

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



I. 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

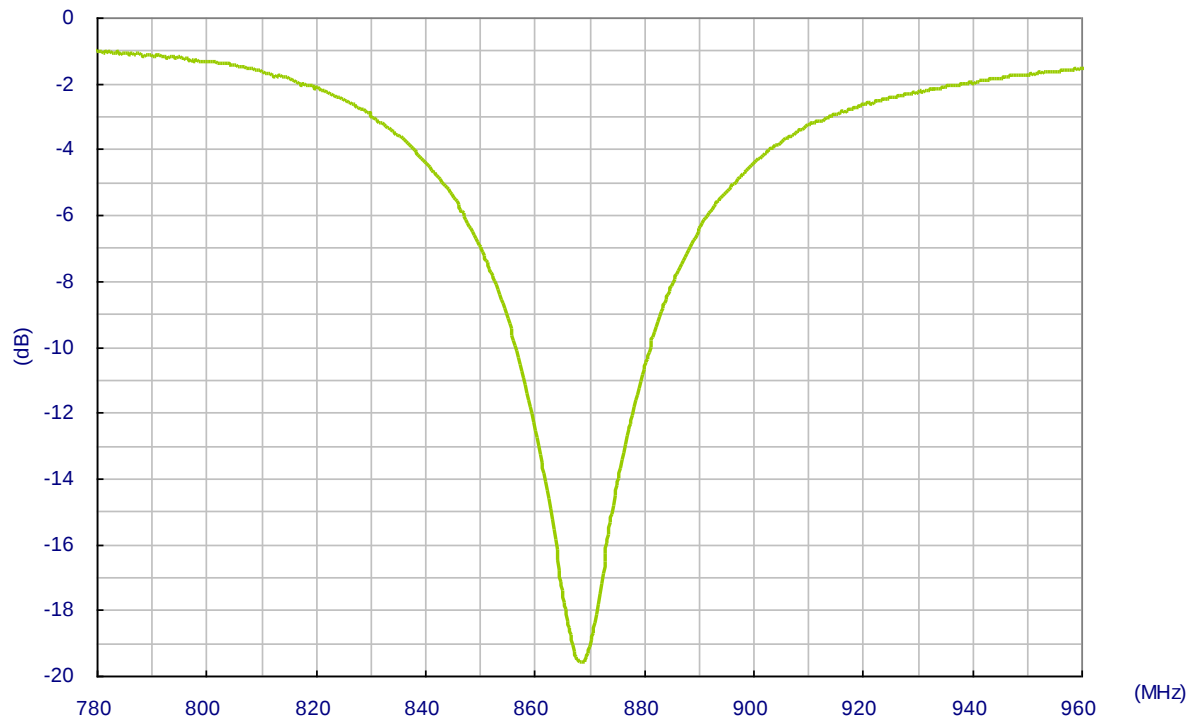
II. Specification

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 Ω
MECHANICAL	
Dimensions	168 x ϕ 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%

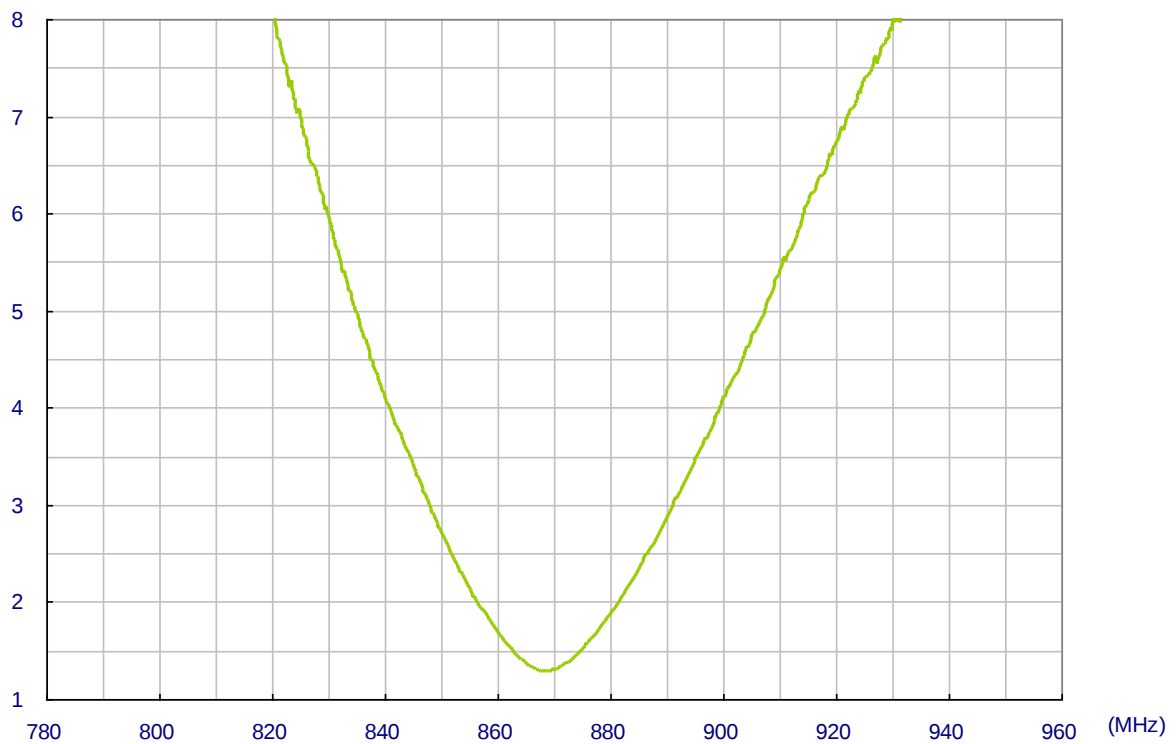
* Electrical properties are measured with the antenna in free space.

