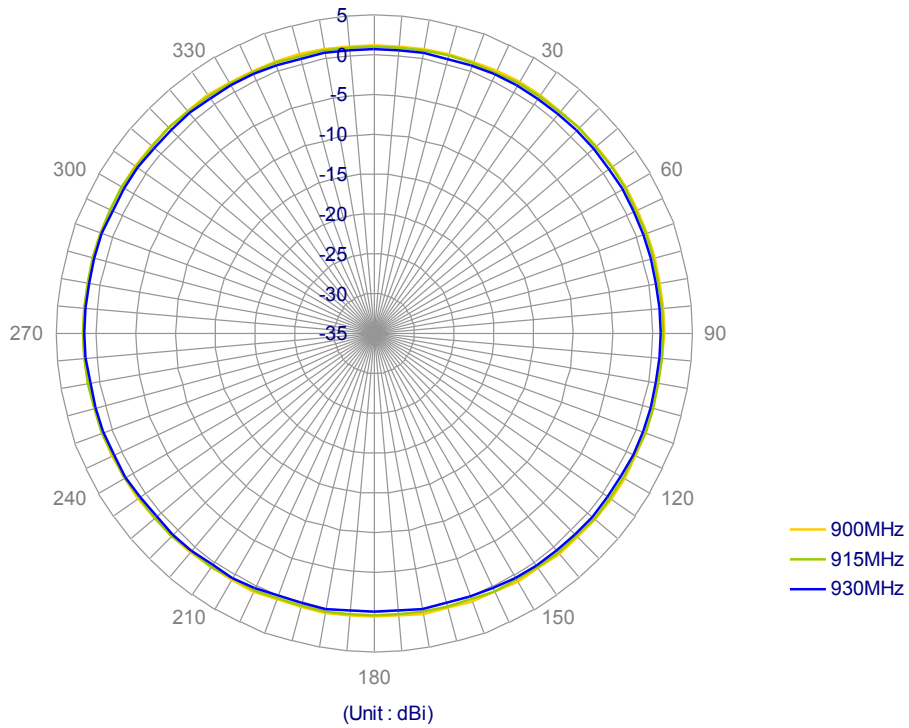
### 4.4.2 XZ Plane Radiation



### 4.4.3 XY Plane Radiation

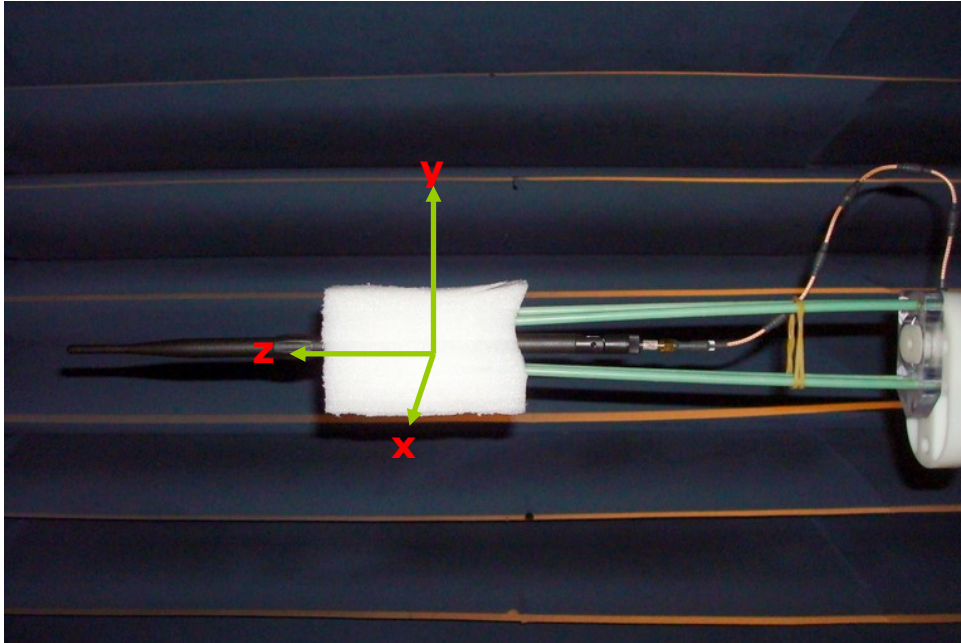


#### 4.4.4 Radiation at 45 Degree from XY Plane

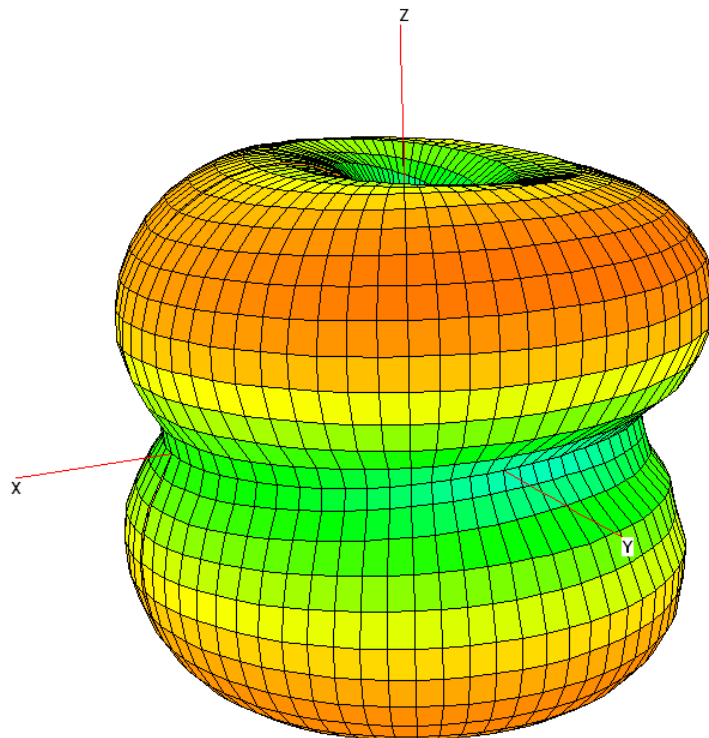




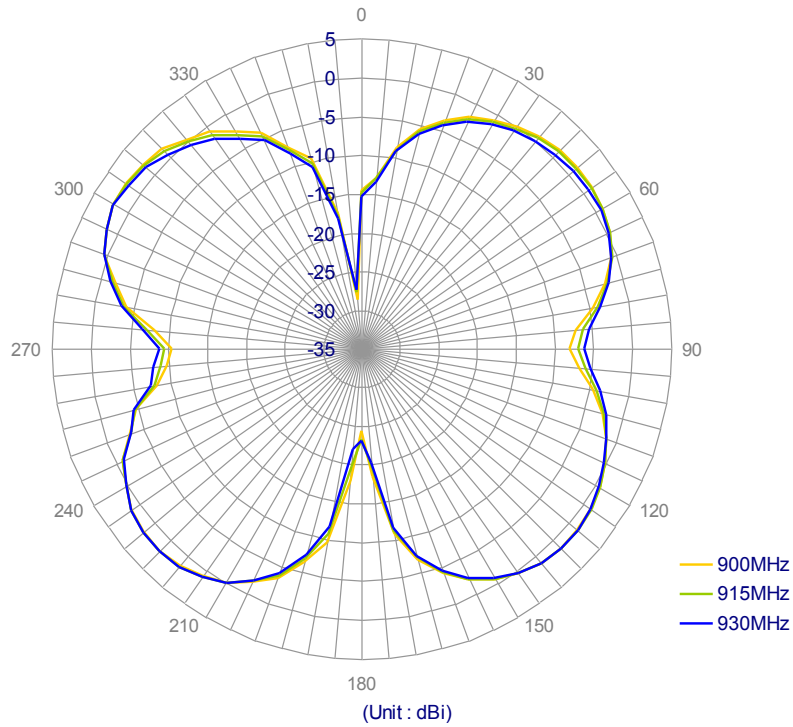
## 4.5. Radiation Pattern of 180 Degree Straight Position



