

## **Vivaldi-LA Antenna Simulation/Measurement Report**

St.Gallen, April 23rd 2016

# Specification

---

- Type: Vivaldi-LA Antenna
- -3dB Bandwidth: 7.4 – 9.0GHz
- Gain: 8dBi
- Polarization: linear
- Impedance: 50 Ohms
- Size: 50x50x2mm max.
- Connector: SMA

# Challenges

---

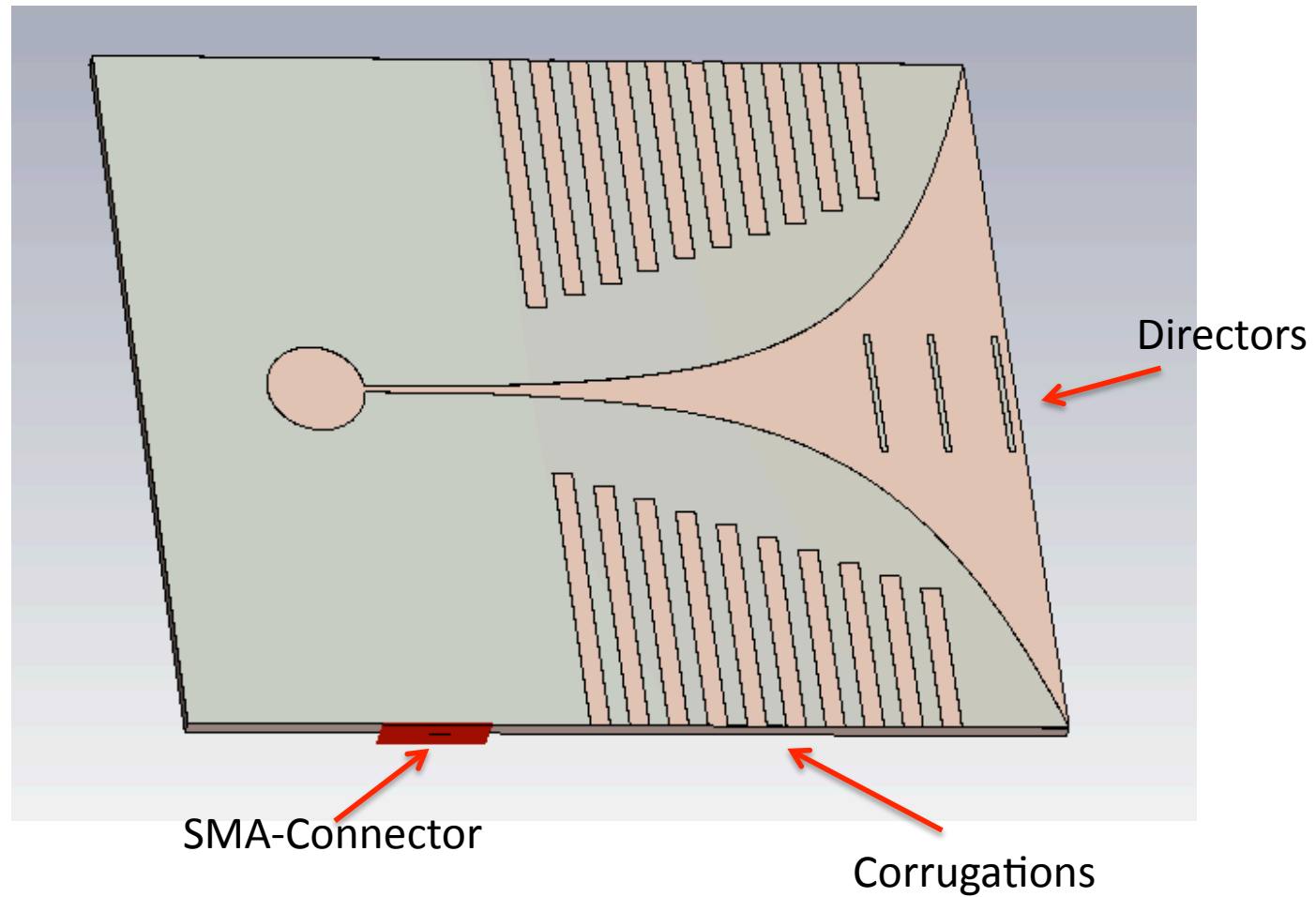
Gain of a typical Vivaldi-Antenna is around +6dBi.  
Additional Gain can be achieved by external lenses or by  
adding directive Elements to the antenna.