III. Antenna Free Space S11 Performance

Return Loss

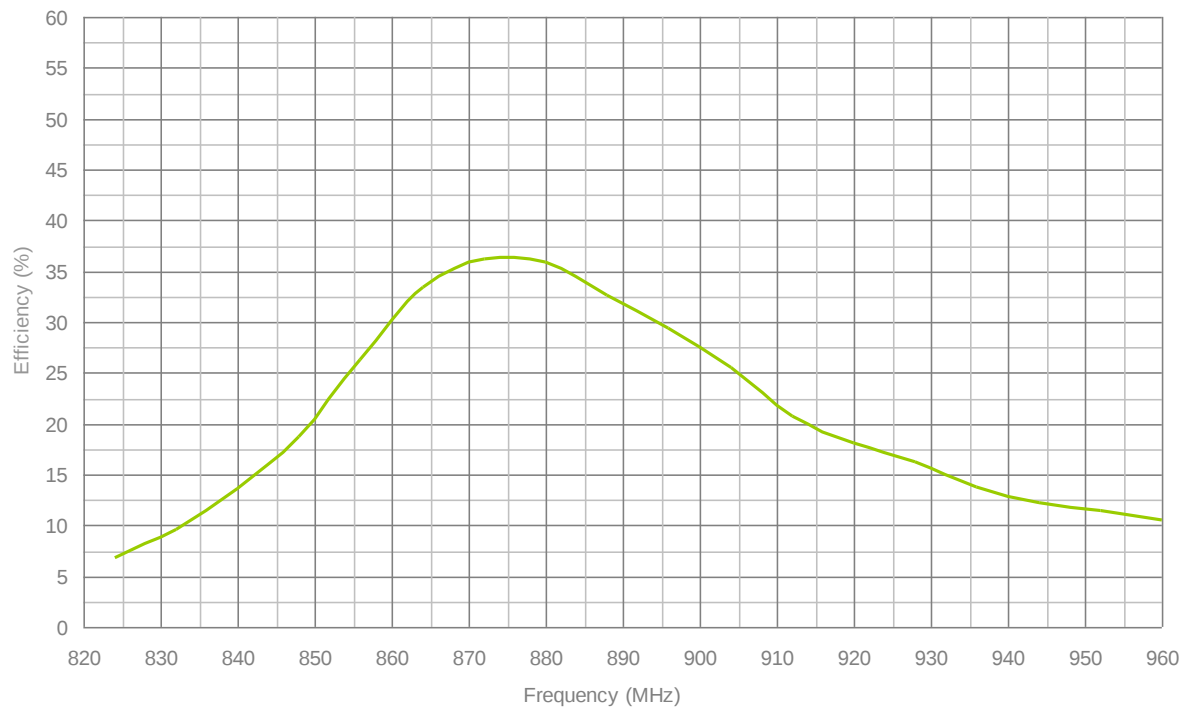


VSWR

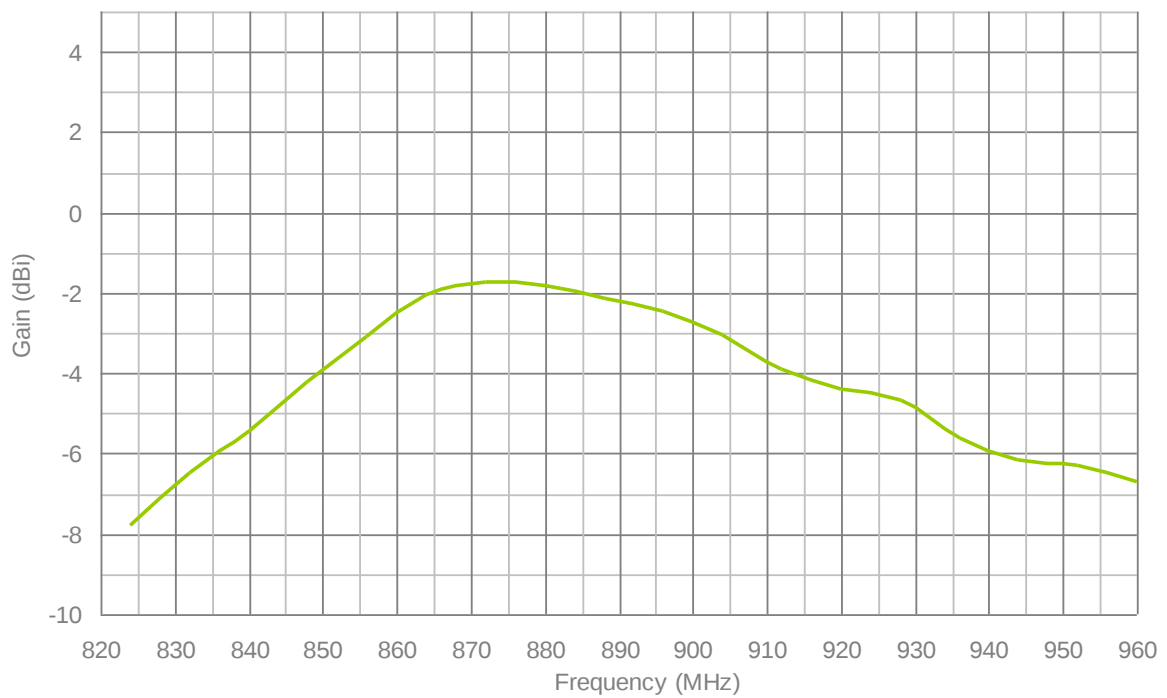


IV. Antenna Free Space Radiation Property

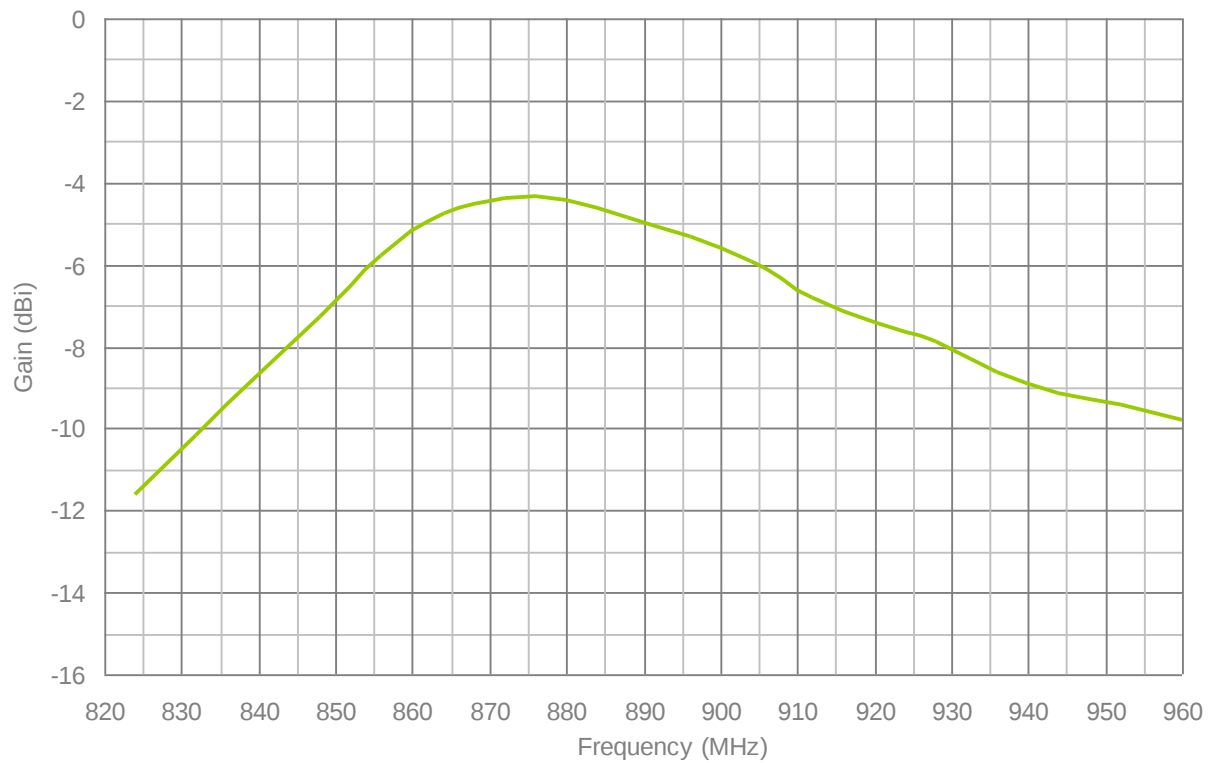
IV.1. Radiation Efficiency



