



**THE DATASHEET OF  
TI.08.A.0111**



## Specification

- Part No. : **TI.08.A.0111**
- Product Name : 868MHz ISM Band Dipole Terminal Antenna
- Feature : SMA Plug(M) Connector  
High radiation efficiency and robust handling  
**RoHS compliant**



## 1. Introduction

The TI.08.0A.0111 is high performance 868MHz ISM band dipole Omni-directional antenna. The antenna features an SMA(M) connector as standard, the antenna has a high Radiation efficiency of 35% in free space. The antenna is fabricated using TPU which allows for robust handling, while remaining lightweight

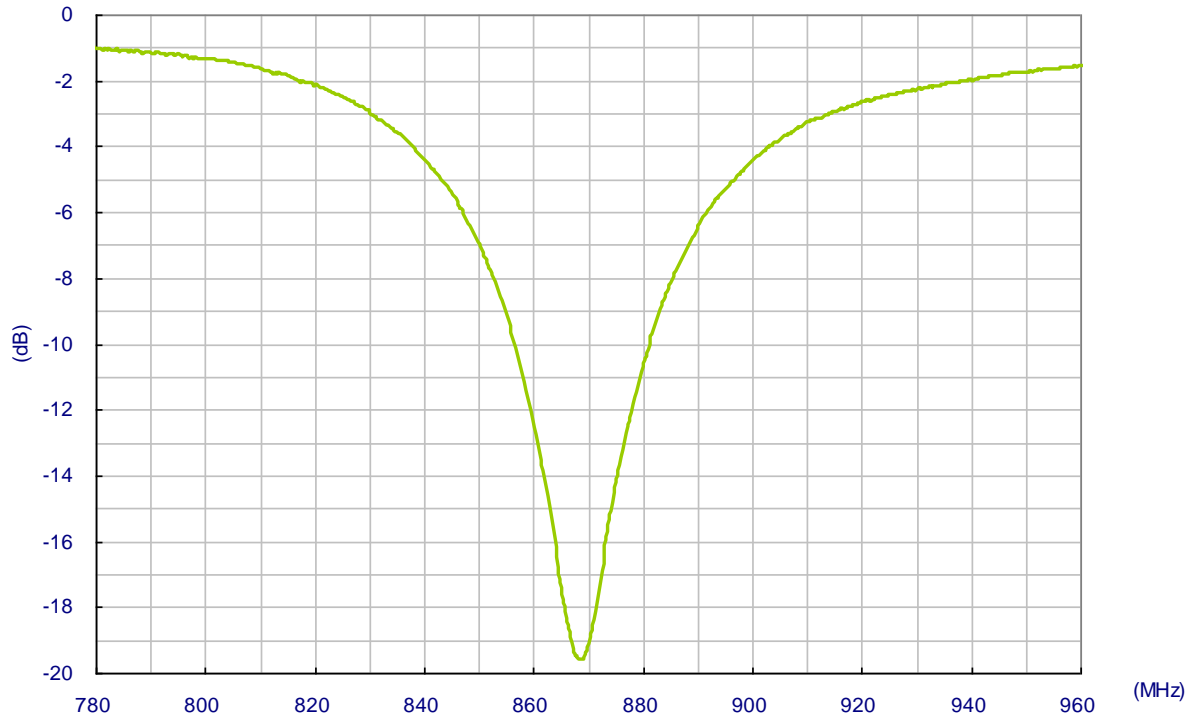
## 2. Specification

ELECTRICAL	
Centre Frequency	868 ~ 870MHz
Peak Gain	-1.7dBi
Average Gain	-4.4dBi
Radiation Efficiency	35%
VSWR	1.5 : 1 max
Polarization	Linear
Impedance	50 $\Omega$
MECHANICAL	
Dimensions	168 x $\phi$ 12 mm
Housing Material	TPU
Connector	SMA (MA)
Weight	21g
ENVIRONMENTAL	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 105°C
Relative Humidity	40% to 95%

