

The antenna satisfies the requirements of 15.203. The antenna is integral to the unit. It is located entirely inside the chassis. The chassis is not user accessible.

RADIATION PATTERN OF THE CERAMIC PATCH ANTENNA

235-0102

- I. STANDALONE ANTENNA
- II. ANTENNA ATTACHED TO A PCB

RADIALL INCORPORATED

This report shows the radiation properties of the ceramic patch antenna developed for Schweitzer Engineering. The measurements have been performed at 2.45 GHz in an anechoic chamber. 2 configurations have been tested :

- I. Antenna alone
- II. Antenna on a PCB (as described in the picture below)

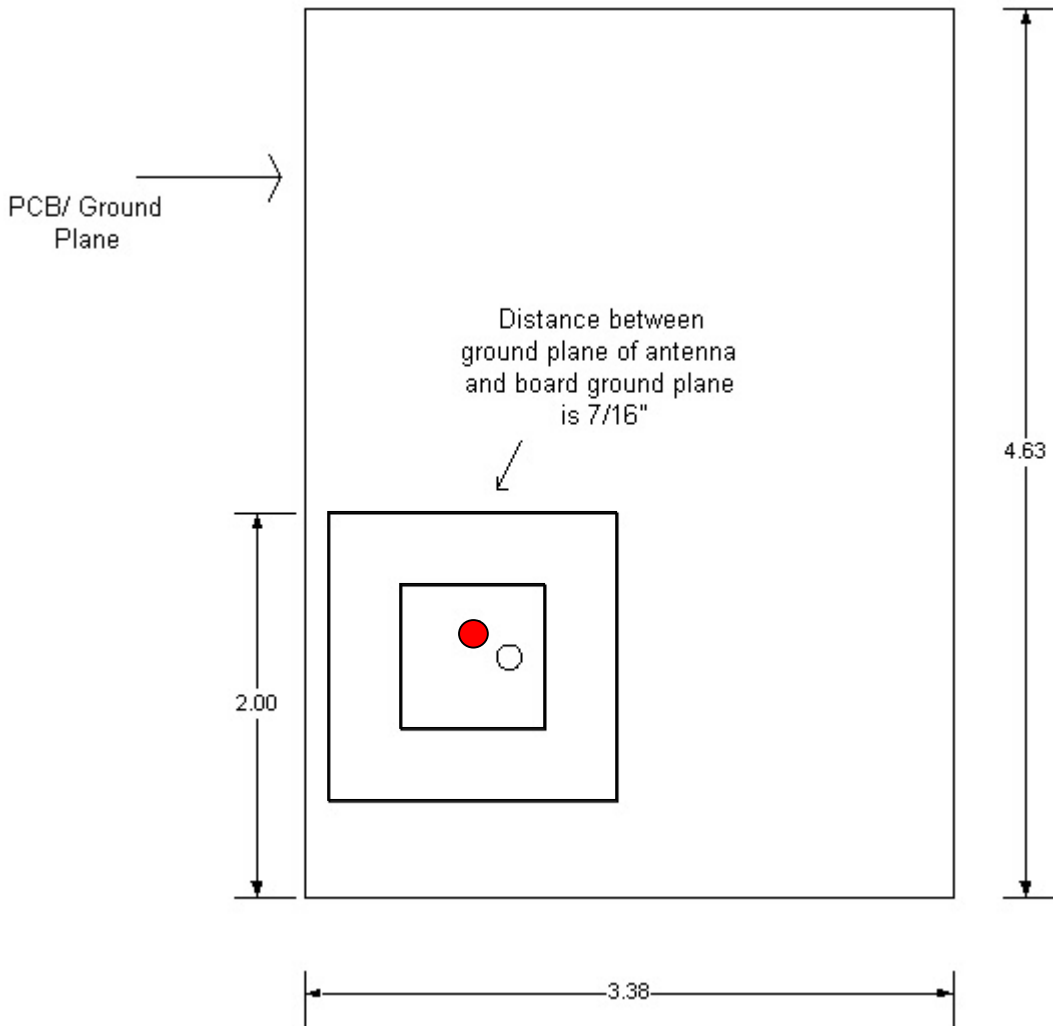
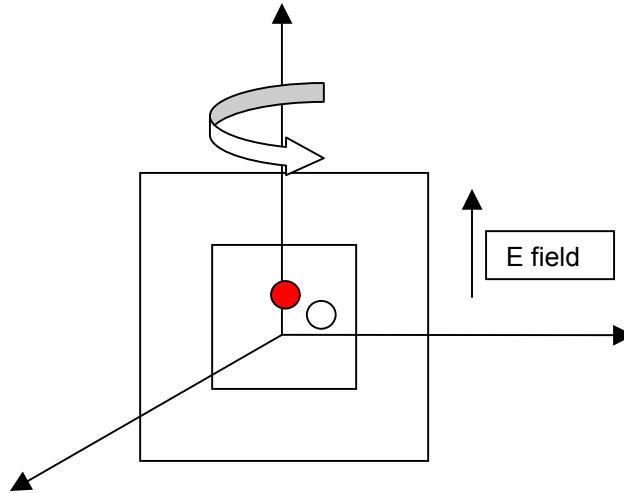