IV.2. Peak Gain

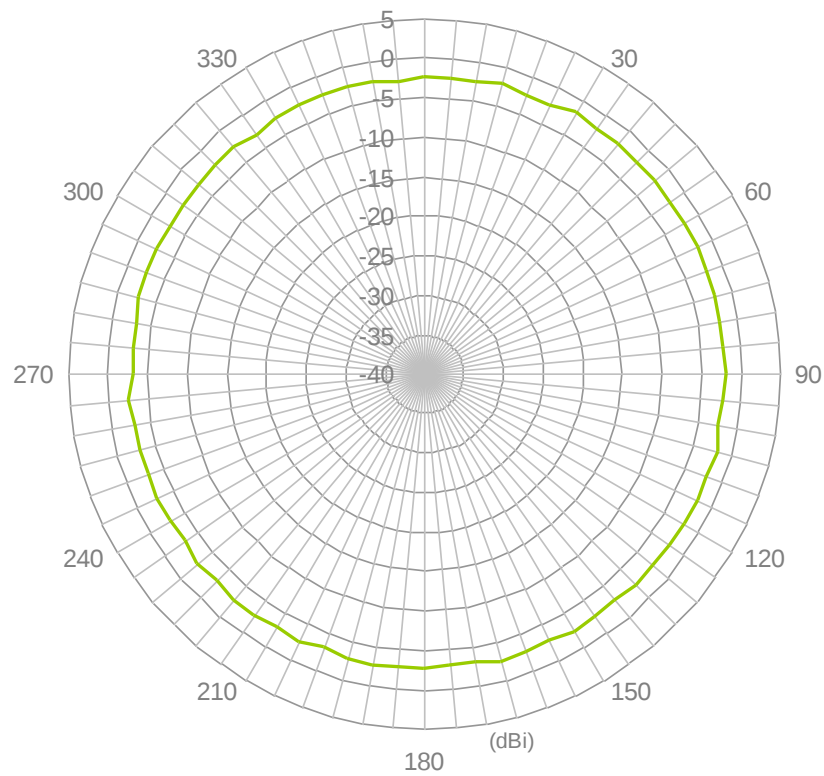


IV.3. Average Gain

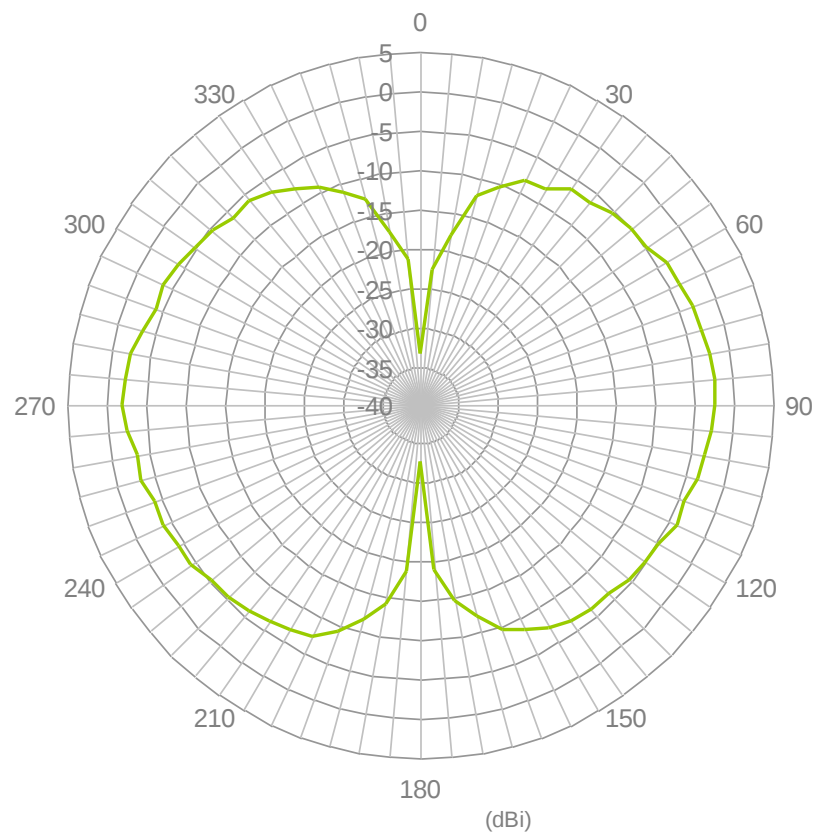


IV.4. 868MHz Free Space Radiation Pattern

H-Plane Radiation



E-Plane Radiation



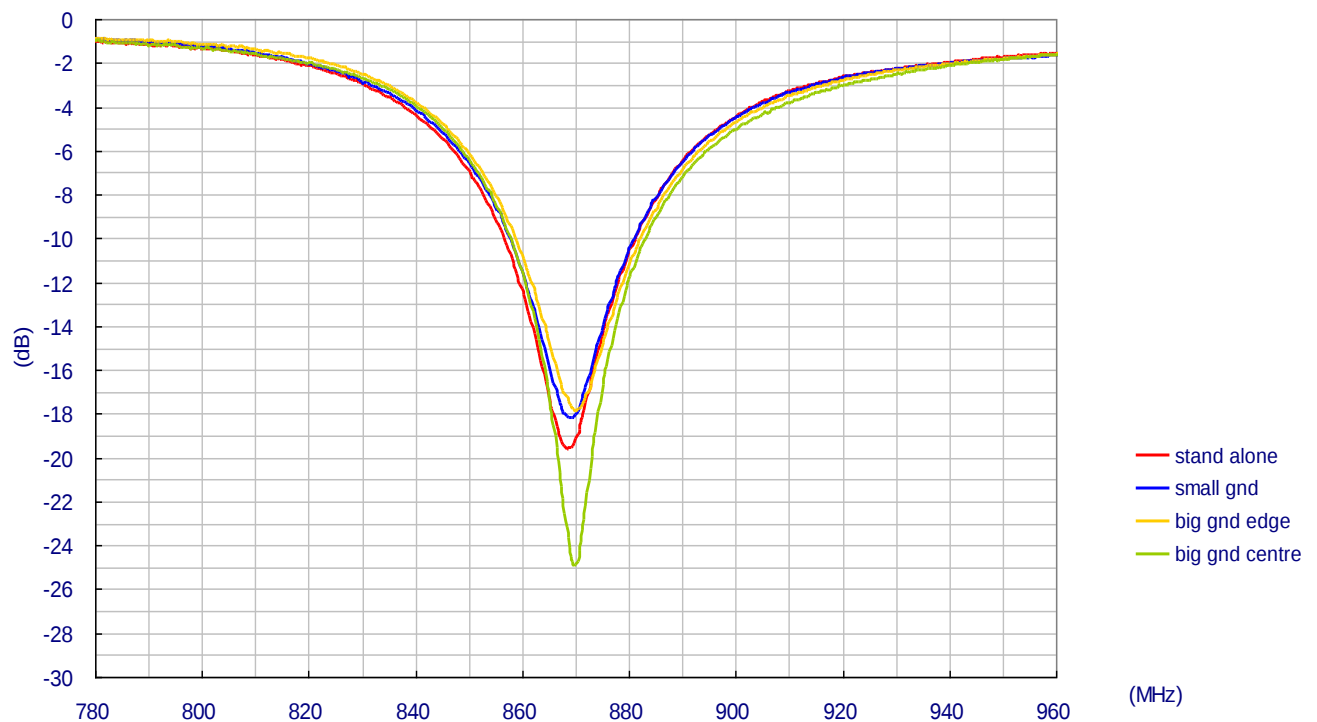