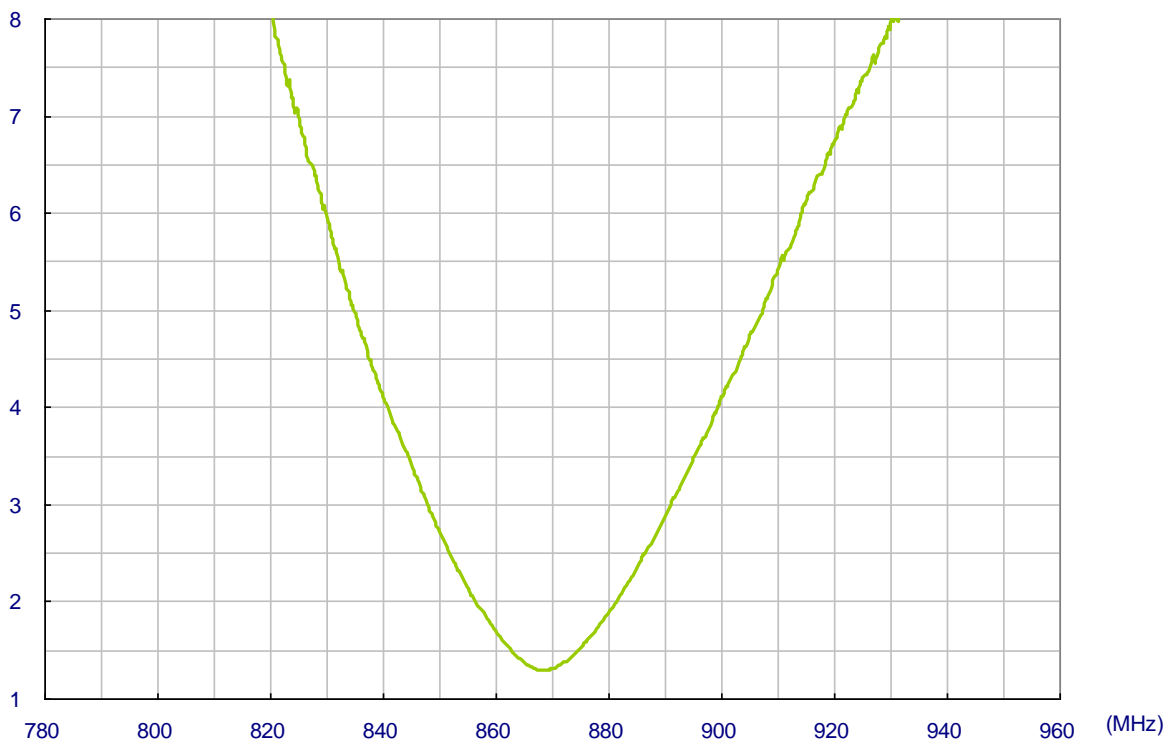
\* Electrical properties are measured with the antenna in free space.