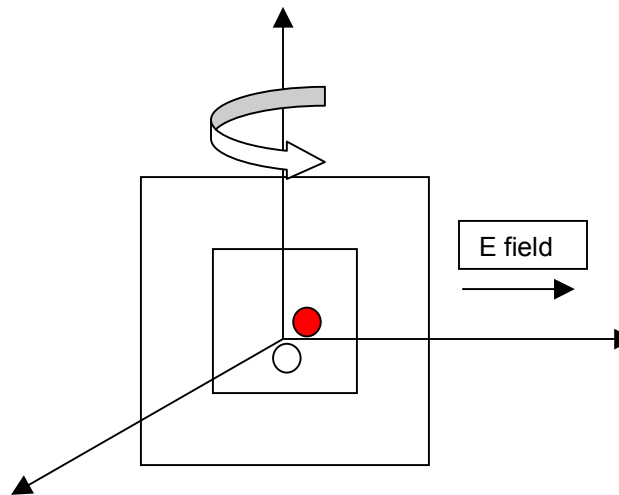
Fig I. Patch Antenna location on the PCB

Only the upper part of the PCB is metalized. The feeding probe is represented in red in the picture.

The picture below defines the cut-planes realized and the associated axis.



II. Azimuth Cut Plane (H-Plane)



III Vertical Cut Plane (E-Plane)

Config I. Standalone Antenna

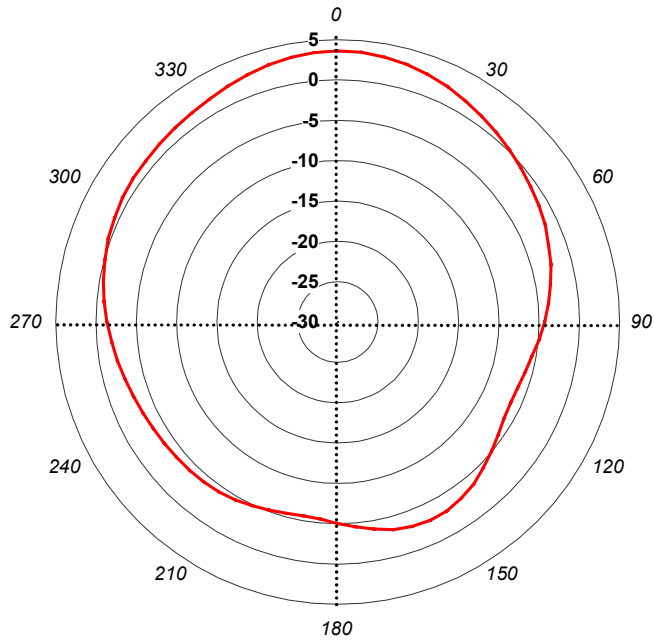


Fig IV : Azimuth Plane for the Standalone Antenna

The -3 dB Beamwidth is about 105 deg and the peak gain is 3.6 dBi.