In our antenna we use:

- Directors in front of the antenna (similar to a Yagi-Antenna)
- Corrugations to the side (similar to a Horn-Antenna)

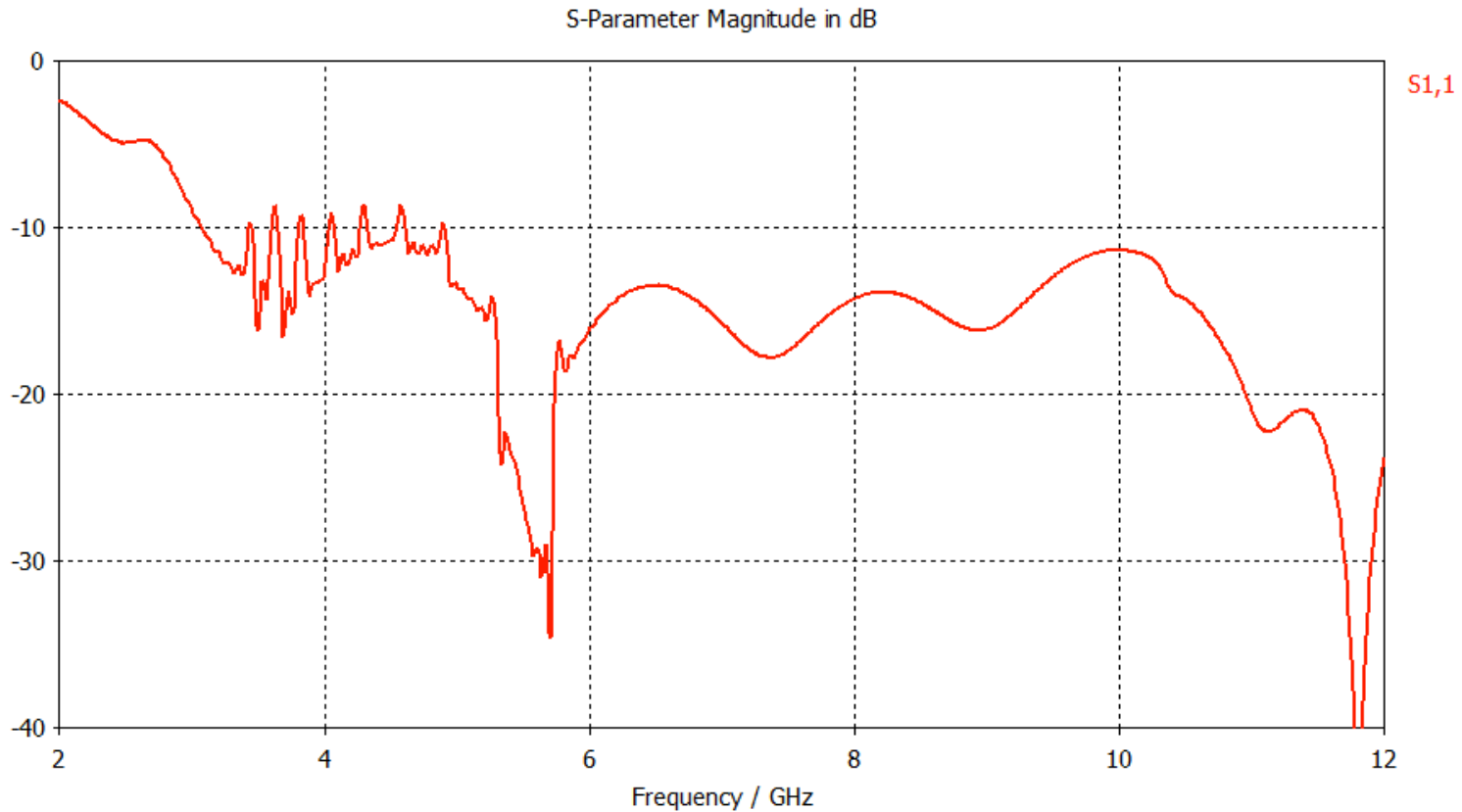
