

Simulation/Measurement Report

St.Gallen, April 23rd 2016

Specification

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

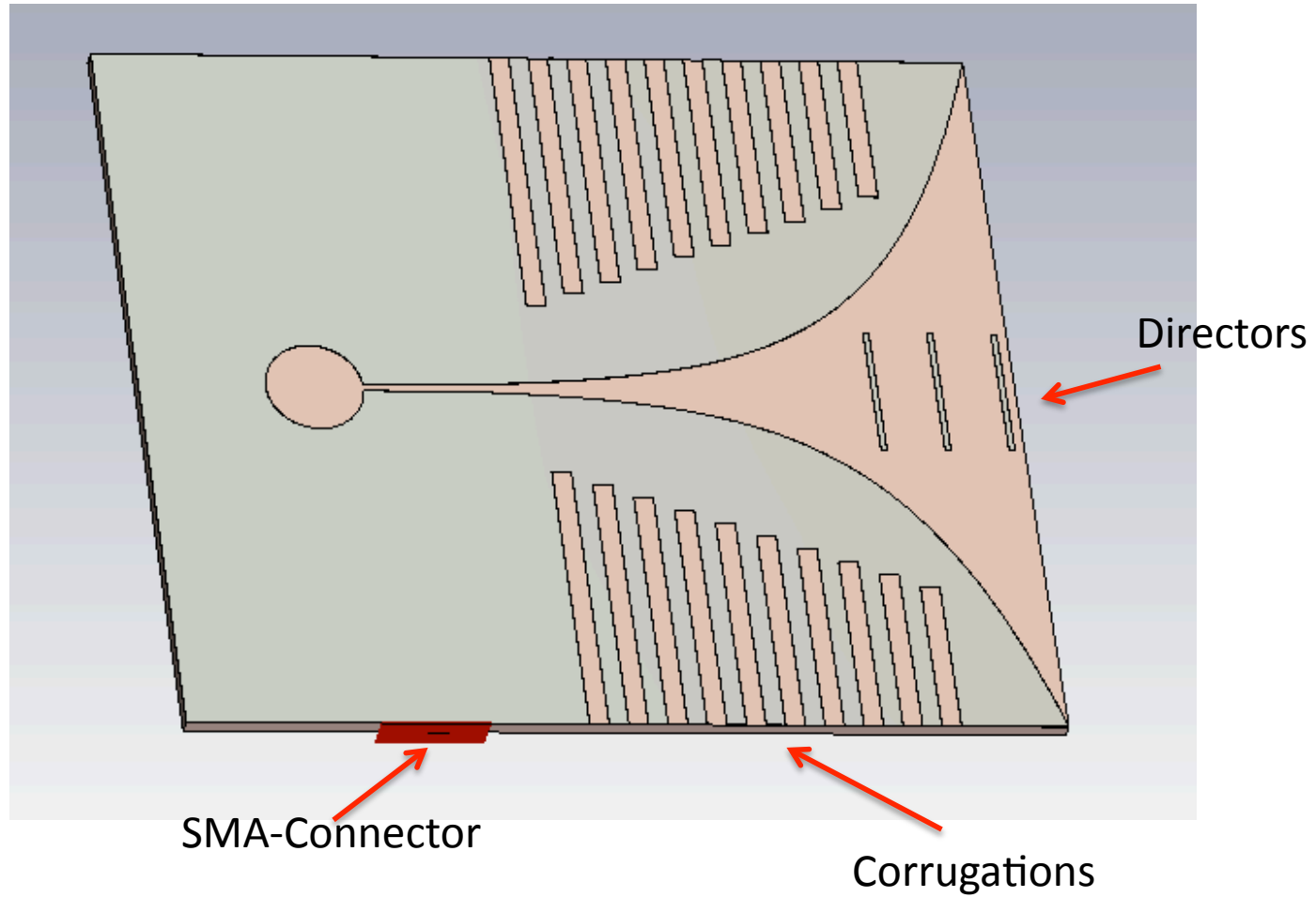
Challenges

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.

