

# **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



SPE-11-8-014/G/ZL



### 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.

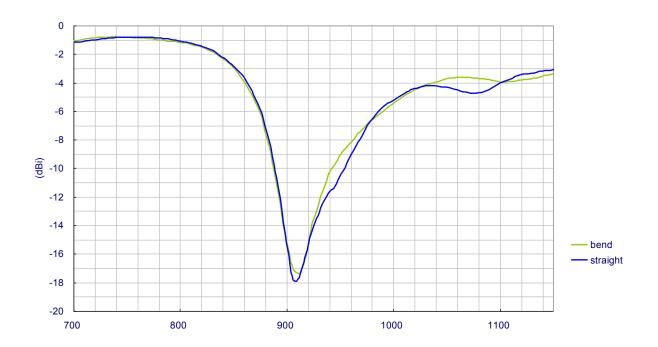
# 2. Specification

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

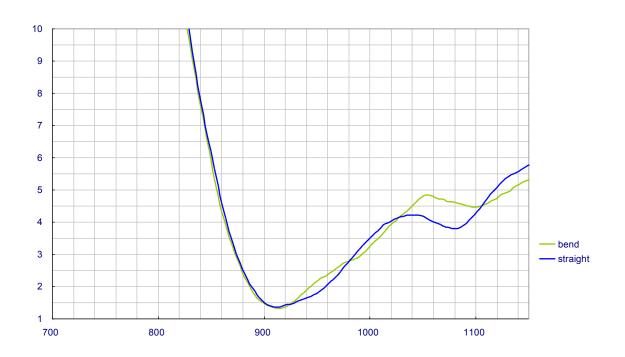


# 3. Antenna S11 Properties

### 3.1 Return Loss



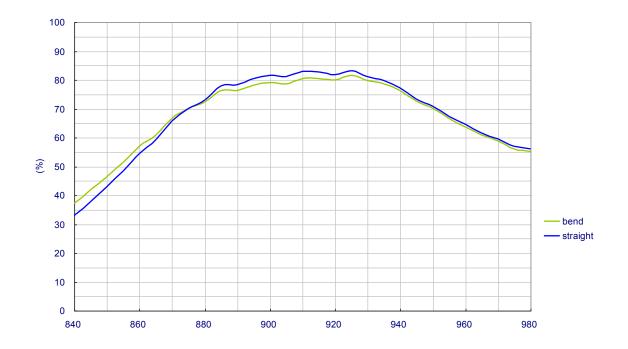
### **3.2 VSWR**





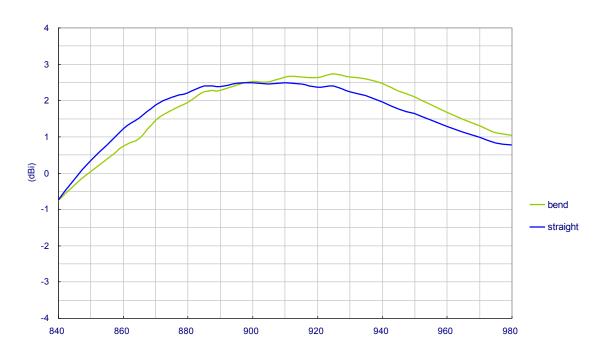