# Mechanical View

---



# Simulated S11

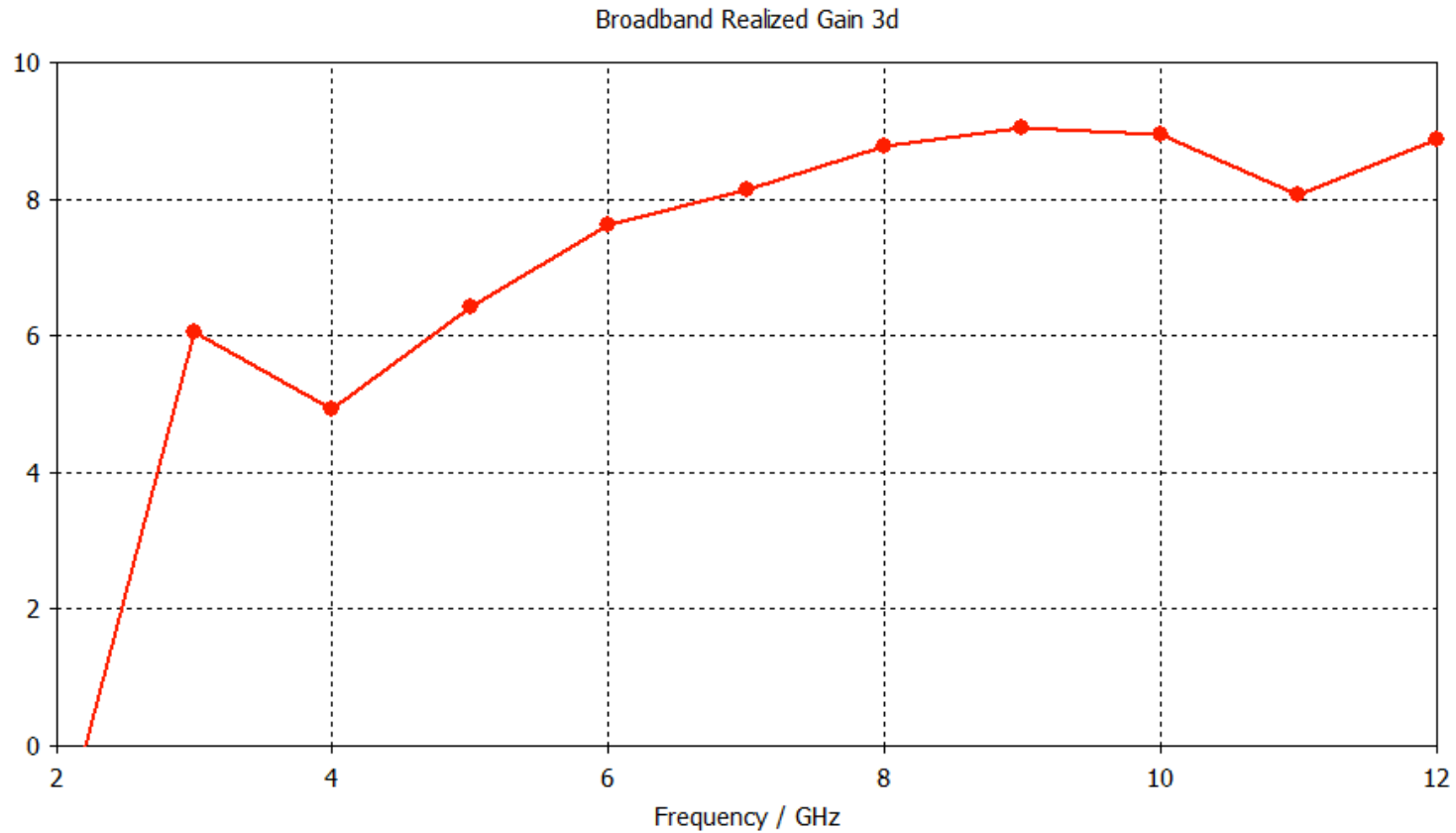
---



Antenna is matched ( $S_{11} < -10\text{dB}$ ) for Frequencies  $>5\text{GHz}$   
Antenna is usable up to 12GHz