### 3. Antenna Free Space S11 Performance

#### 3.1. Return Loss

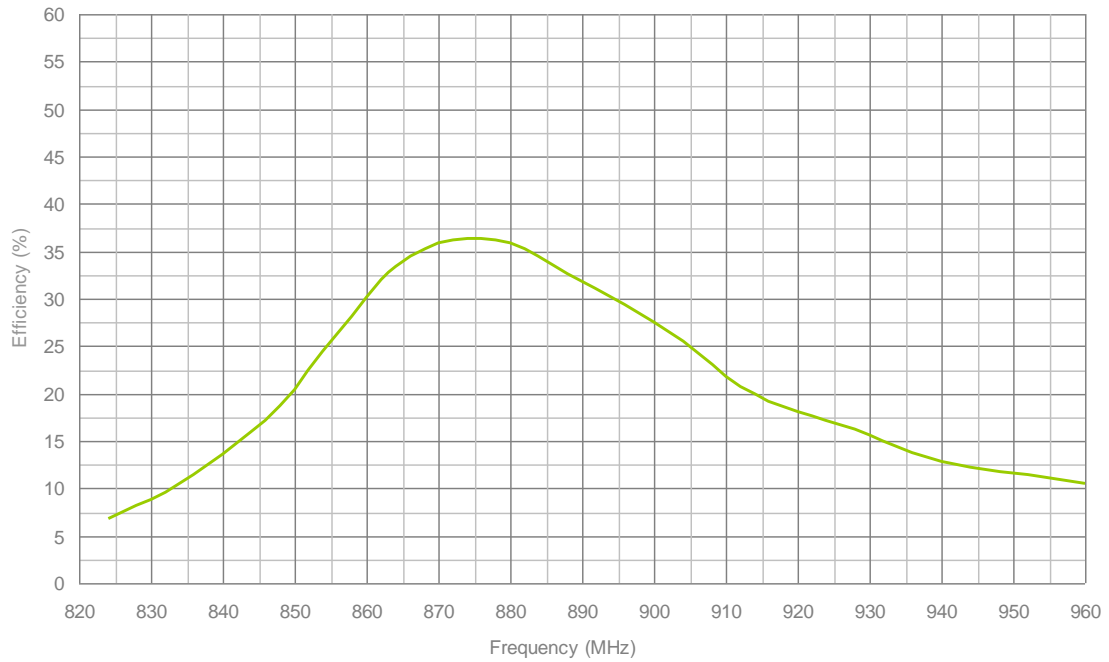


#### 3.2 VSWR

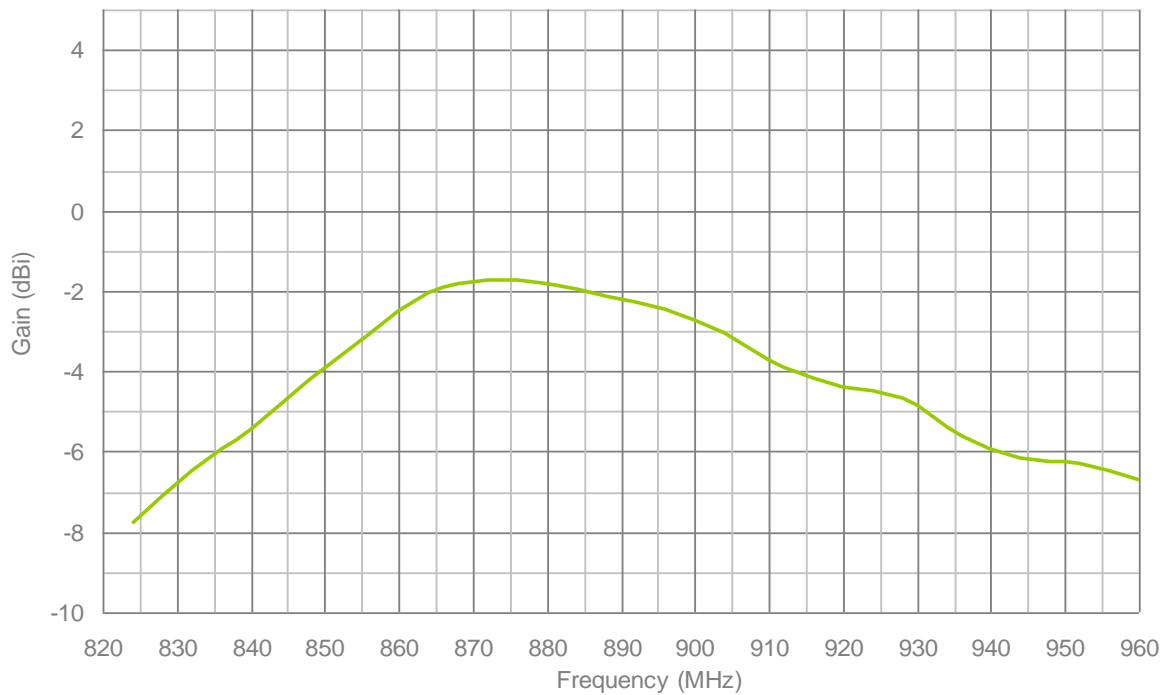


## 4. Antenna Free Space Radiation Property

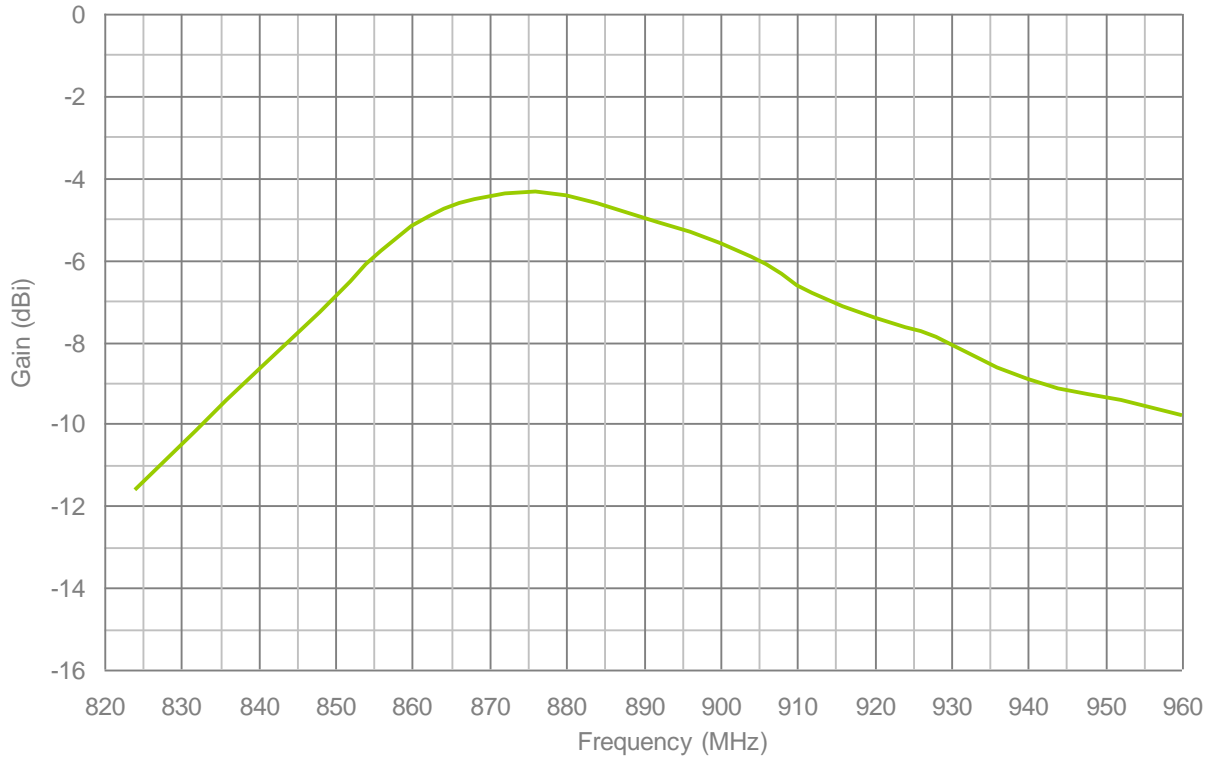
### 4.1 Radiation Efficiency



### 4.2 Peak Gain

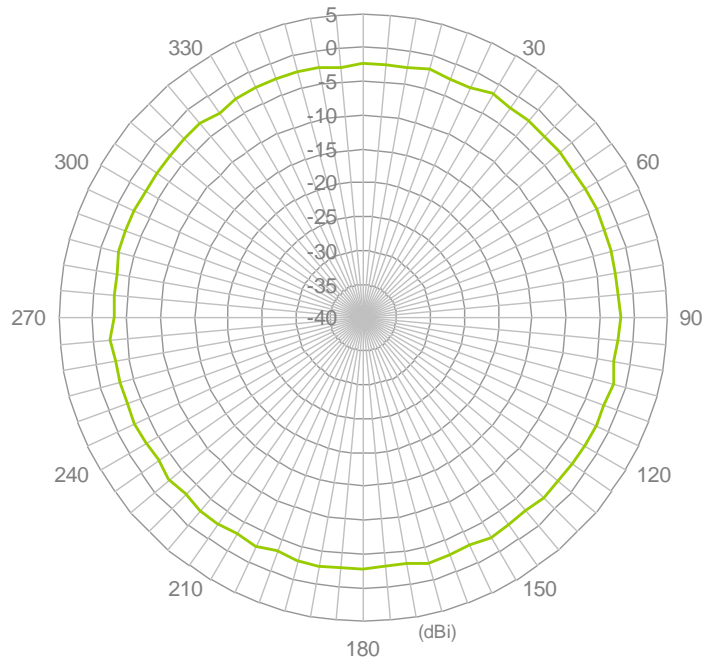