# **4. Antenna Radiation Properties**

### 4.1. 3D Radiation Efficiency

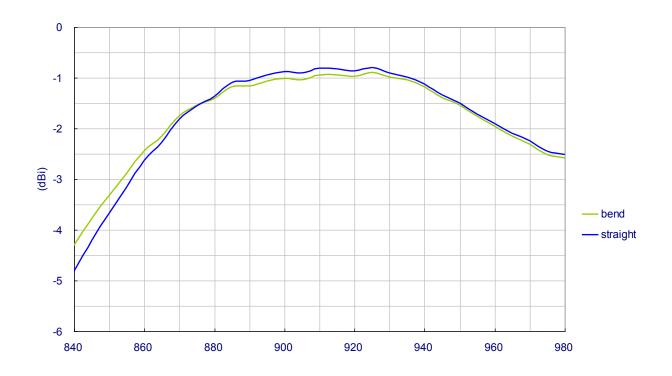




### 4.2. Peak Gain

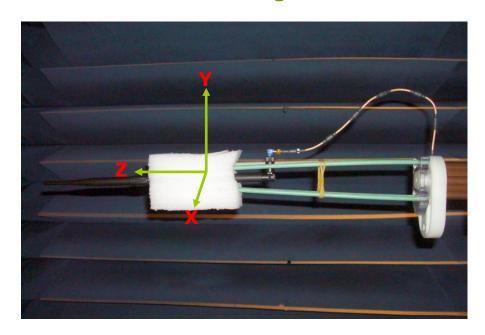


## 4.3. Average Gain

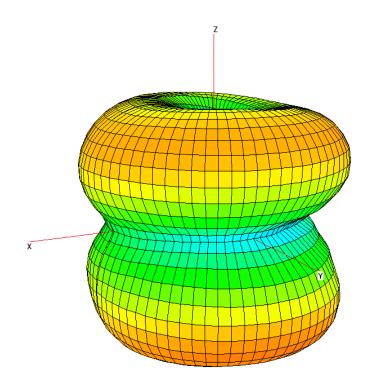




# 4.4. Radiation Pattern of 90 Degree Bent Position



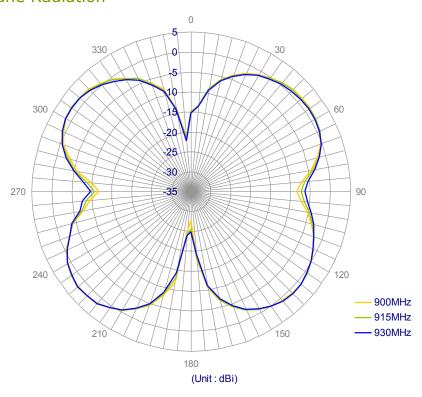
#### 4.4.1 3D Radiation Pattern



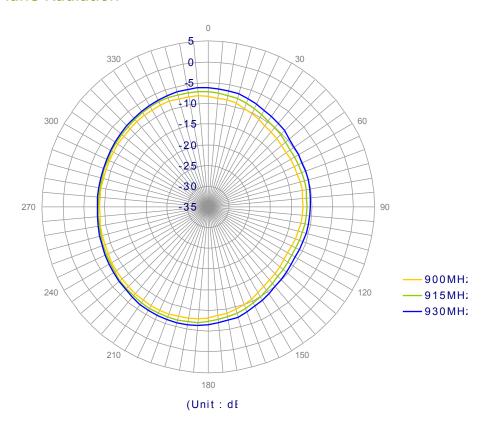
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#### 4.4.2 XZ Plane Radiation