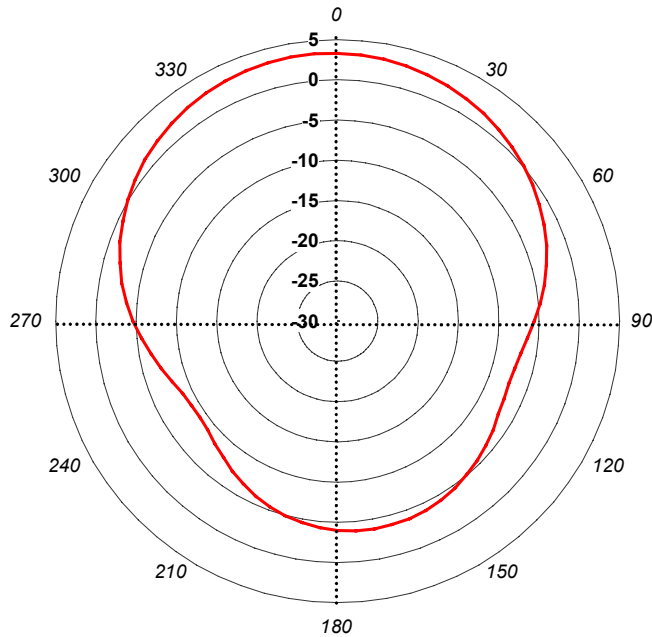


Fig V : Vertical Plane for the Standalone Antenna

The -3 dB Beamwidth in this plane is about 102 deg.

Config II. Antenna on The PCB

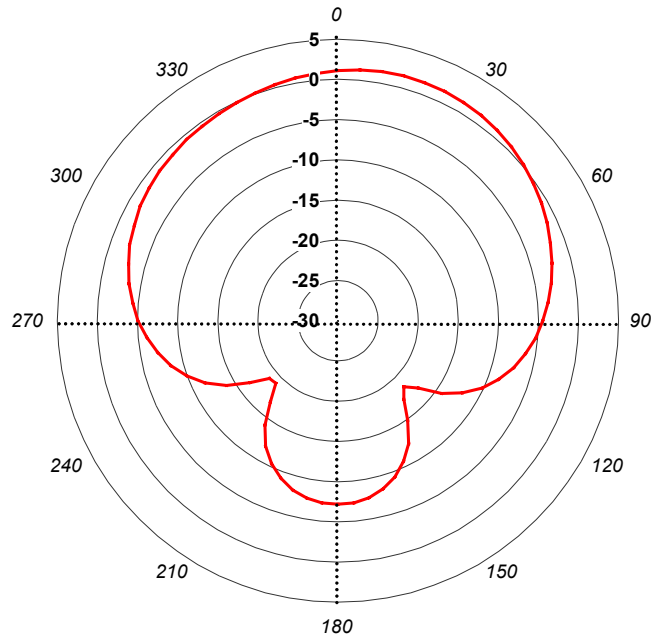


Fig VI : Azimuth Plane for the Antenna on the PCB

The -3 dB Beamwidth in this plane is about 130 deg and the peak gain 1.5 dBi.

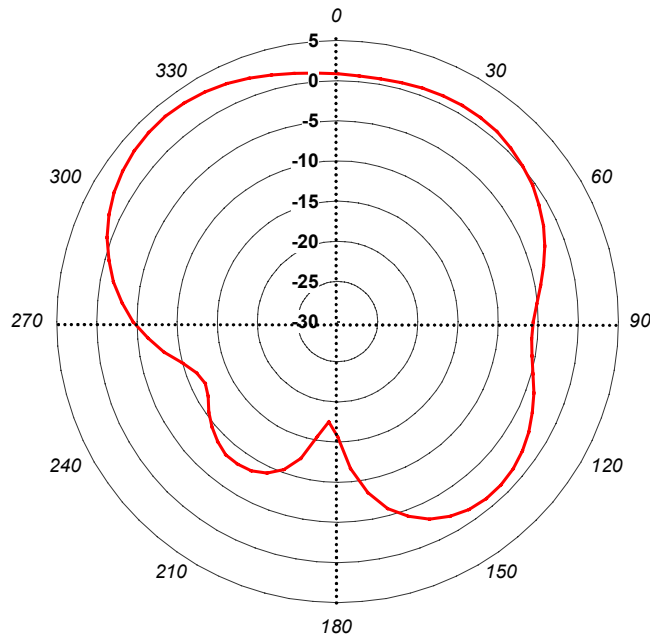


Fig VI : Vertical Plane for the Antenna on the PCB

The -3 dB Beamwidth in this plane is about 117 deg and the peak gain 3.3 dBi. The presence of the ground plane is visible in the Vertical plane. It squints the peak gain and the beamwidth is broader.