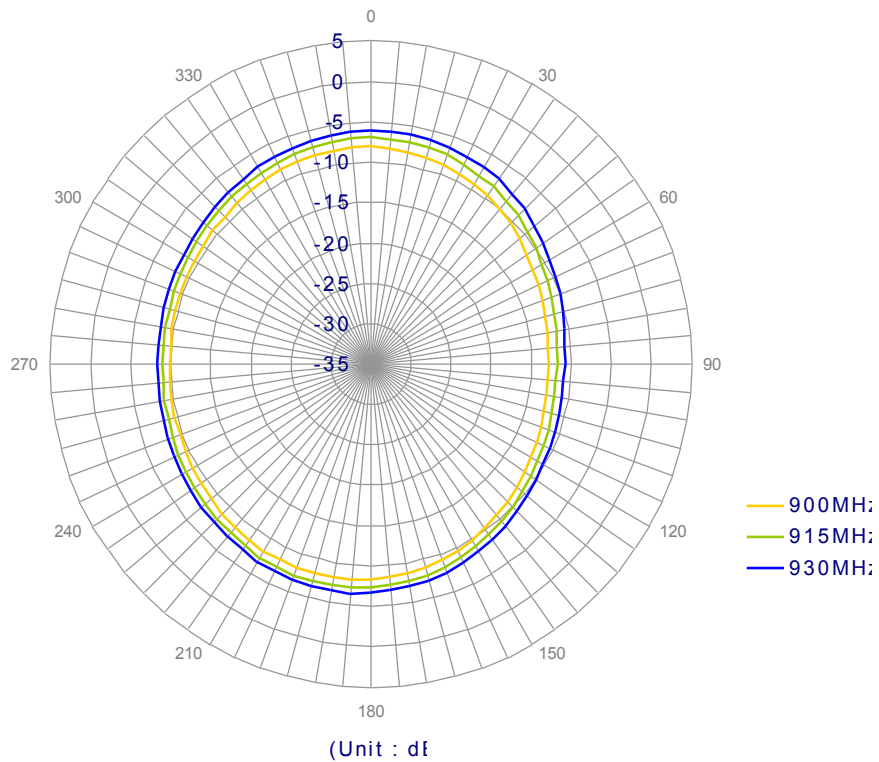
### 4.5.1 3D Radiation Pattern



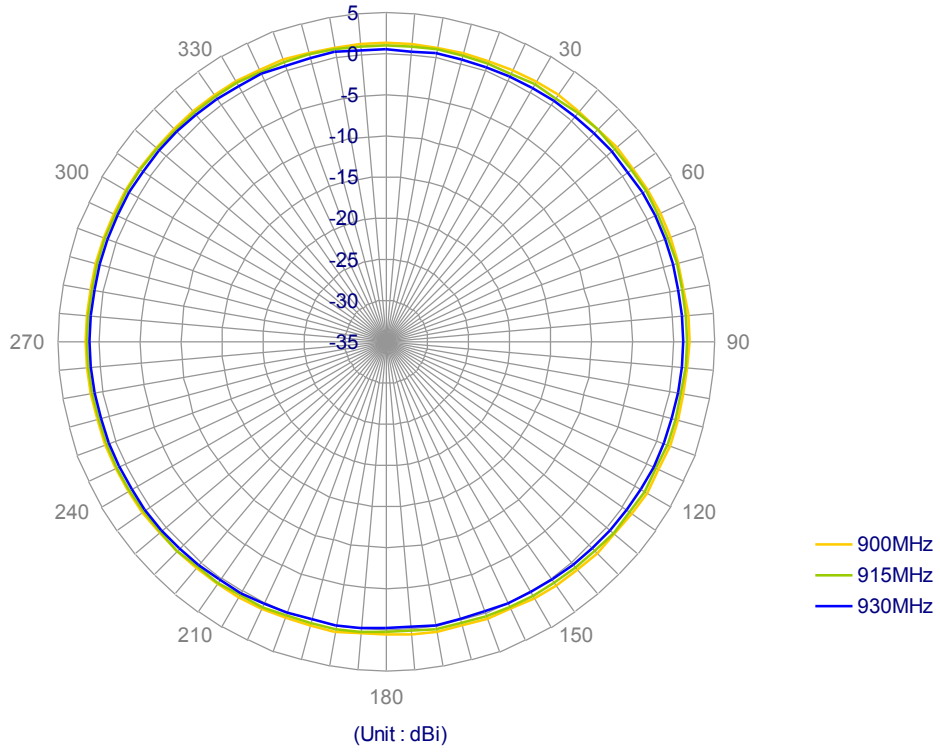
### 4.5.2 XZ Plane Radiation



### 4.5.3 XY Plane Radiation



#### 4.5.4 Radiation at 45 Degree from XY Plane



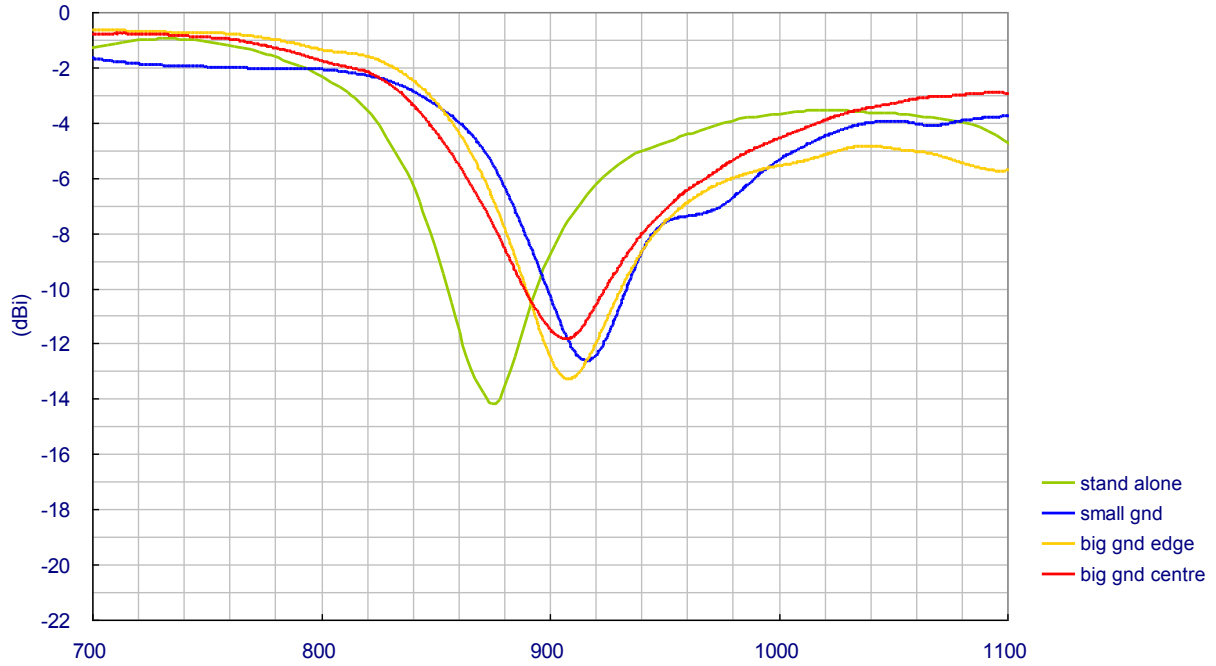
## 5. Ground Plane Effect

Three ground setups are used to see the affect of positioning TI.19 close to ground -