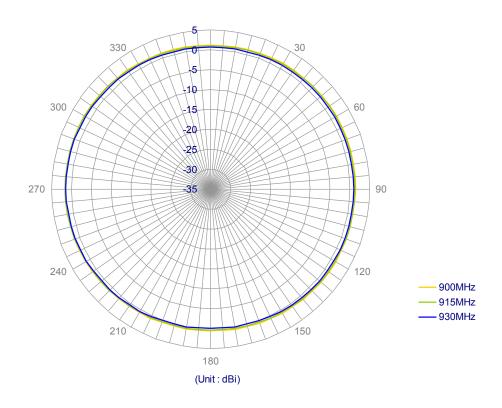


#### 4.4.3 XY Plane Radiation



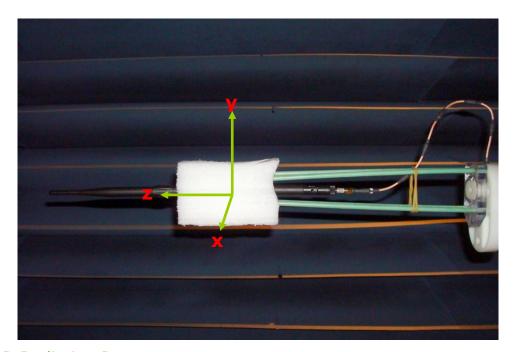


### 4.4.4 Radiation at 45 Degree from XY Plane

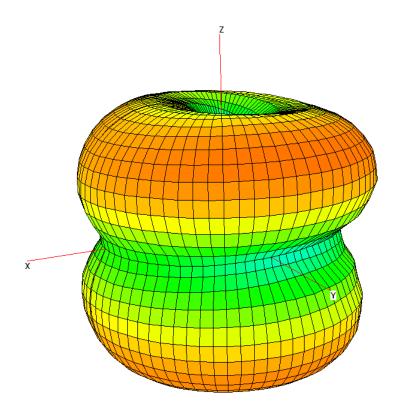




# 4.5. Radiation Pattern of 180 Degree Straight Position



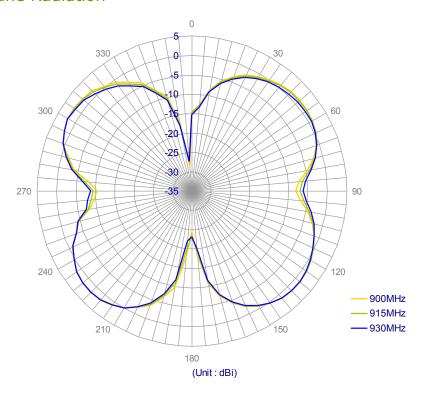
4.5.1 3D Radiation Pattern



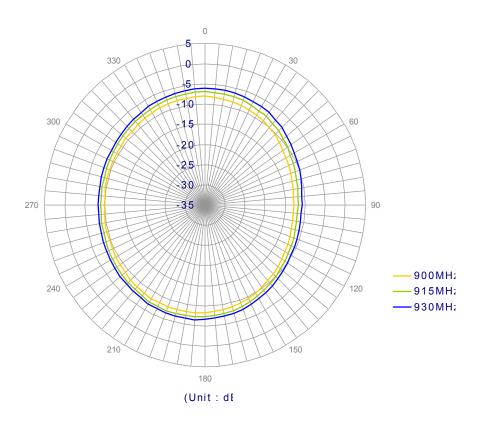
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#### 4.5.2 XZ Plane Radiation



#### 4.5.3 XY Plane Radiation

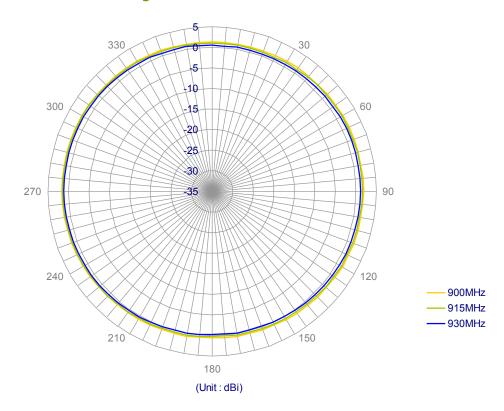


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### 4.5.4 Radiation at 45 Degree from XY Plane





### 5. Ground Plane Effect

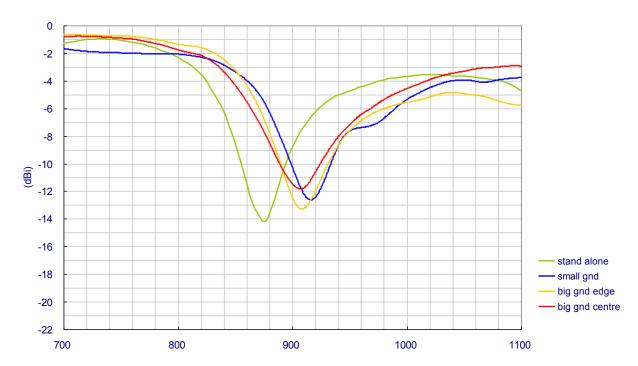
Three ground setups are used to see the affect of positioning TI.19 close to ground -

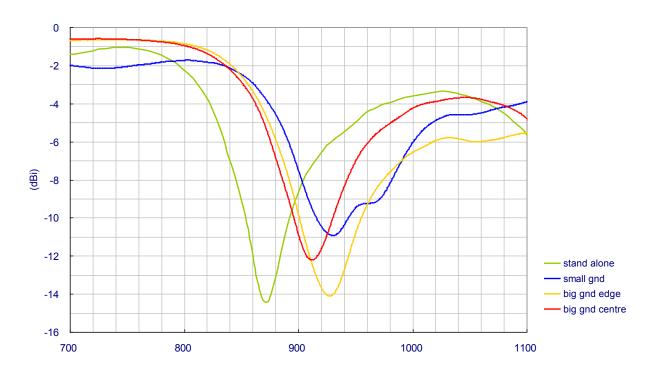
- 1. Small Ground (15\*9cm) common size of CPE devices. TI.19 is mounted at the longer edge for testing.
- 2. Big Ground Edge (45\*30cm) simulate the effect of mounting antenna on a base station device. TI.19 is mounted at the centre of the longer edge.
- 3. Big Ground Centre (45\*30cm) simulate the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



