

## INTRODUCTION

Dielectric Resonator Antenna (DRA) is fabricated from low-loss and high relative dielectric constant material of various shapes whose resonant frequencies are functions of the size, shape and permittivity of the material. DRA can be in a few geometries including cylindrical, rectangular, spherical, half-split cylindrical, disk, and hemispherical shaped. The DRA has some interesting characteristics, like the small size, ease of fabrication; high radiation efficiency, increased bandwidth and low production cost, and DRA are very promising for application in wireless communications.

## OBJECTIVES

The single DRA element is operating at 2.4 GHz frequencies covering the frequency bands used for IEEE 802.11b/g Wireless LANs and the shape of DR is the disk.

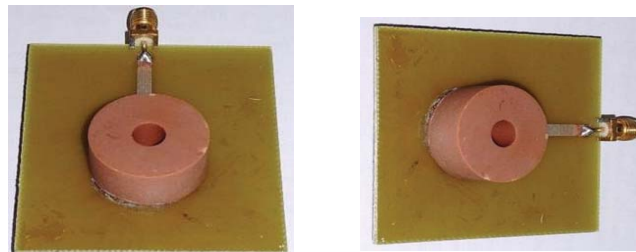


Fig 1: The disk shape of Dielectric Resonator antenna

## ADVANTAGES

- ~ Smaller circuit sizes and reduction of overall circuit costs comparable performances and DRA can be designed in any 3D shape.
- ~ The DRA is made of high dielectric constant with no conducting parts and has very small dissipation loss. Therefore, it can handle high power.
- ~ The DRA size decreases as the dielectric constant increases.
- ~ Dielectric resonator antenna is not limited to linear polarization. The DRA can be designed for single, dual, or circular polarization.

## Researchers Info

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## NOVELTY

DRA is a simple antenna with uncomplicated design and very good performance.