### 4.3 Average Gain

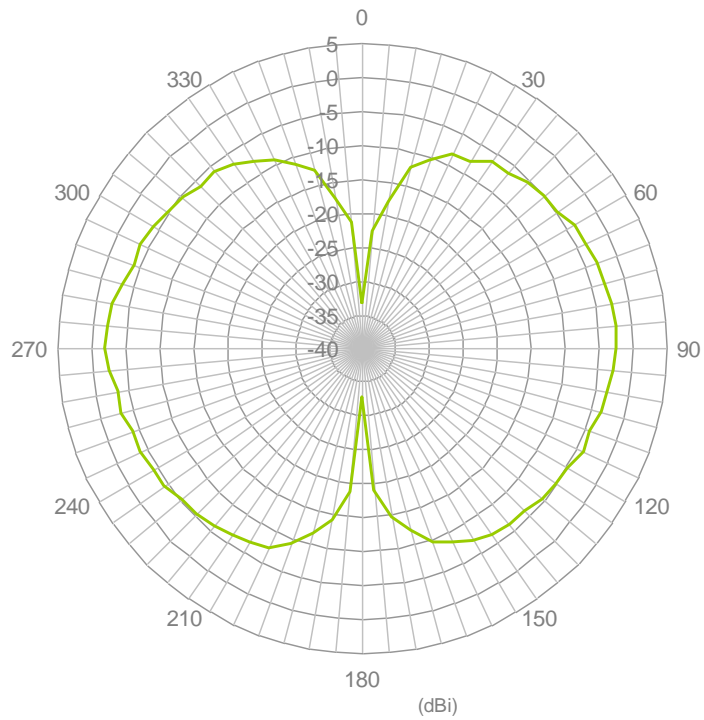


## 4.4 868MHz Free Space Radiation Pattern

### H-Plane Radiation



### 4.5 E-Plane Radiation



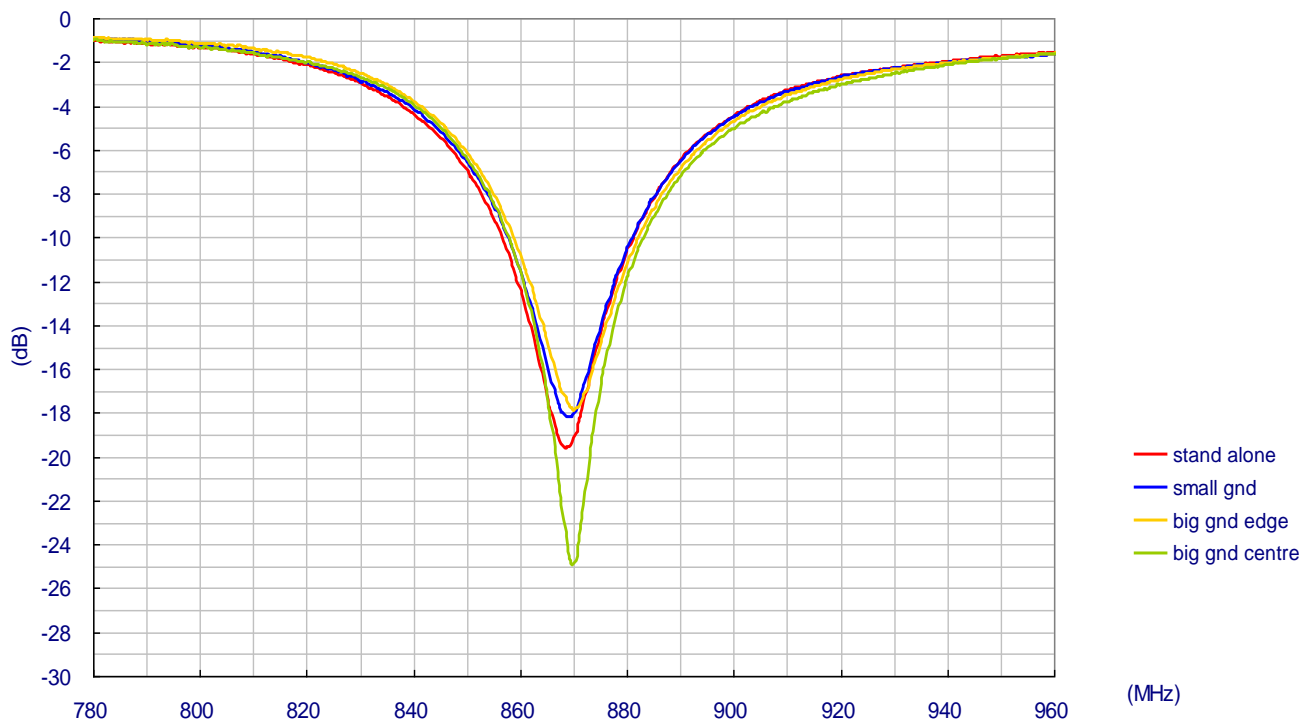
## 5. Ground Plane Effect

Three ground setups are used to see the affect of positioning TI.08 close to ground -