### 5.1. S11 Return Loss

### **Bent**

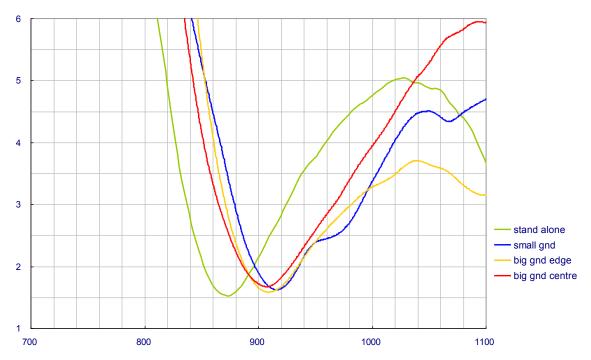


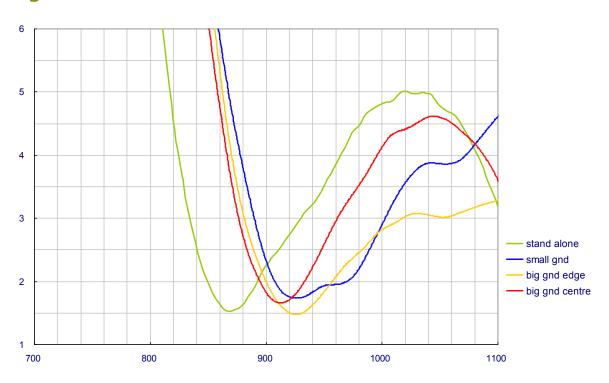




### **5.2. VSWR**

### **Bent**

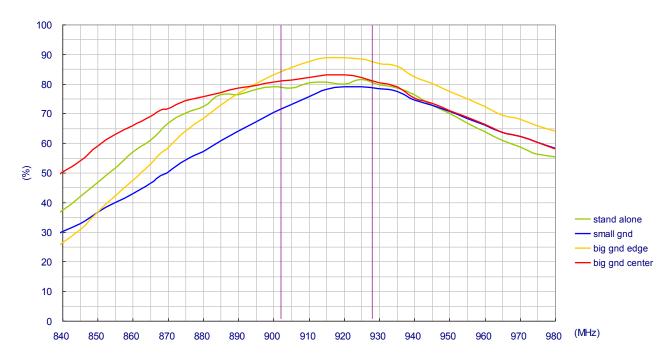


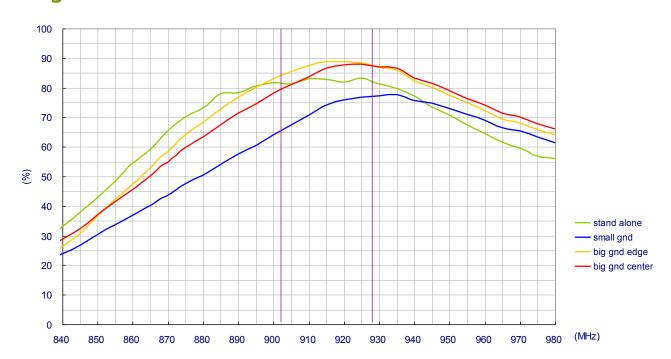




### **5.3.** Radiation Efficiency

### **Bent**

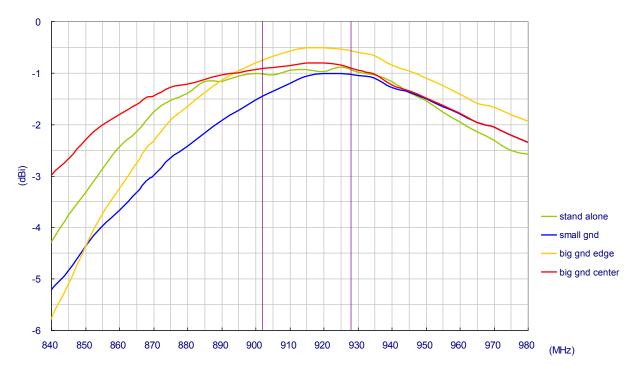