# Simulated Gain

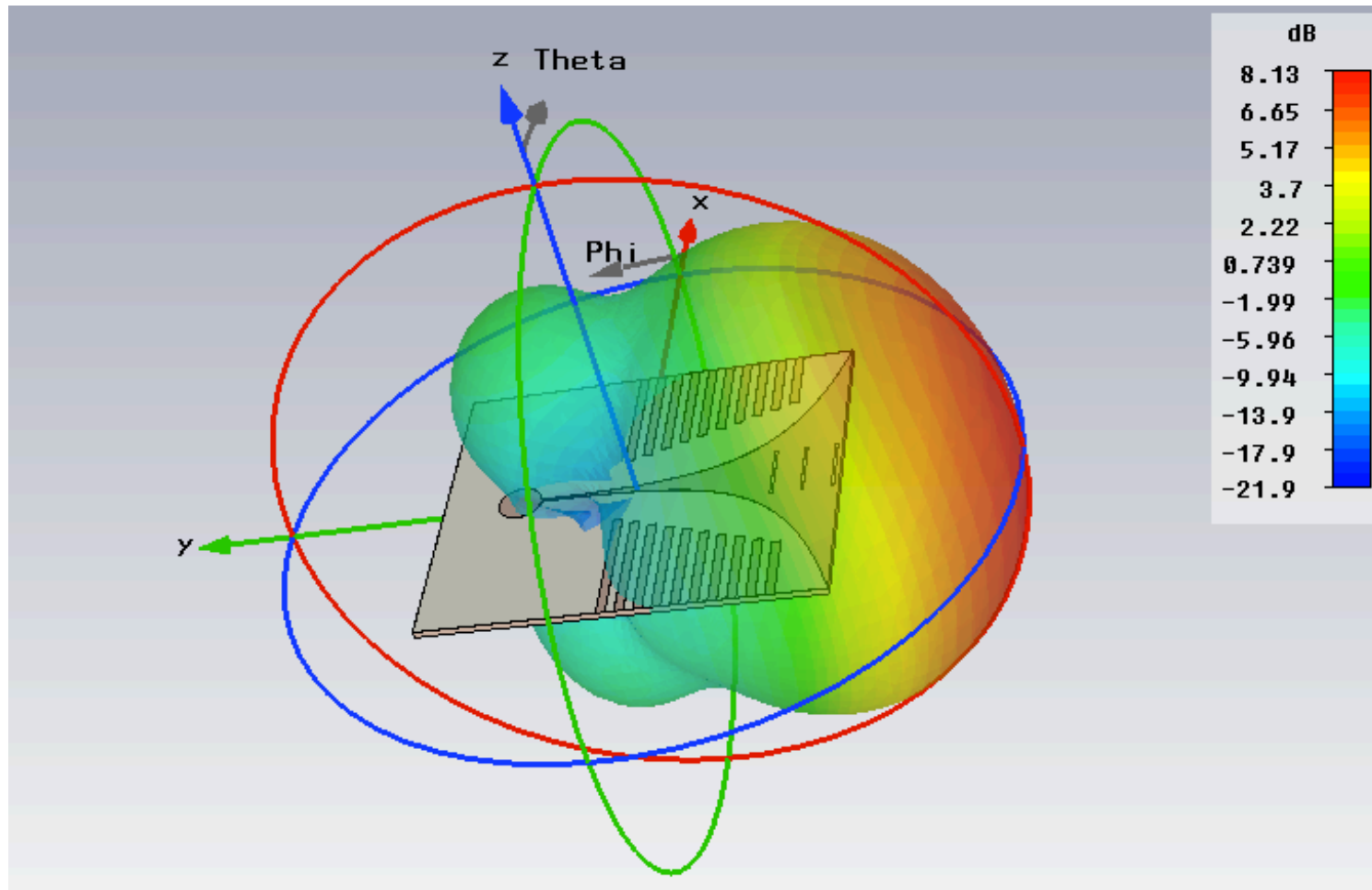
---



For Frequencies above 7GHz we have