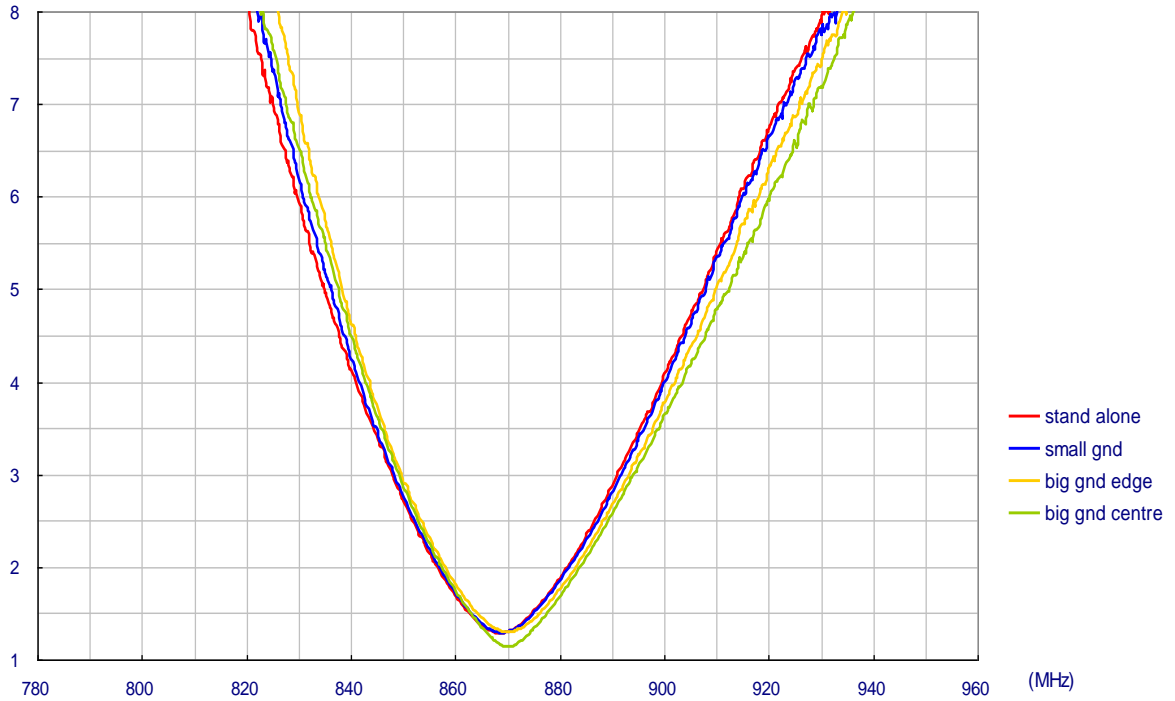
1. Small Ground (15 x 9cm) – common size of CPE devices. TI.08 is mounted at the longer edge for testing.
2. Big Ground Edge (45 x 30cm) – simulate the effect of mounting antenna on a base station device. TI.08 is mounted at the centre of the longer edge.
3. Big Ground Centre (45 x 30cm) – simulate the effect of mounting antenna in a centre of a big ground plane, such as vehicle top.