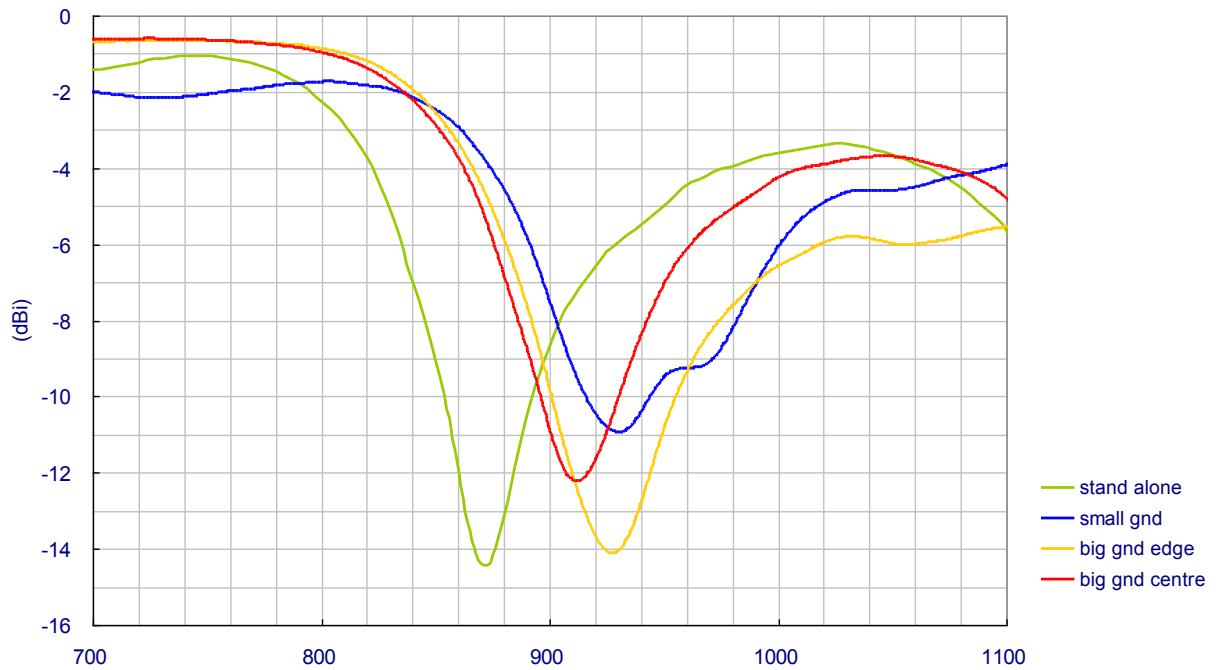
1. Small Ground (15\*9cm) – common size of CPE devices. TI.19 is mounted at the longer edge for testing.
2. Big Ground Edge (45\*30cm) – simulate the effect of mounting antenna on a base station device. TI.19 is mounted at the centre of the longer edge.
3. Big Ground Centre (45\*30cm) – simulate the effect of mounting antenna in a centre of a big ground plane, such as vehicle top.