more than 8dBi realized gain

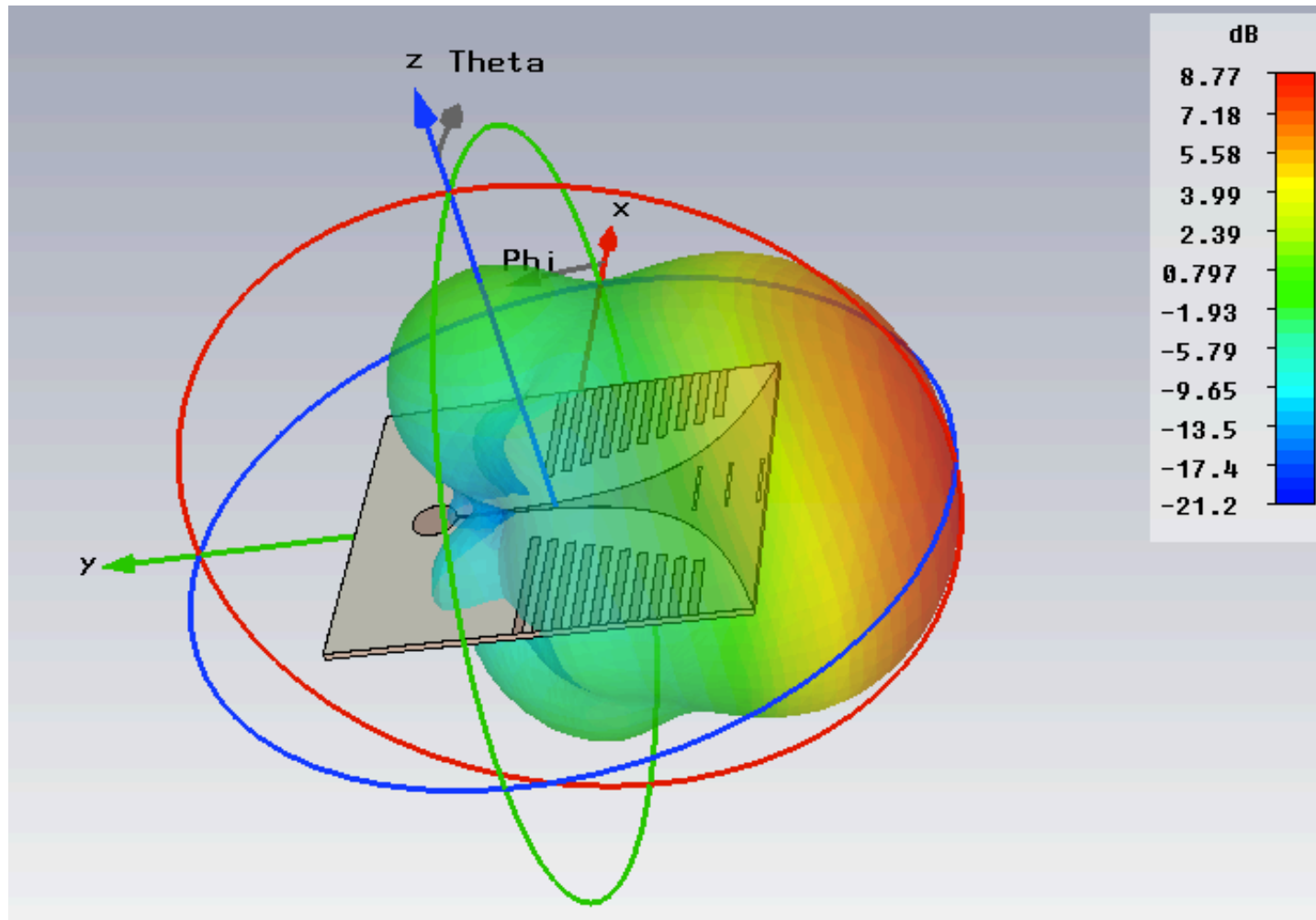
# Radiation Pattern @7.4GHz

---