## 6. S11 Performance of TI.08 with Different Ground

### 6.2 Return Loss

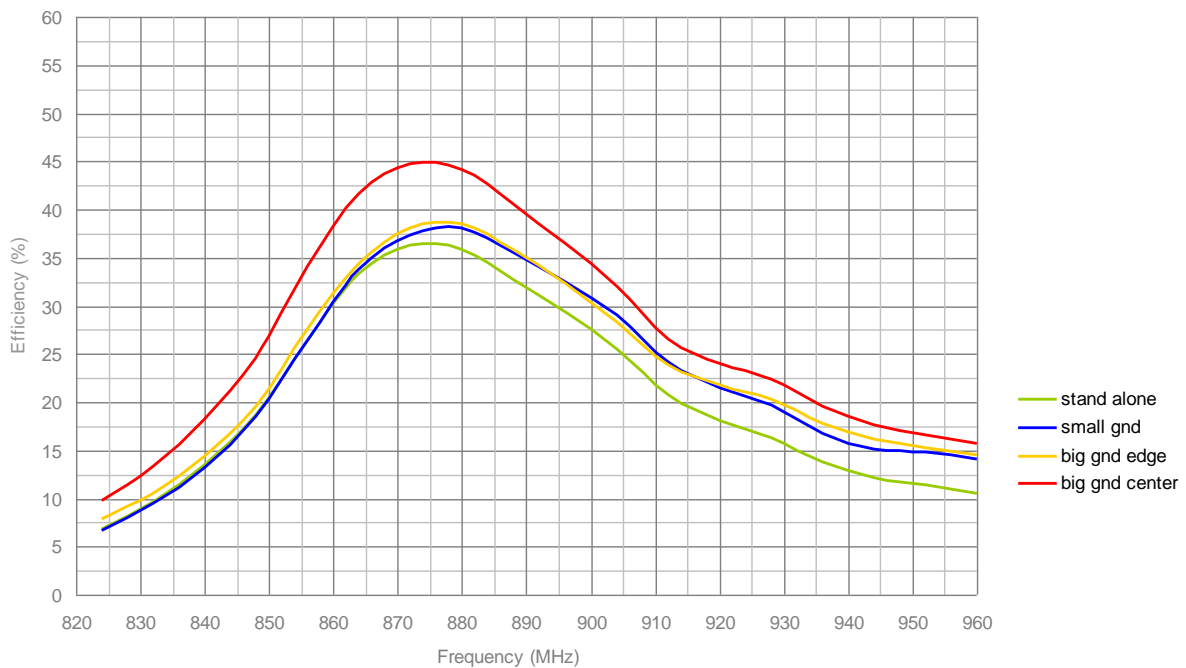


### 6.3 VSWR

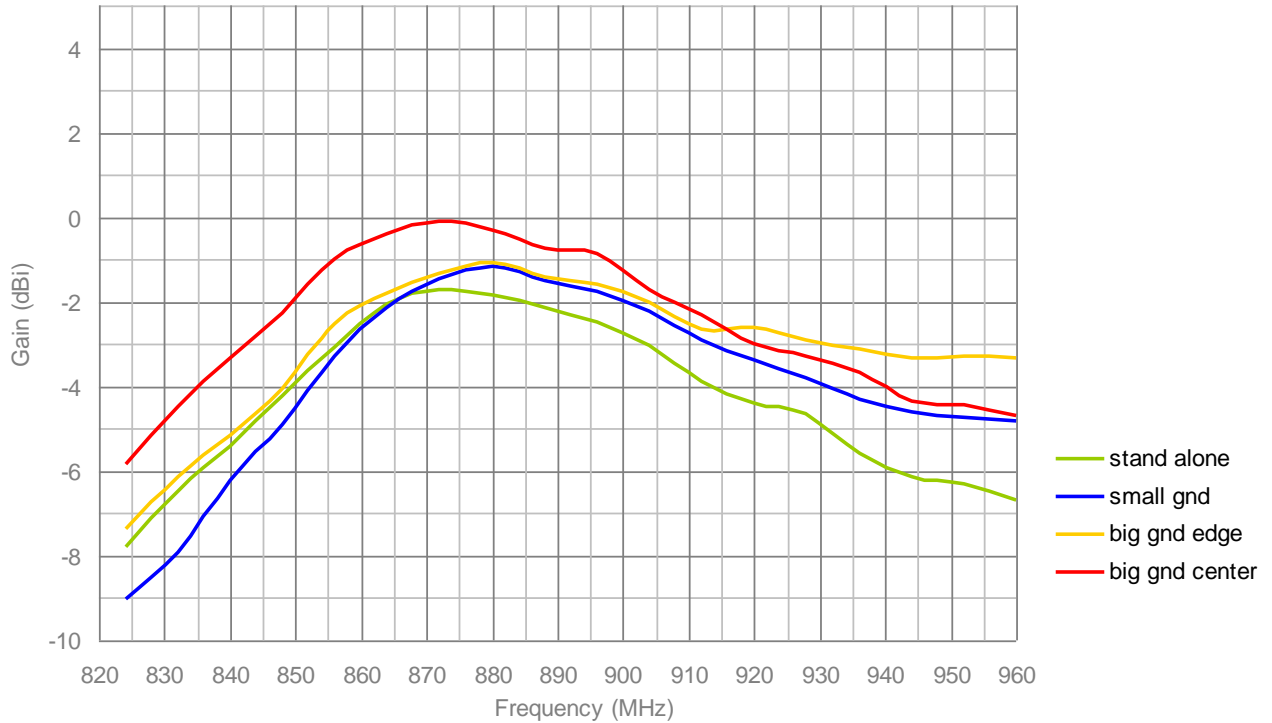


## 7. Radiation Property of TI.08 with Different Ground

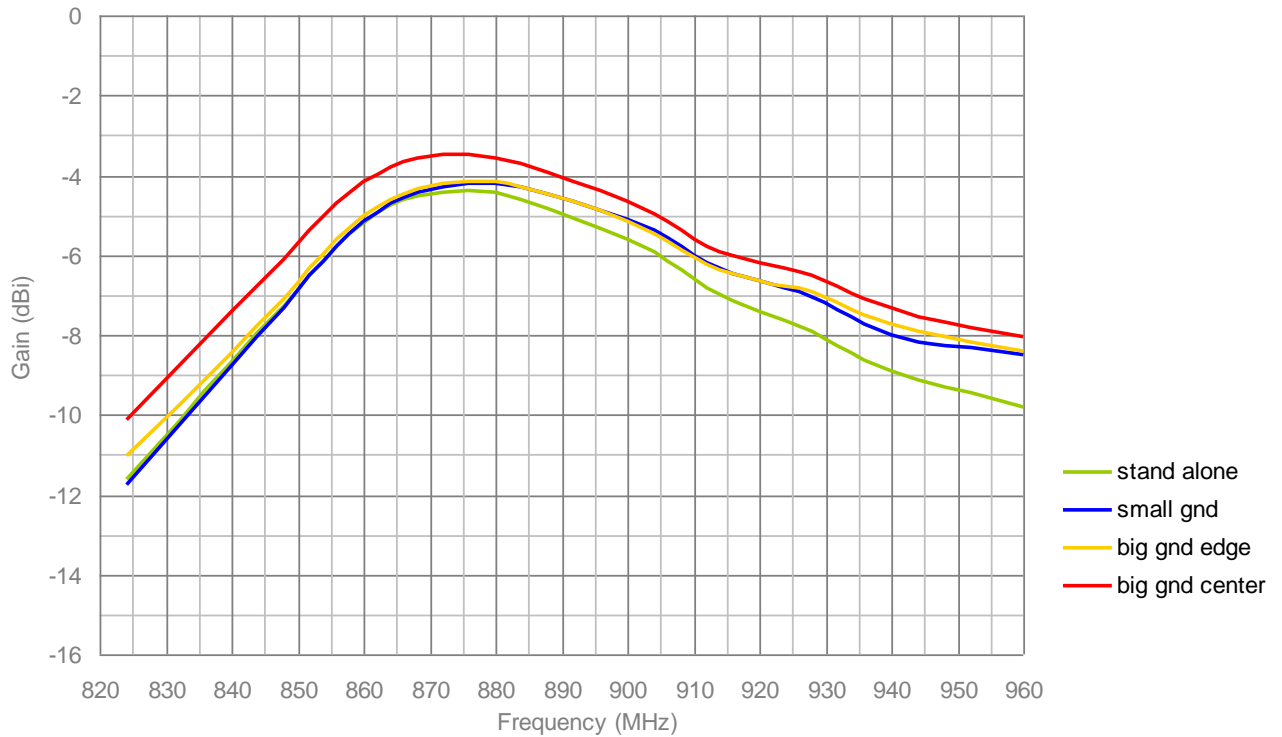