## 5.1. S11 Return Loss

### Bent

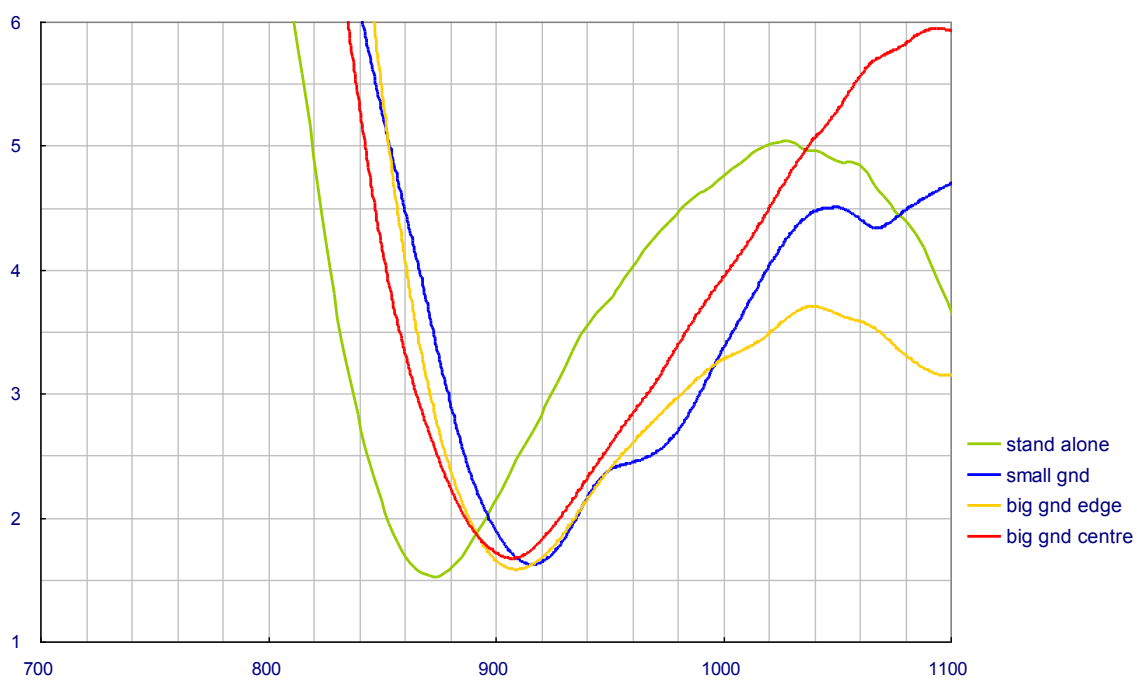


### Straight

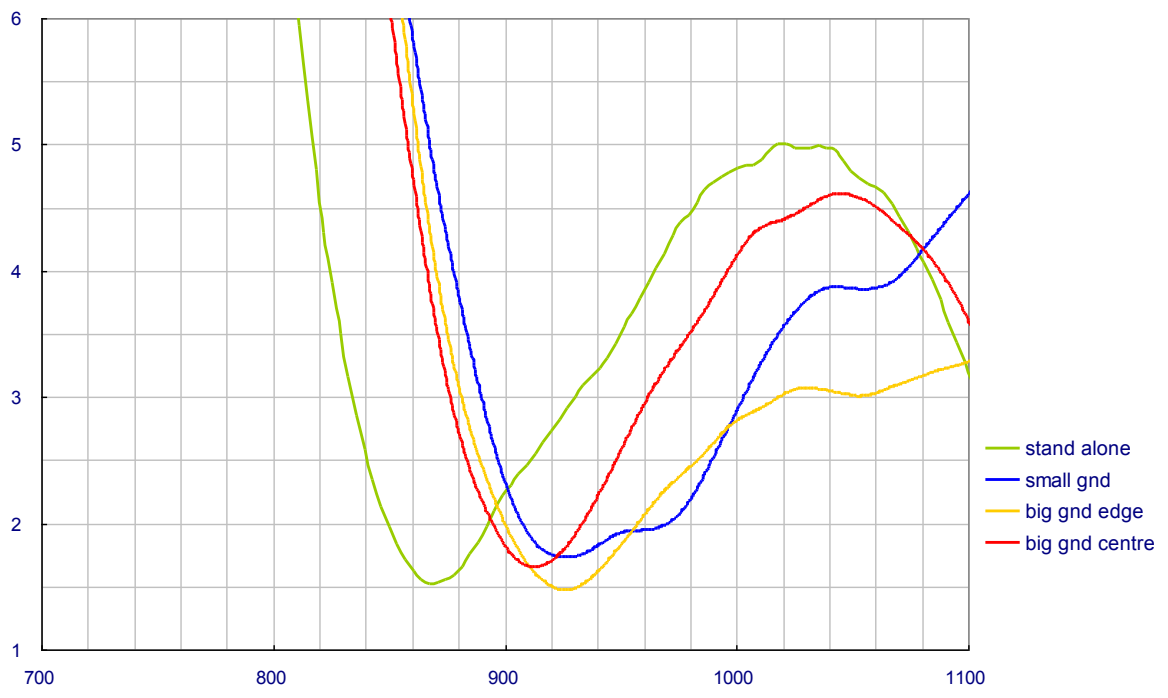


## 5.2. VSWR

### Bent

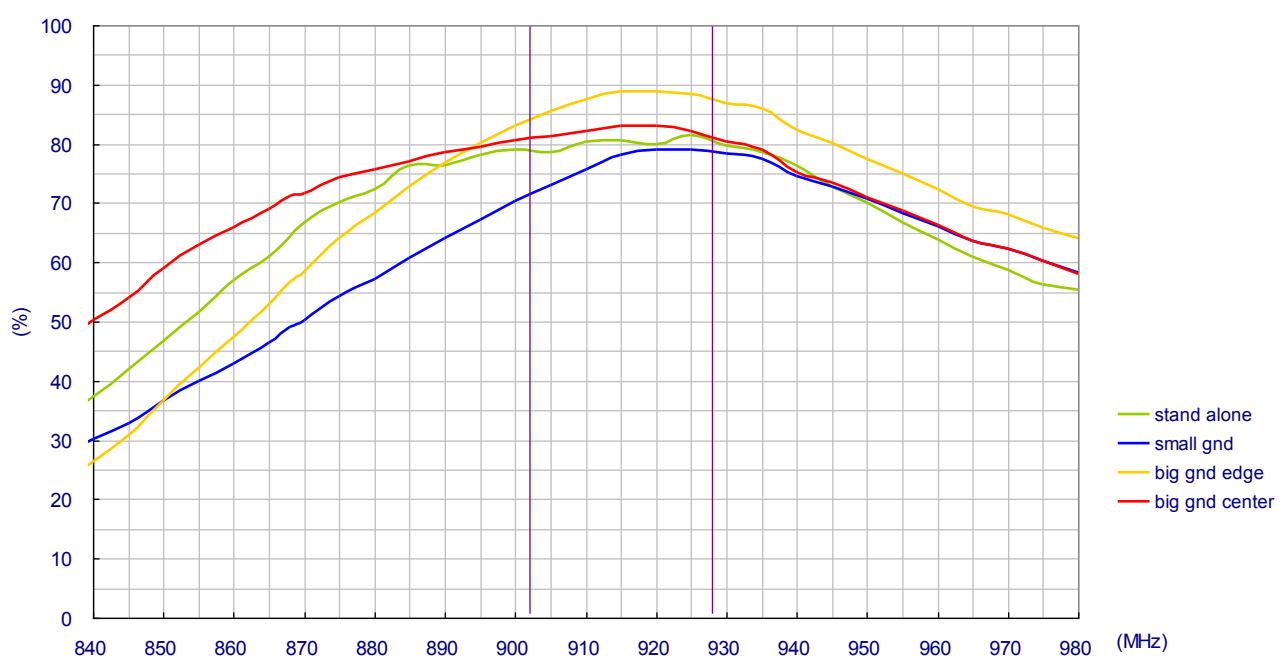


### Straight

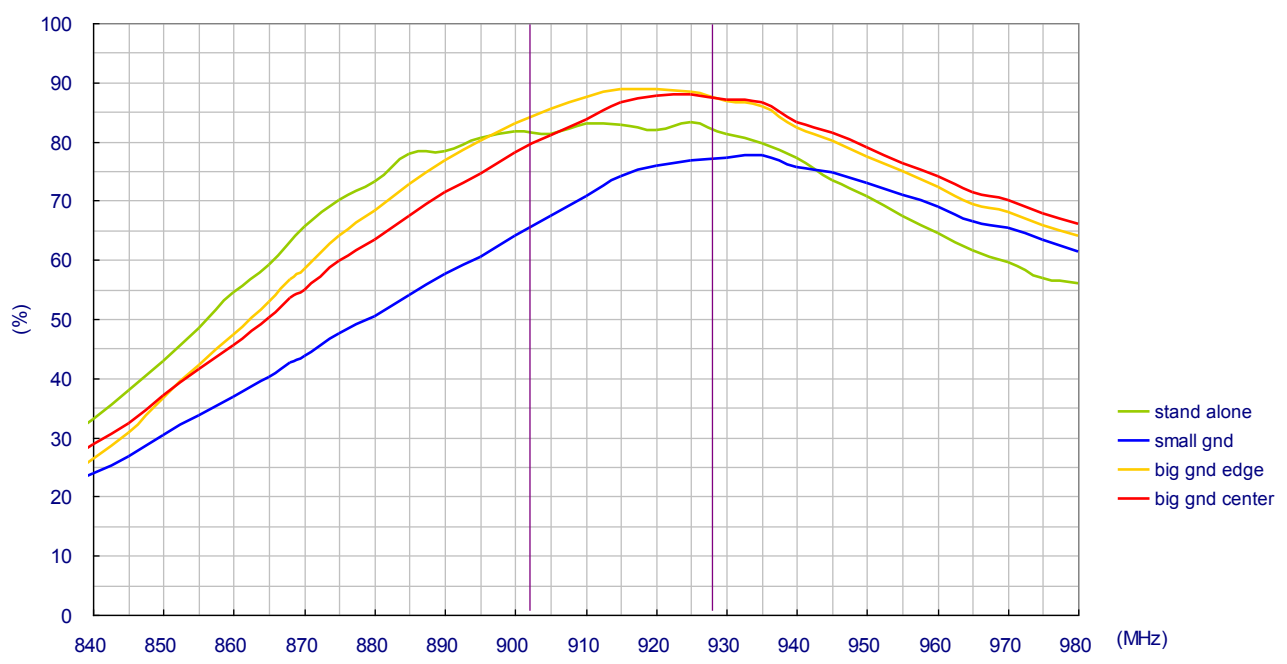