V. Ground Plane Effect

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

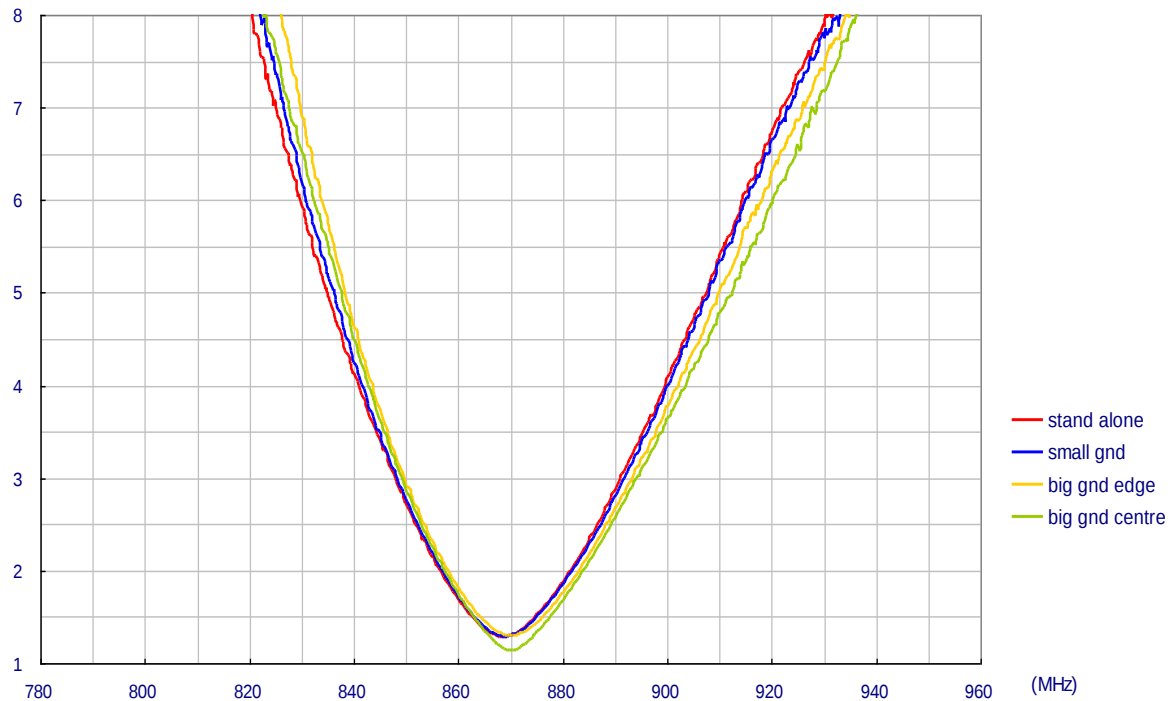
1. Small Ground (15 x 9cm) – common size of CPE devices. TI.08 is mounted at the longer edge for testing.
2. Big Ground Edge (45 x 30cm) – simulate the effect of mounting antenna on a base station device. TI.08 is mounted at the centre of the longer edge.
3. Big Ground Centre (45 x 30cm) – simulate the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