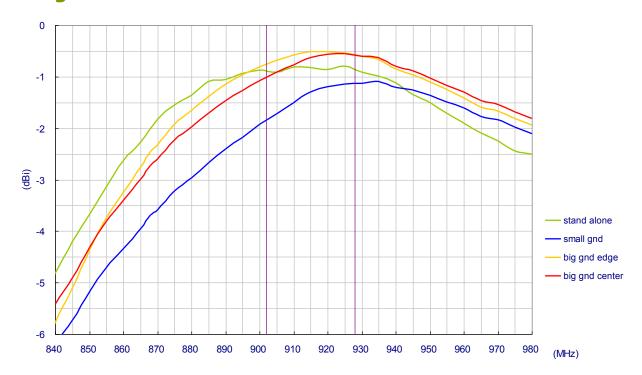




### 5.4. Average Gain

### **Bent**

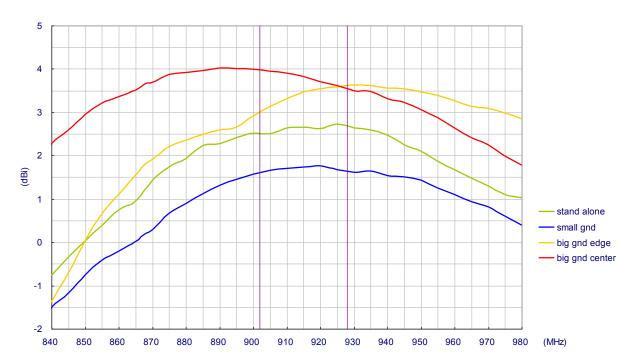


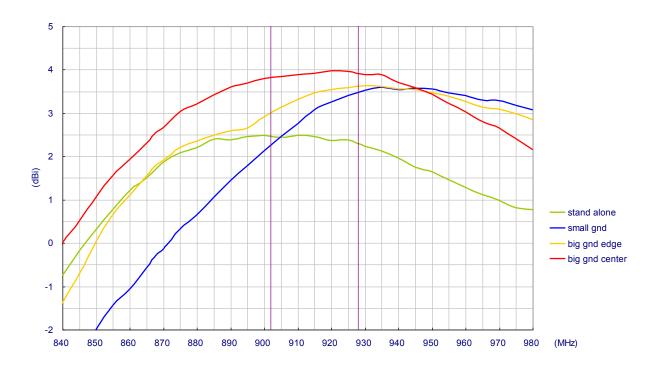




#### 5.5. Peak Gain

### **Bent**

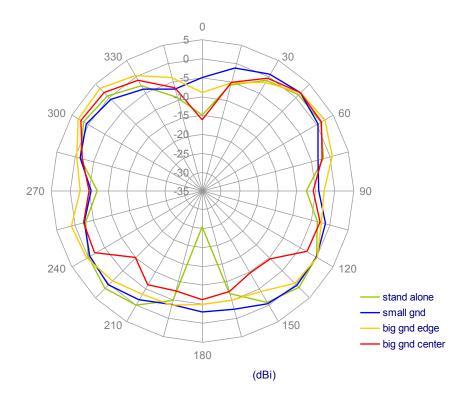






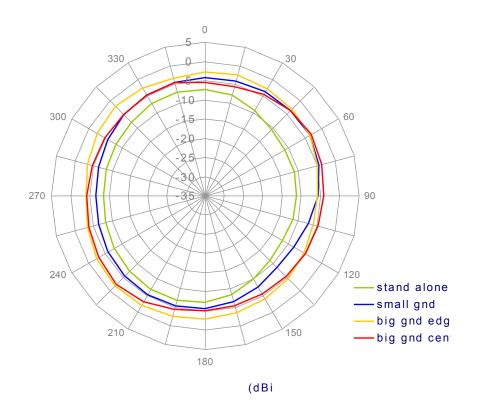
## 5.6. Radiation Pattern of 90 Degree Bent Position