### 5.3. Radiation Efficiency

#### Bent

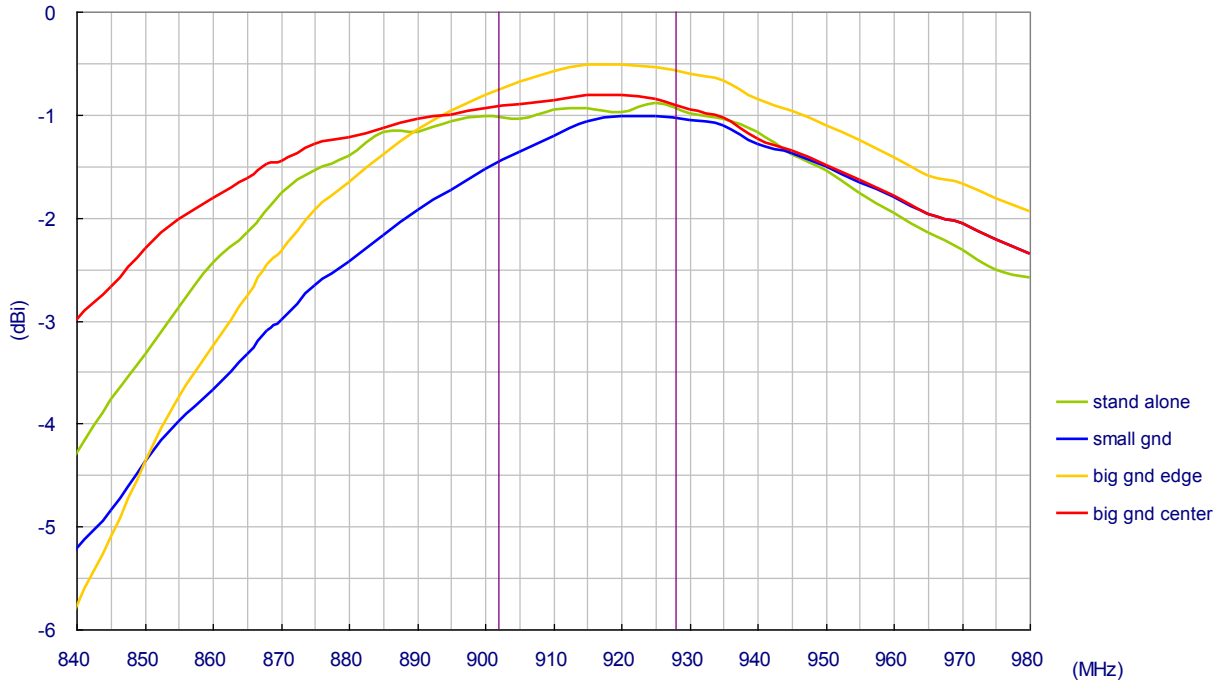


#### Straight

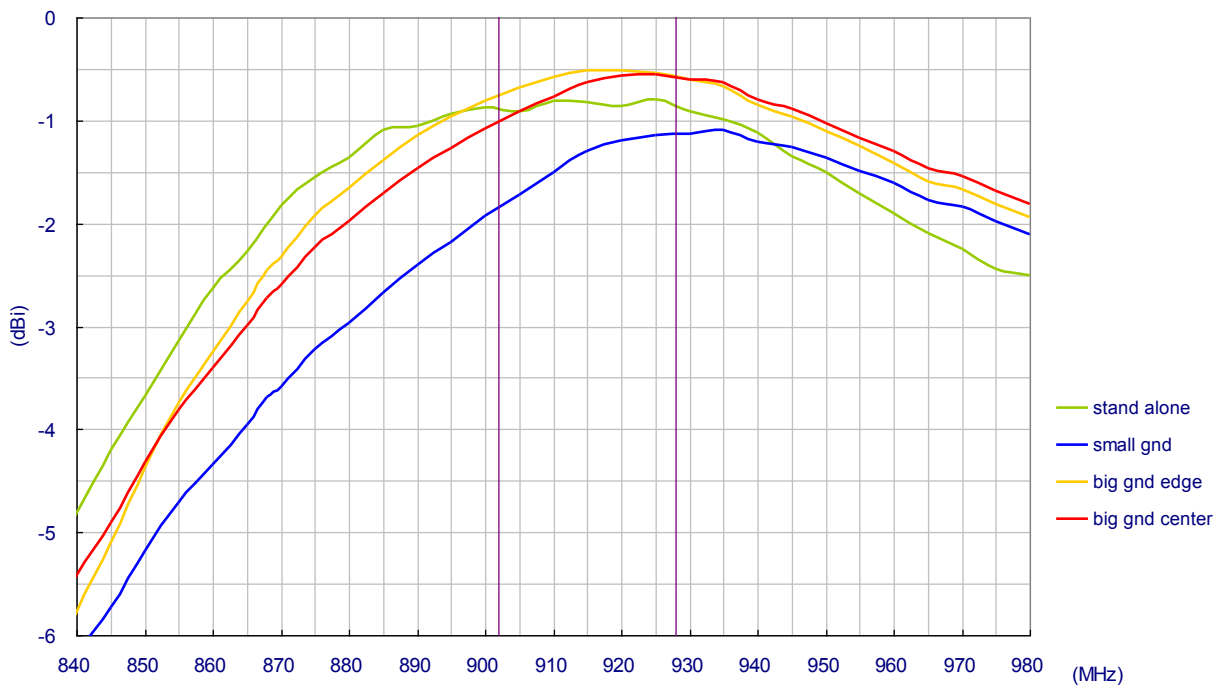


## 5.4. Average Gain

### Bent



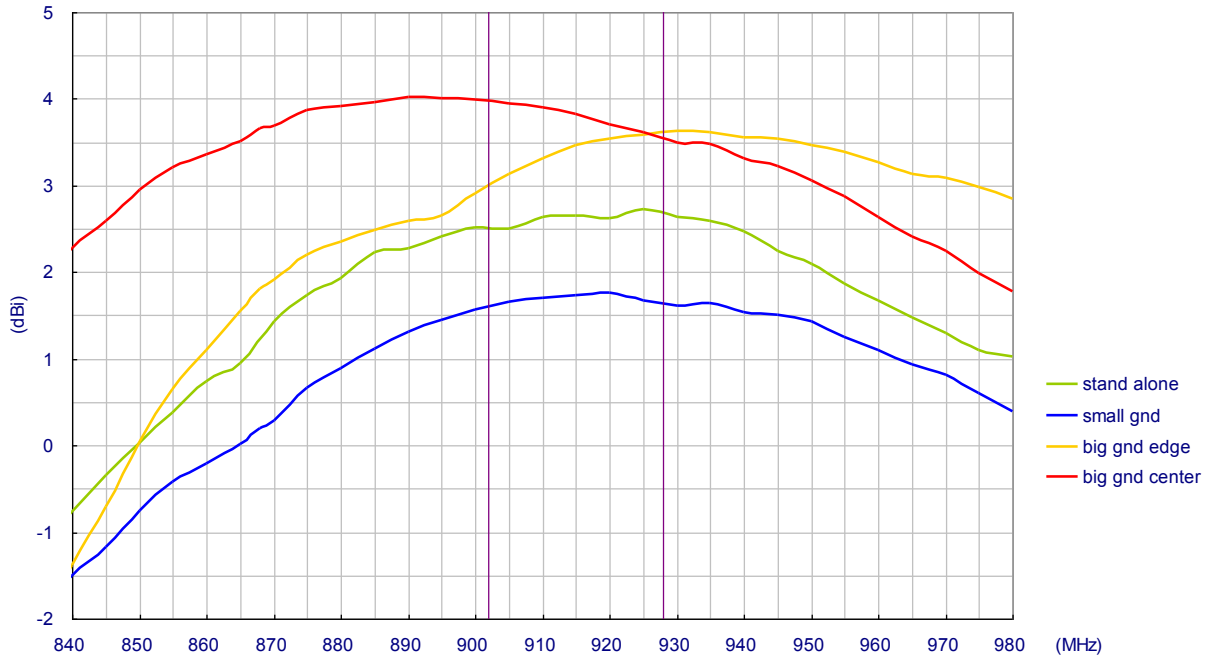
### Straight



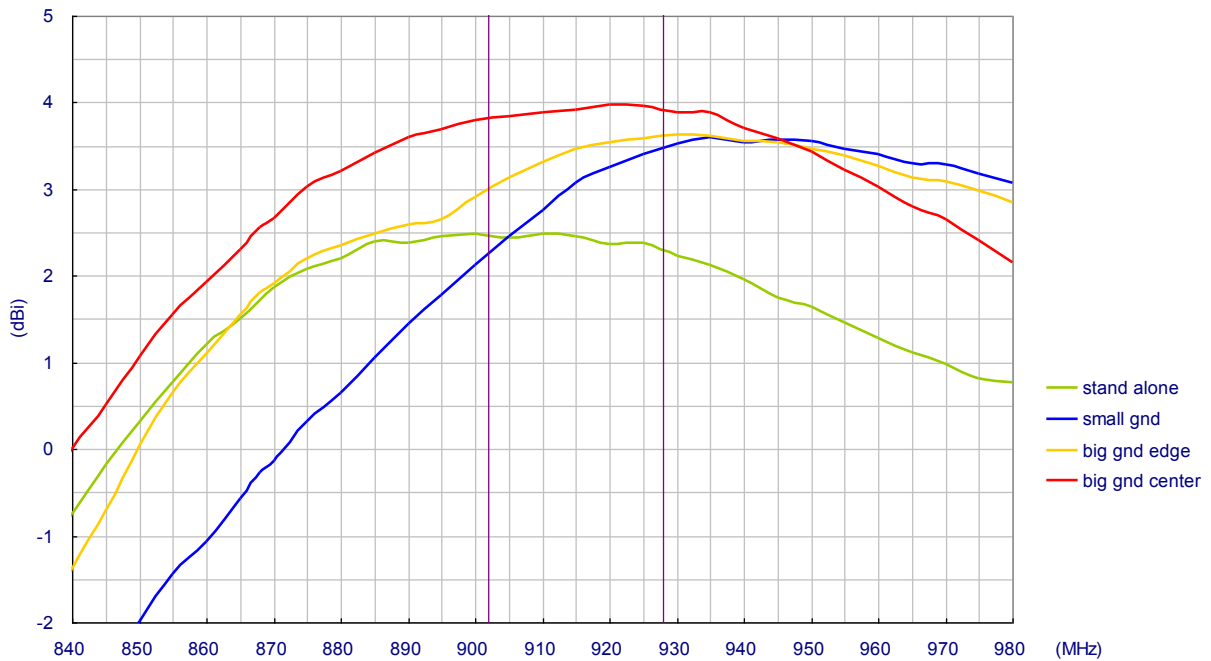