### 7.1 Radiation Efficiency



## 7.2 Antenna Peak Gain

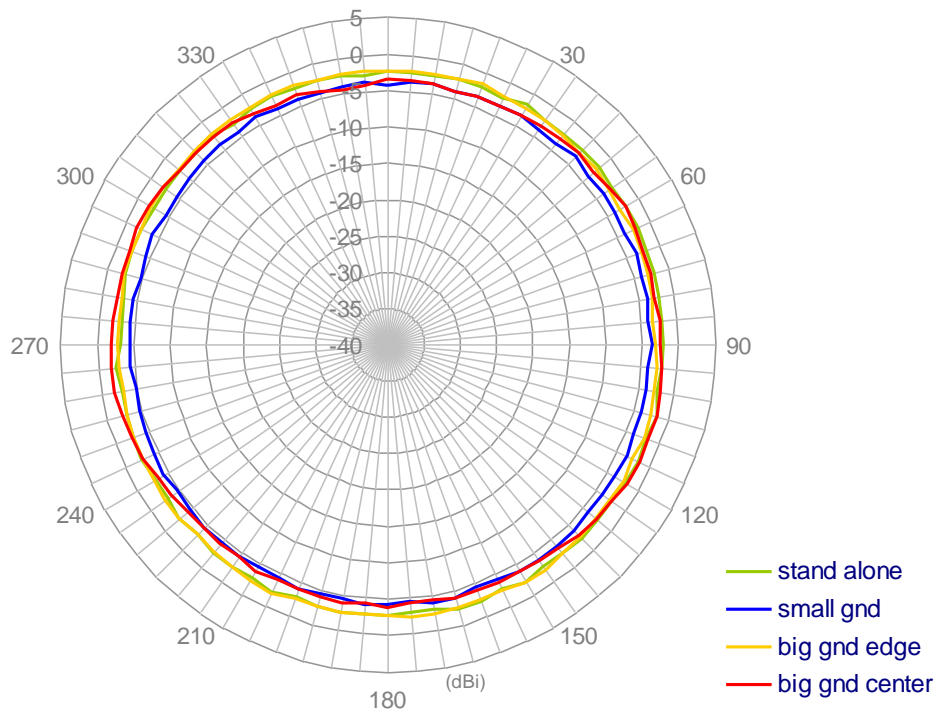


## 7.3 Average Gain

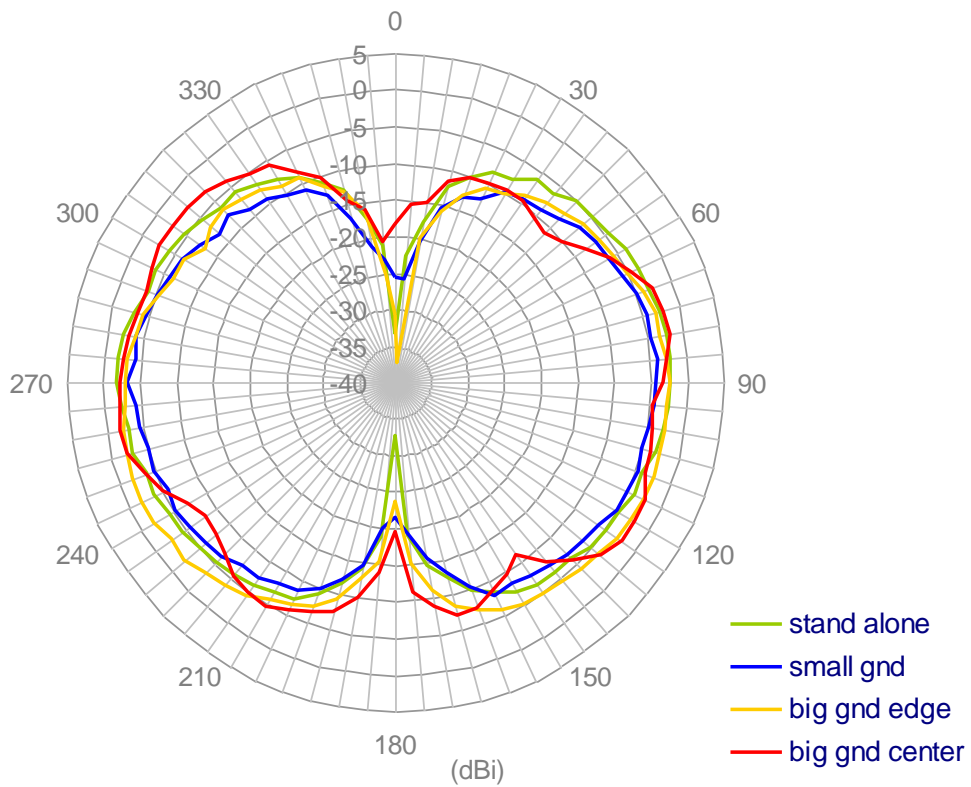


## 7.4 Radiation Pattern

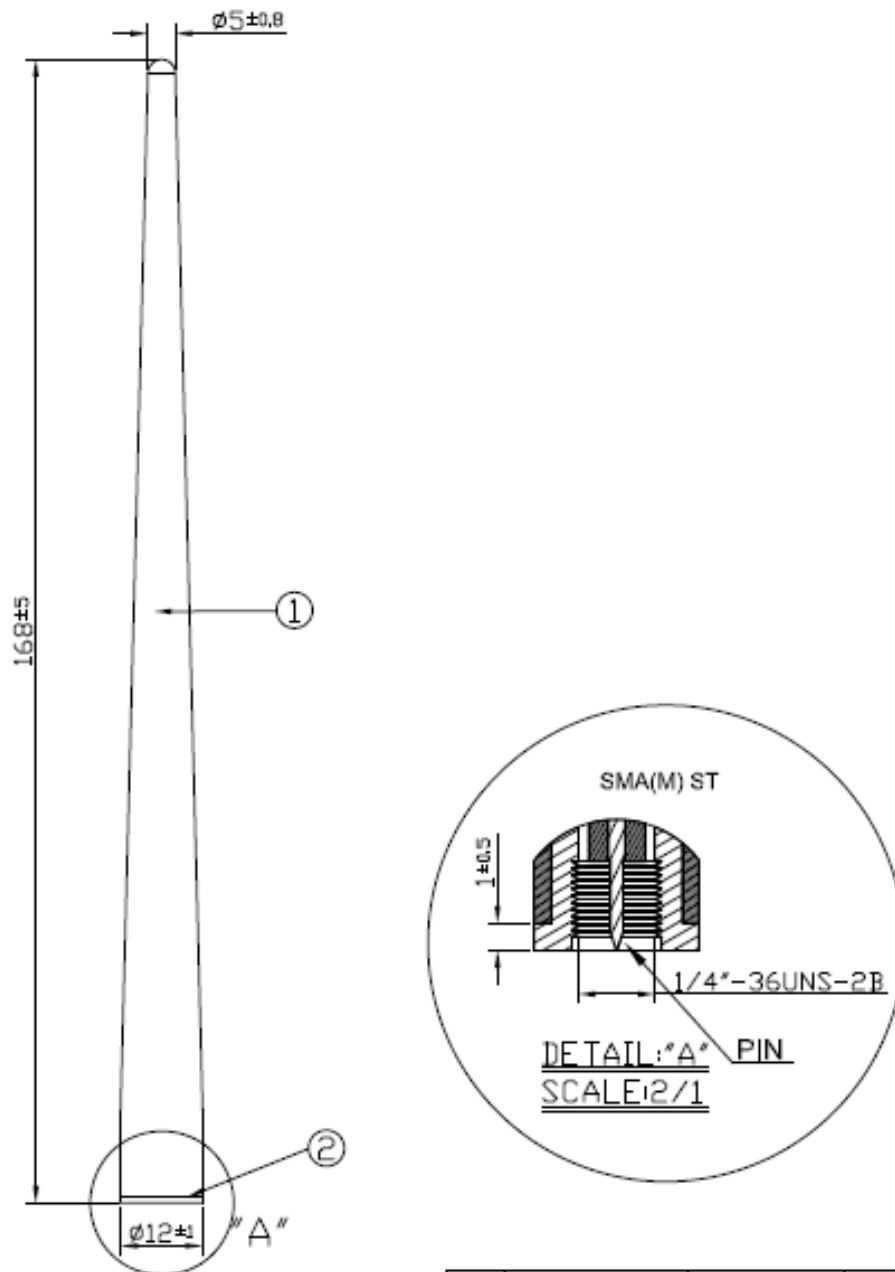
### H-Plane Radiation



### E-Plane Radiation



## 8. Mechanical Drawing



	Name	Material	Finish
①	Antenna Housing	TPU	Black
②	SMA(M) ST	Brass	Black

Unit : mm

## 9. Packaging

TBC.

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