#### 5.6.1 XZ Plane Radiation

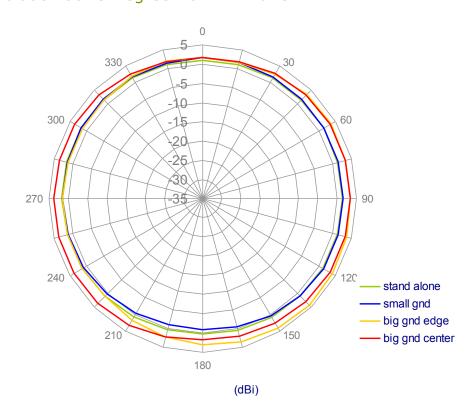




#### 5.6.2 XY Plane Radiation



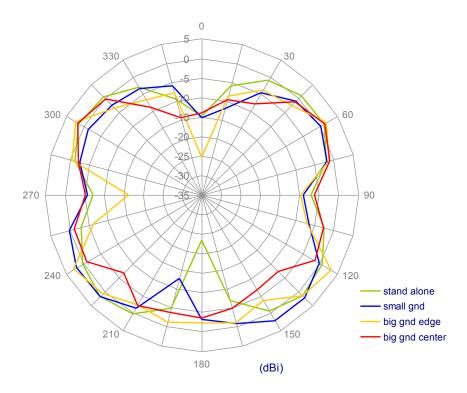
#### 5.6.3 Radiation at 45 Degree from XY Plane



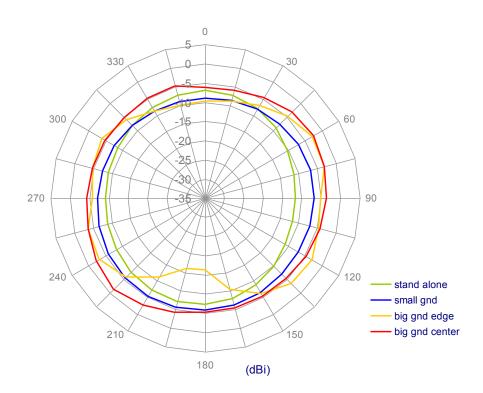


### 5.7. Radiation Pattern of 180 Degree Straight Position

#### 5.7.1 XZ Plane Radiation



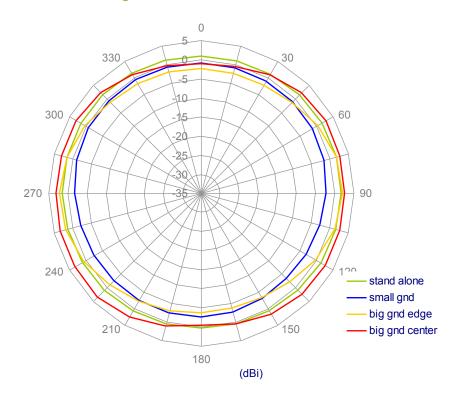
#### 5.7.2 XY Plane Radiation



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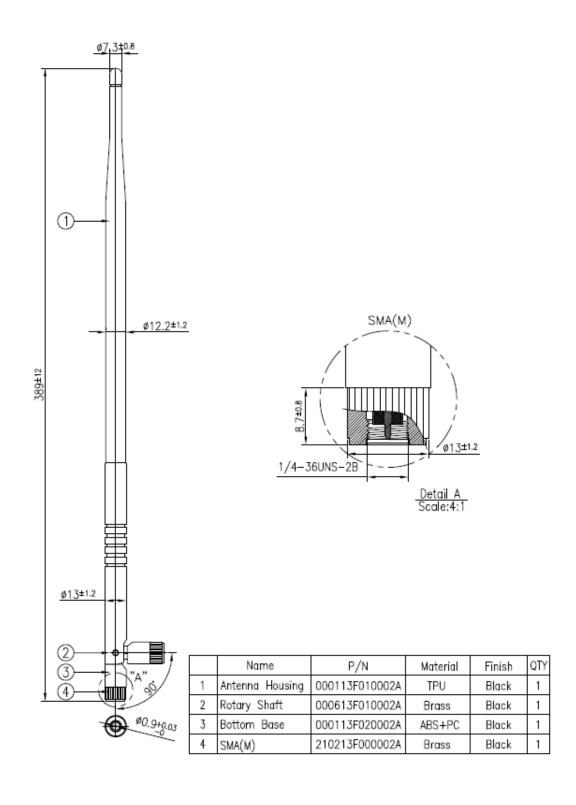


## 5.7.3 Radiation at 45 Degree from XY Plane





# 6. Mechanical Drawing (Unit: mm)





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