## 5.5. Peak Gain

### Bent

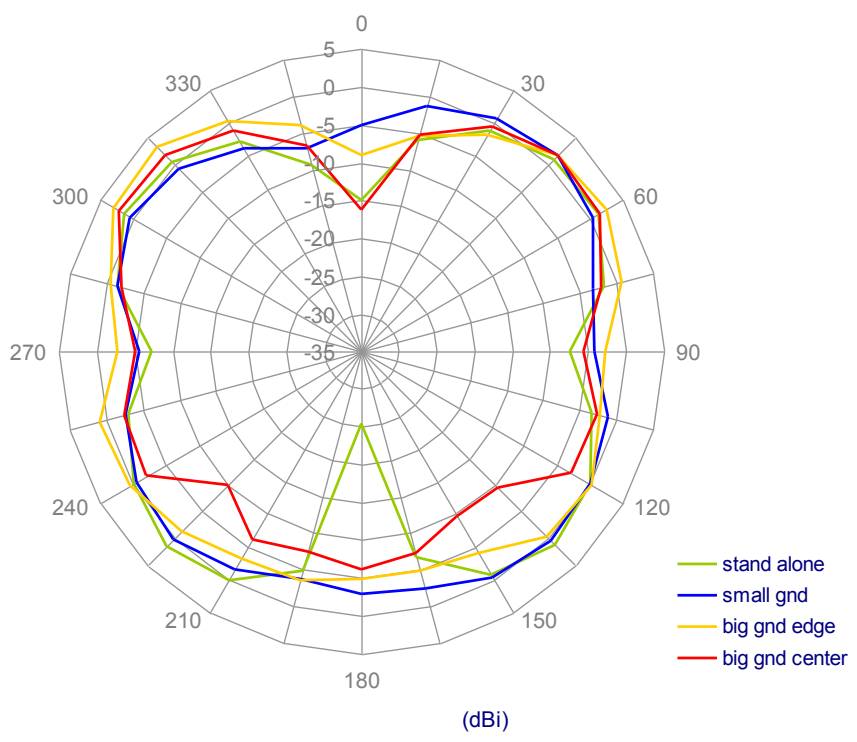


### Straight

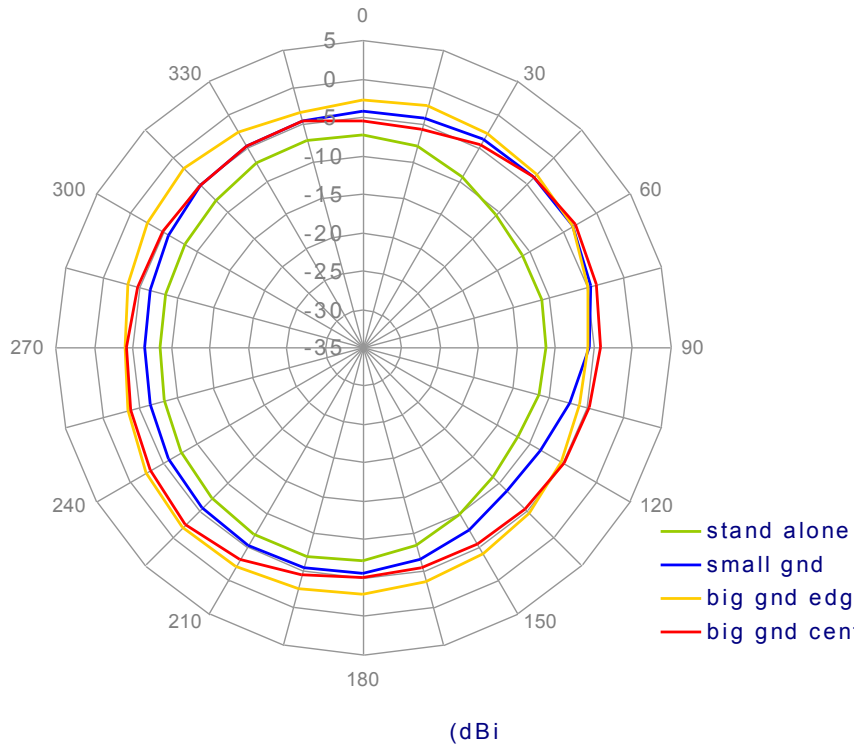


## 5.6. Radiation Pattern of 90 Degree Bent Position

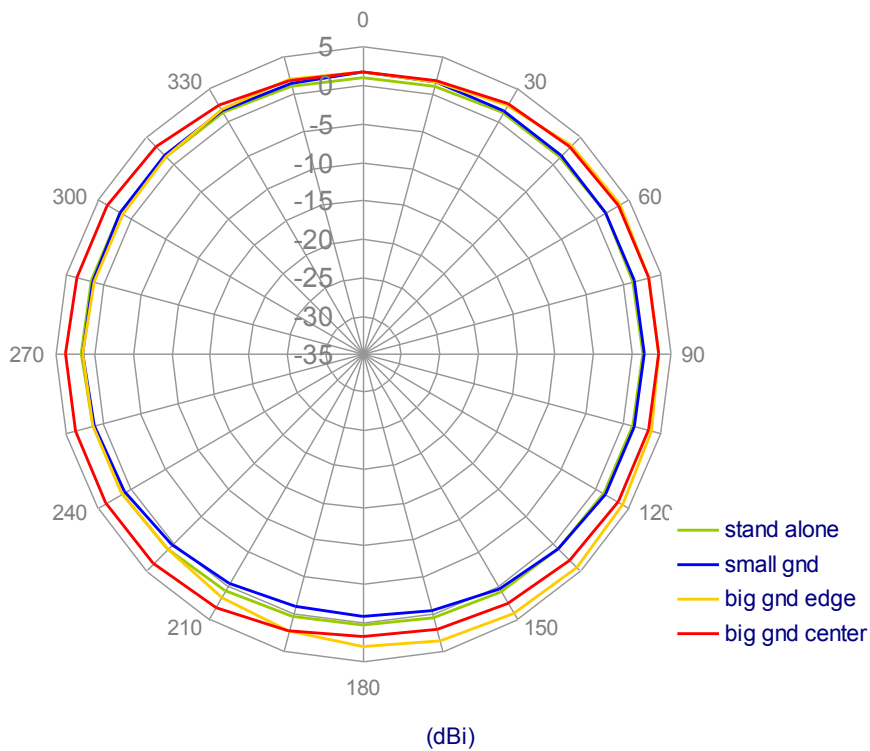