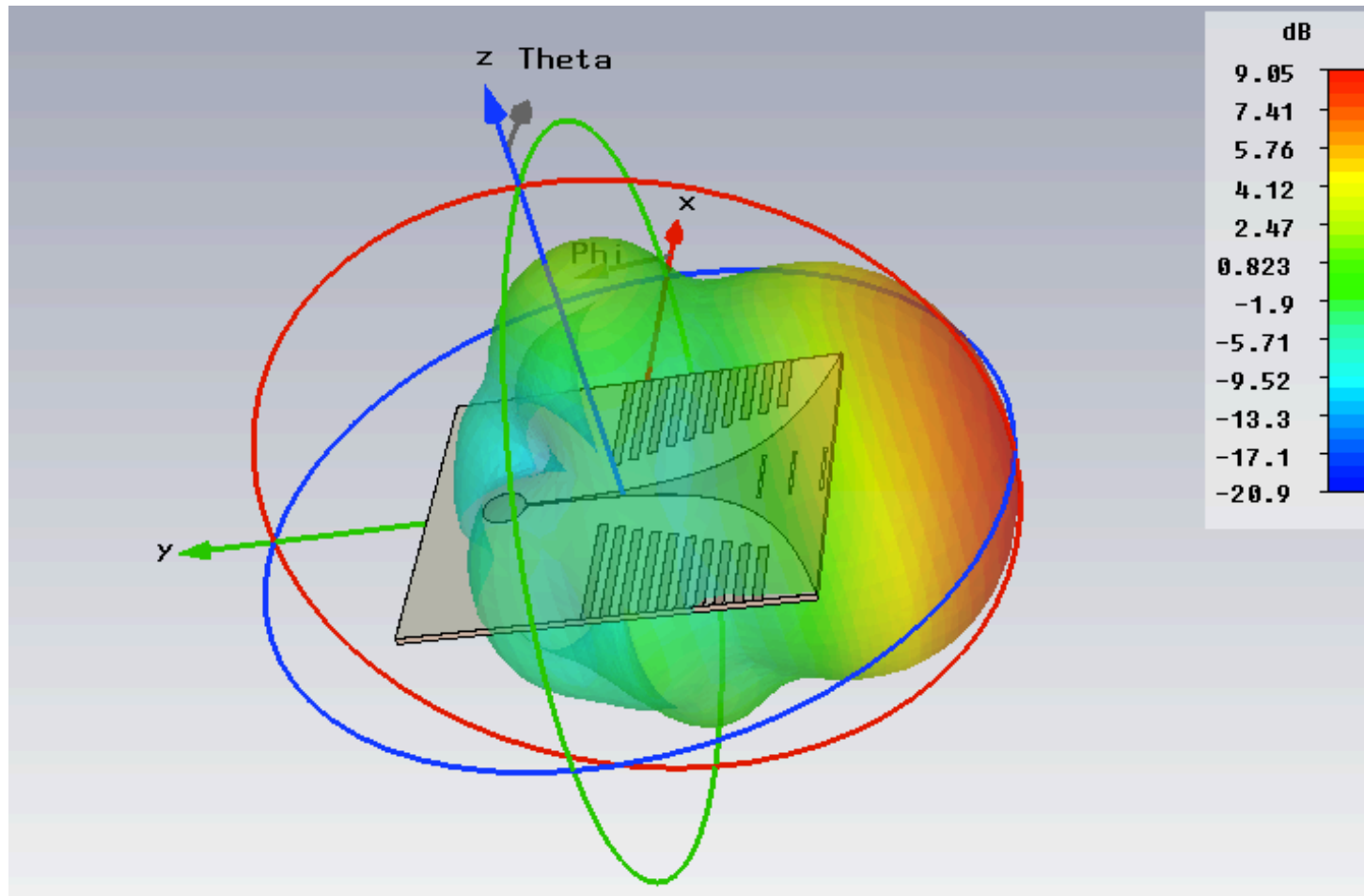
# Radiation Pattern @8.2GHz

---

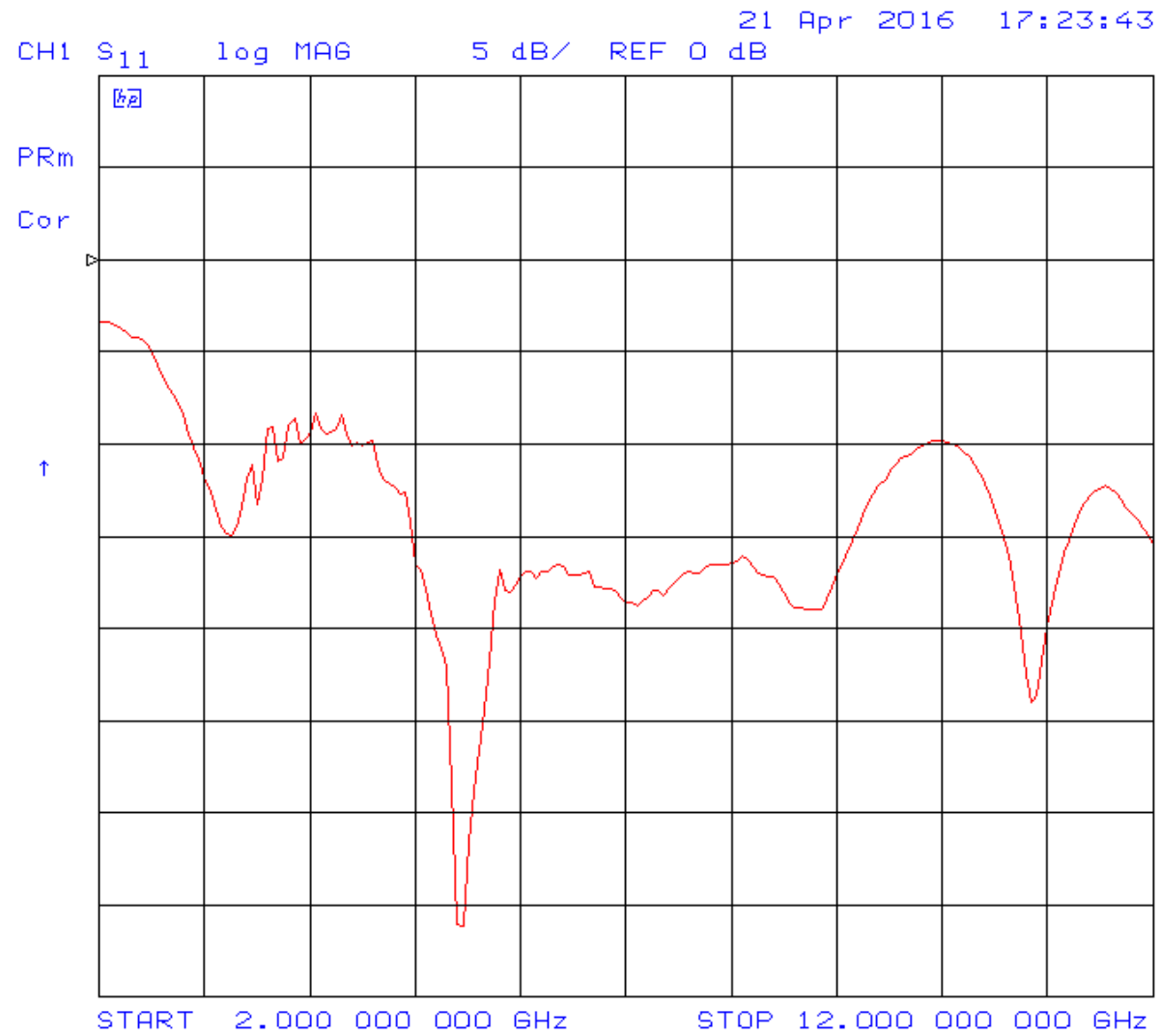




# Radiation Pattern @9.0GHz



# Measurement Results



# Measurement Results

---