S11 Performance of TI.08 with Different Ground

Return Loss

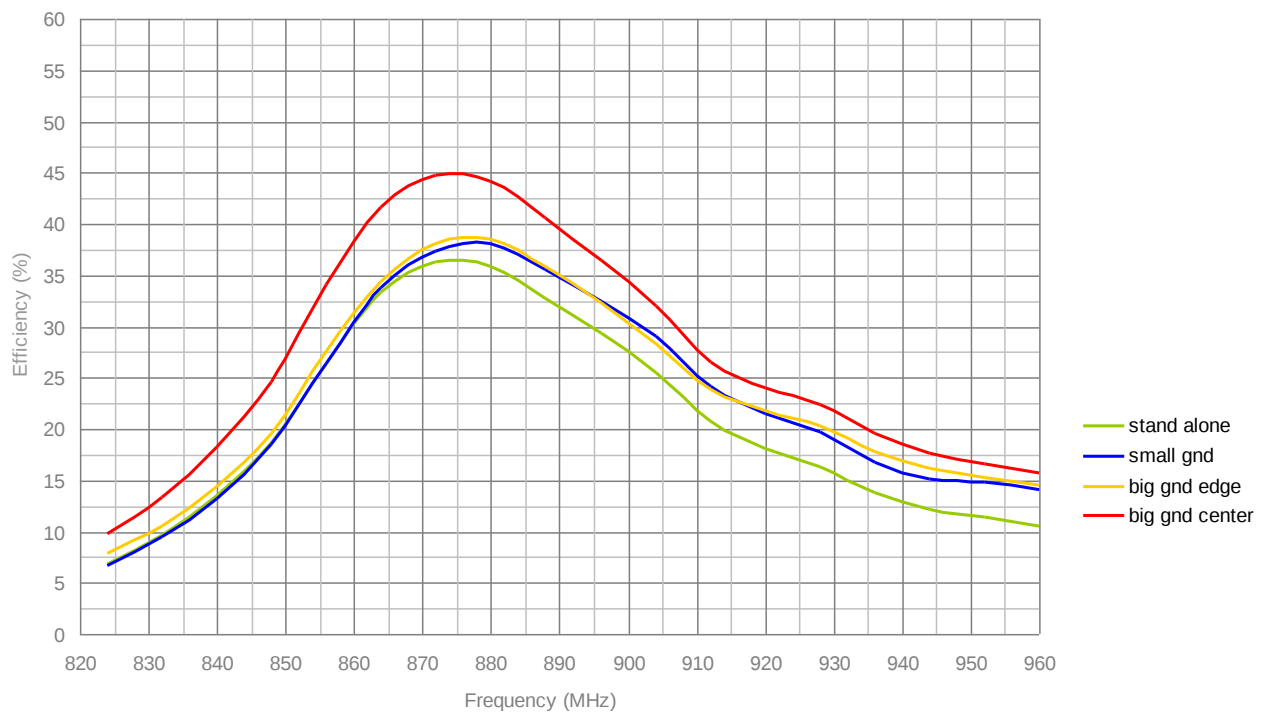


VSWR

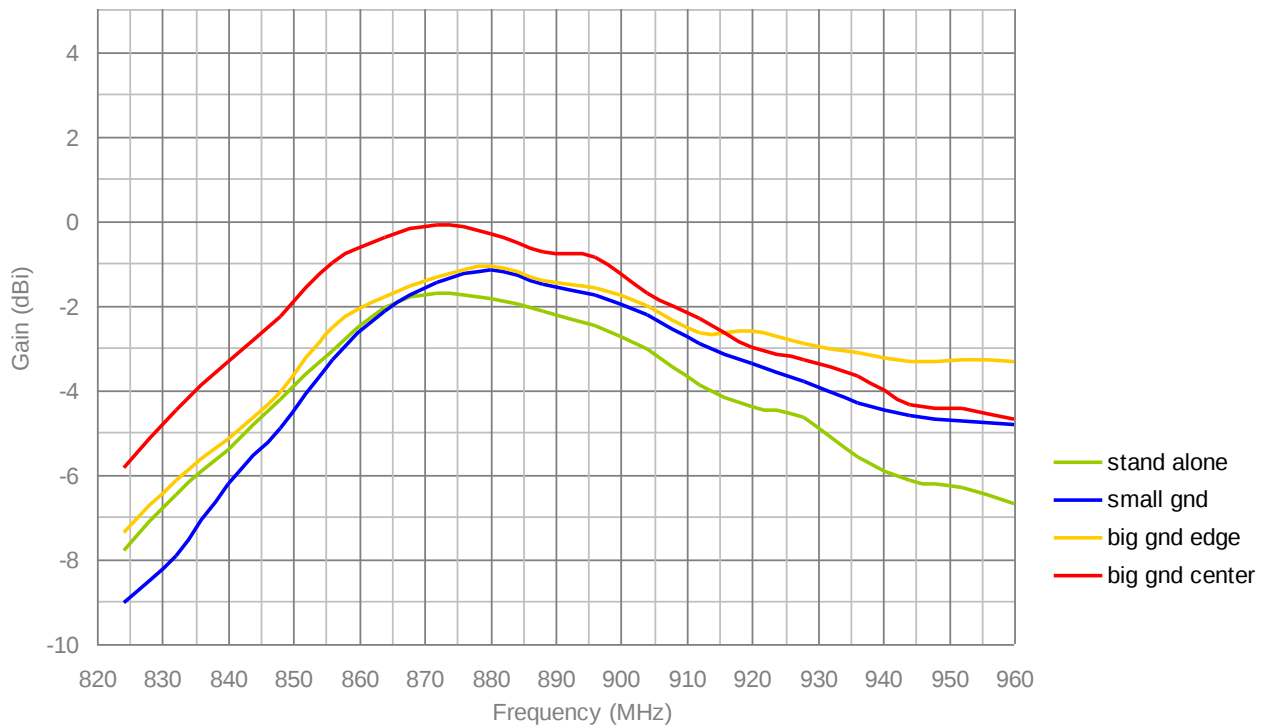


VI. Radiation Property of TI.08 with Different Ground