### 5.6.1 XZ Plane Radiation



### 5.6.2 XY Plane Radiation

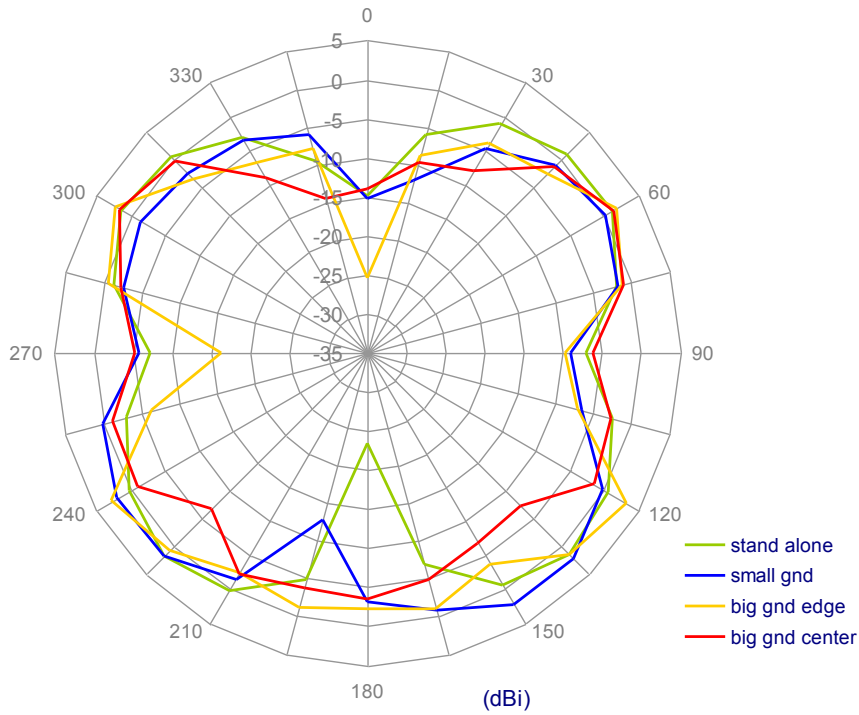


### 5.6.3 Radiation at 45 Degree from XY Plane

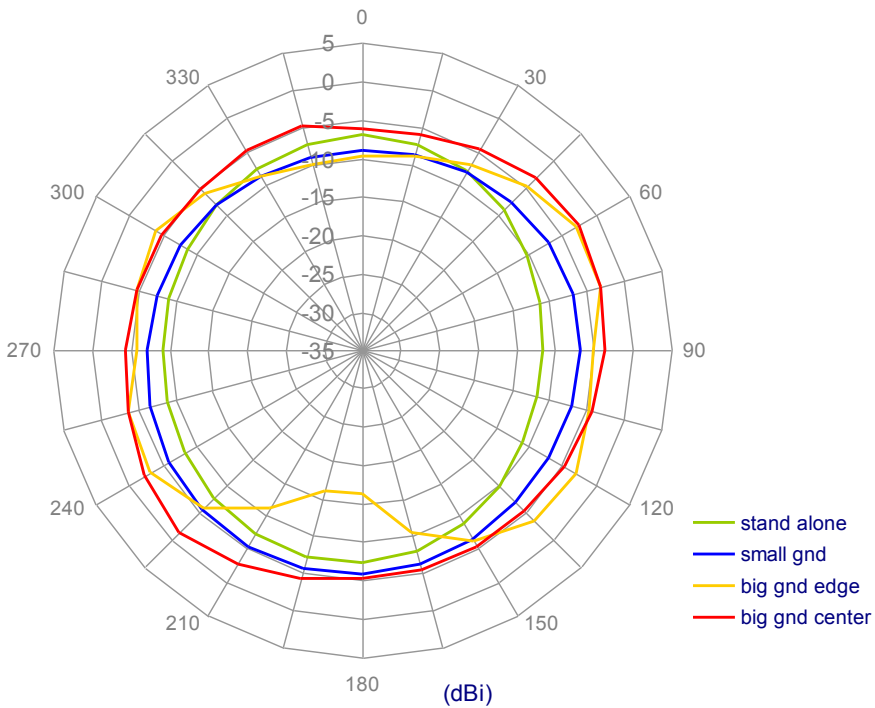


## 5.7. Radiation Pattern of 180 Degree Straight Position

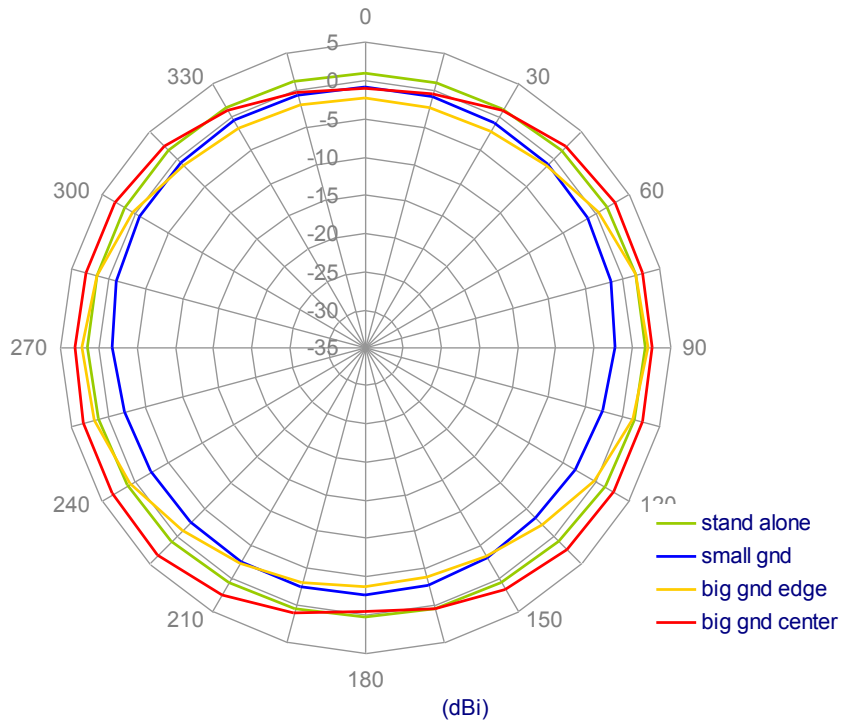
