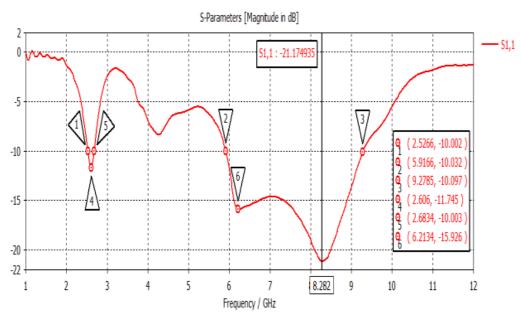
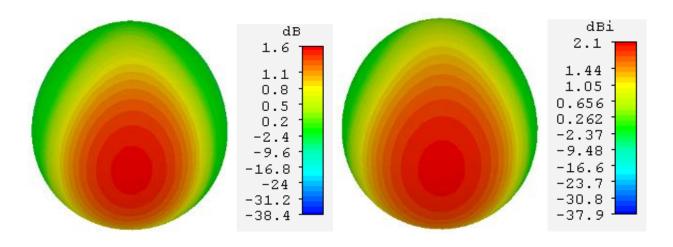
## FR4( Lossy ) Substrate

1. s-parameter graph is shown, in which we can observe dual band pattern



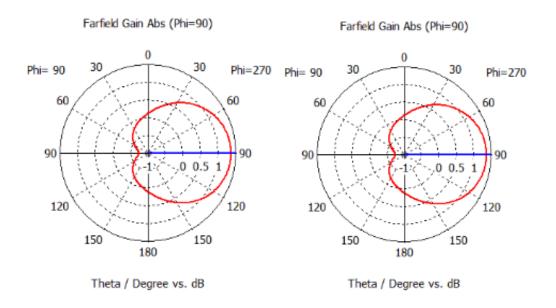
S-parameter results of FR4 substrate.

#### 2. A 3D view of simulated gain at 2.606 GHz is portrayed in the Fig



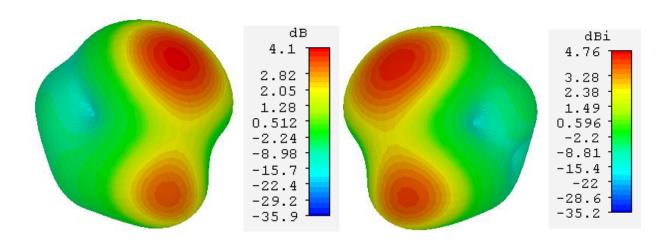
Gain & Directivity at 2.606 GHz.

# 3. The radiation pattern at $2.606~\mathrm{GHz}$ resonant frequency which is quite ameliorated than that of RO4003C substrate results



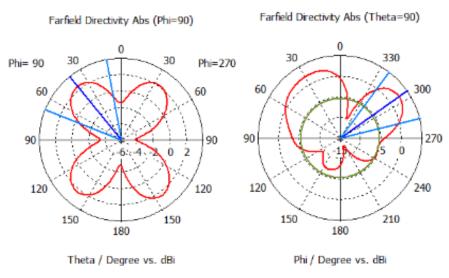
Radiation pattern at constant phi and theta.

### 4. gain and directivity measurements at 6.21 GHz resonance frequency is displayed



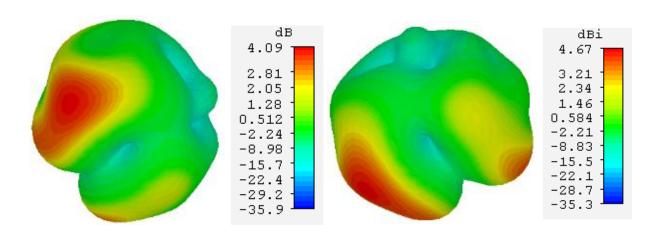
Gain & Directivity at 6.21 GHz.

5. Radiation pattern is also responsible for the drastic change in gain and directivity measurement which is depicted in Fig



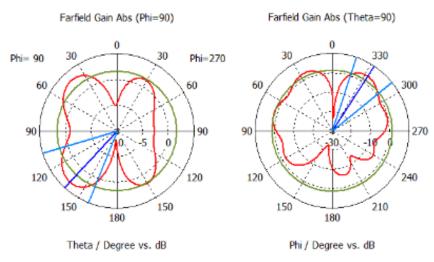
Radiation pattern at 6.21 GHz.

6. Moving forward to another resonant frequency of 8.28 GHz, gain of 4.09 dB and directivity of 4.67 dBi is obtained as shown in the Fig



Gain & Directivity at 8.28 GHz.

## 7. Radiation pattern at 8.28 GHz frequency is shown in the Fig



Radiation pattern at constant phi & theta.