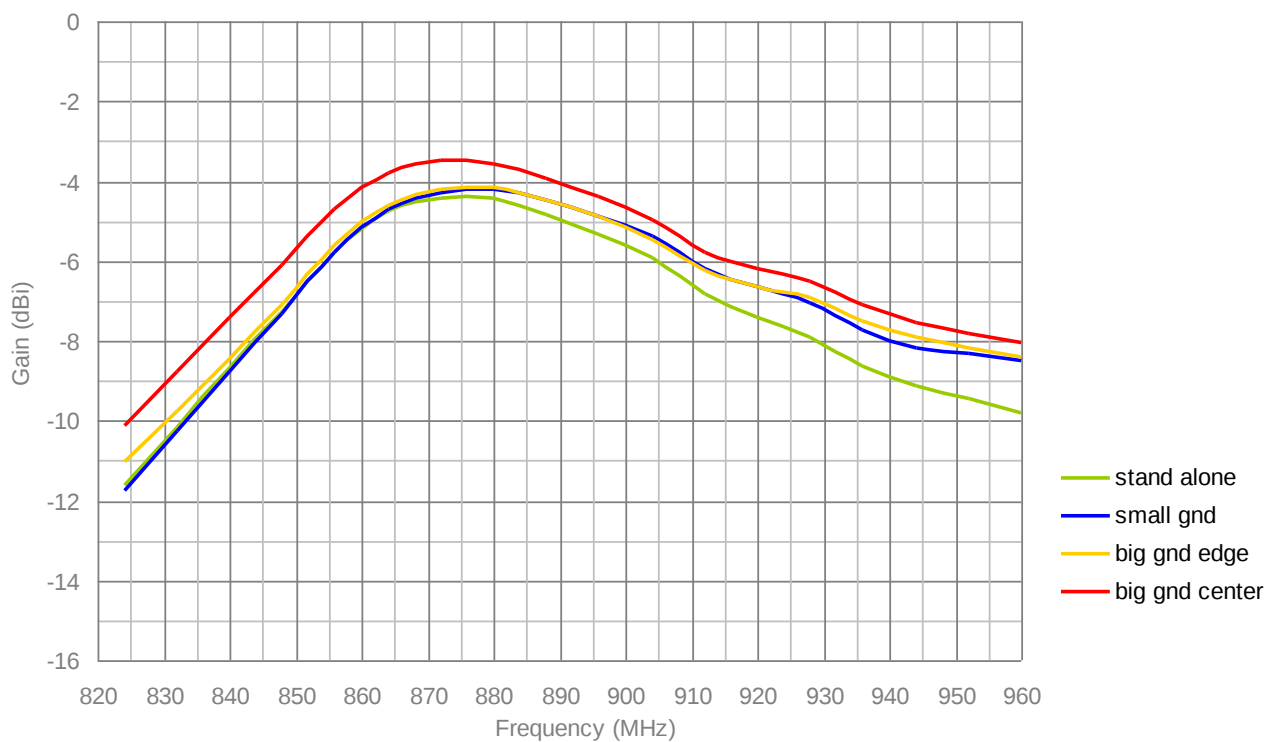
VI.1. Radiation Efficiency



VI.2. Antenna Peak Gain

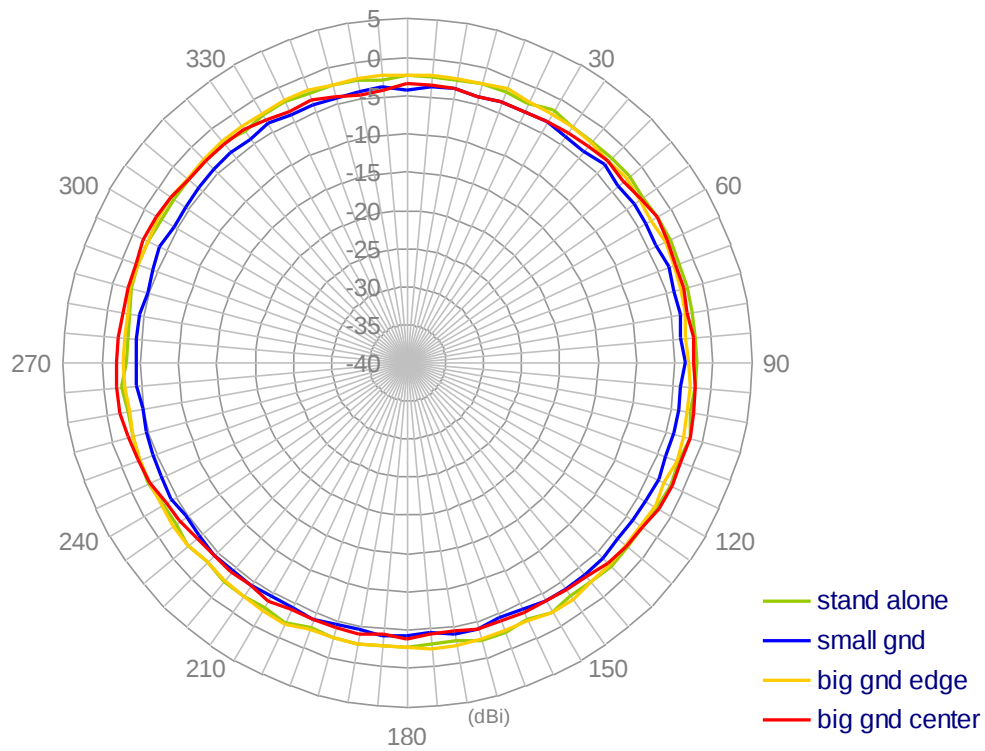


VI.3. Average Gain