### 5.7.1 XZ Plane Radiation



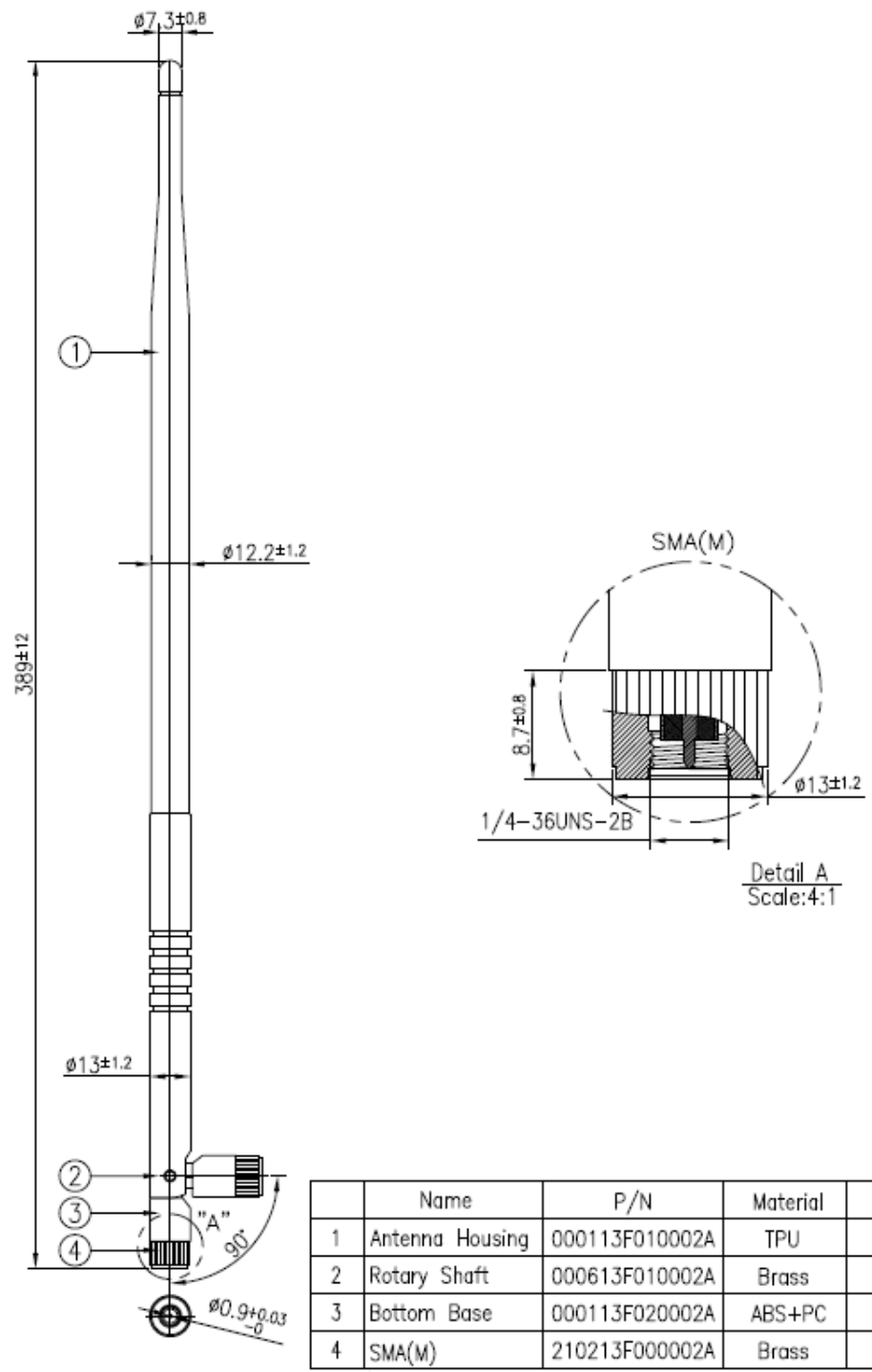
### 5.7.2 XY Plane Radiation



### 5.7.3 Radiation at 45 Degree from XY Plane



## 6. Mechanical Drawing (Unit: mm)





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