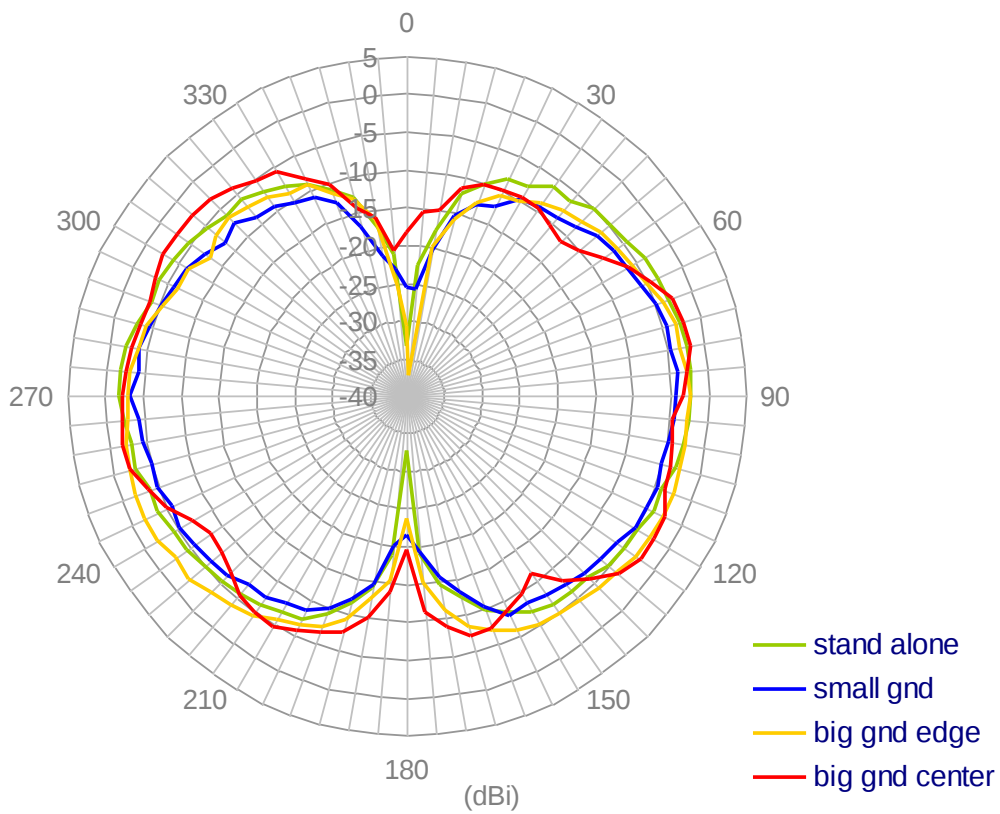


VI.4. Radiation Pattern

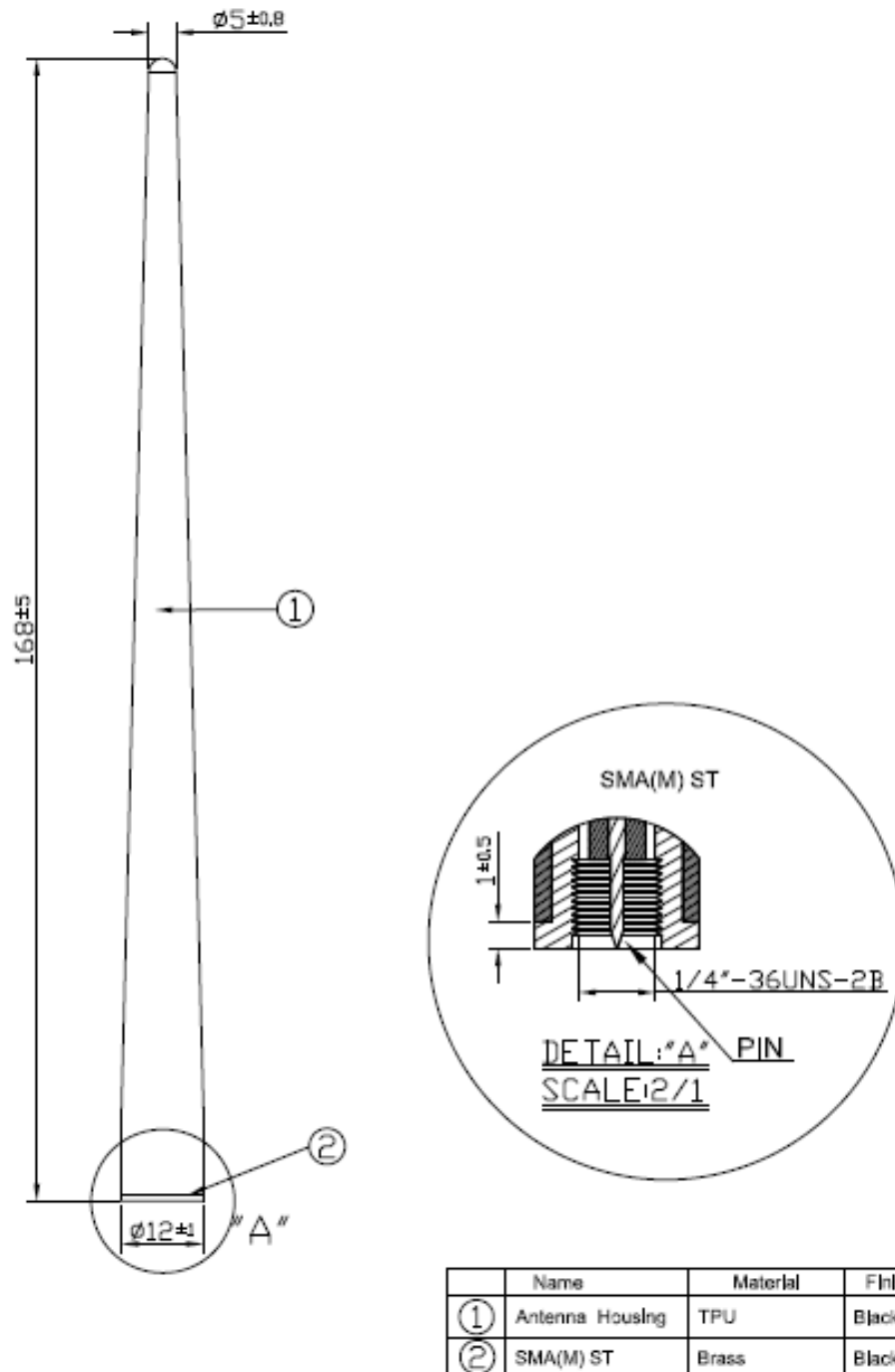
H-Plane Radiation



E-Plane Radiation



VII. Mechanical Drawing



Unit : mm