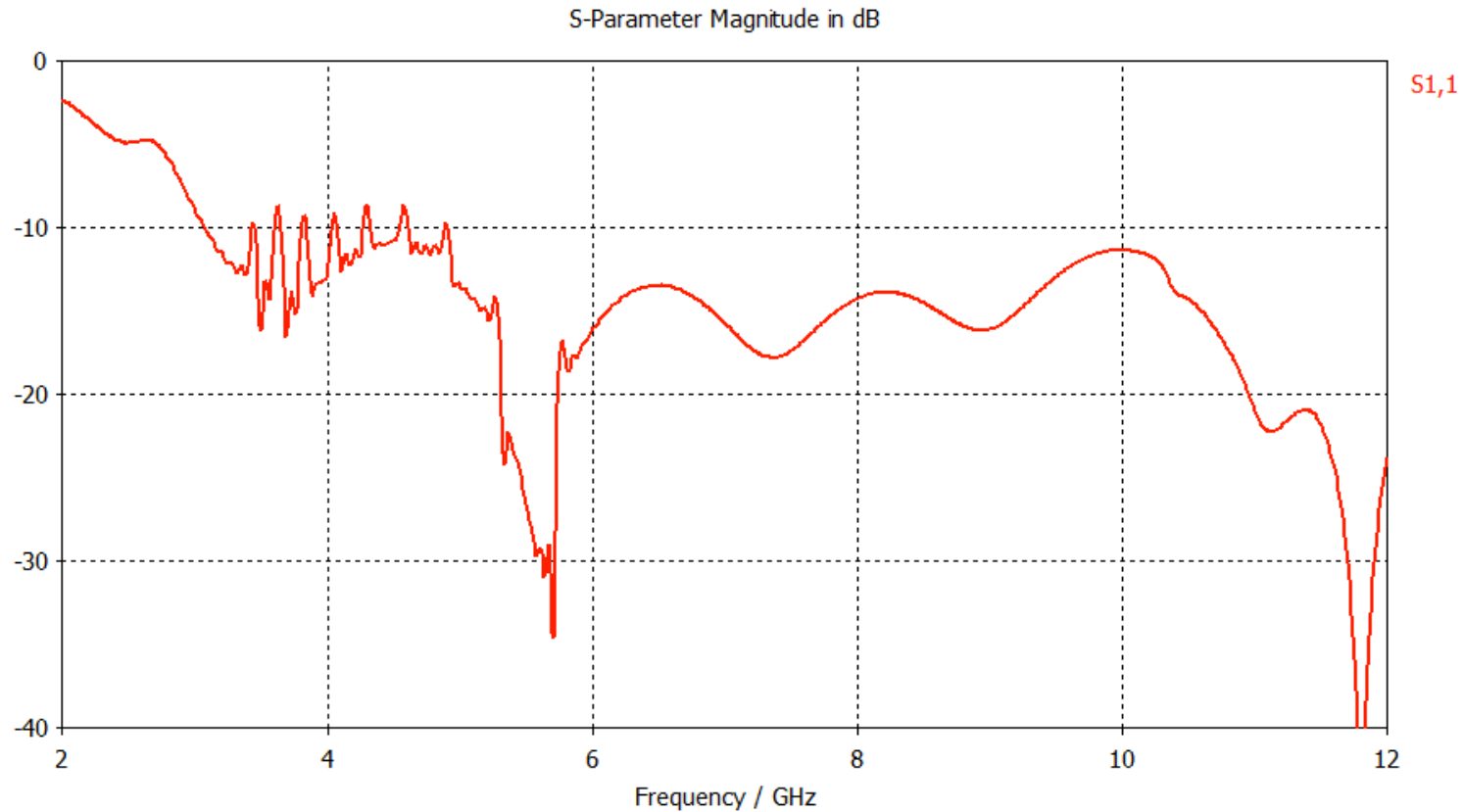
In our antenna we use:

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

Mechanical View

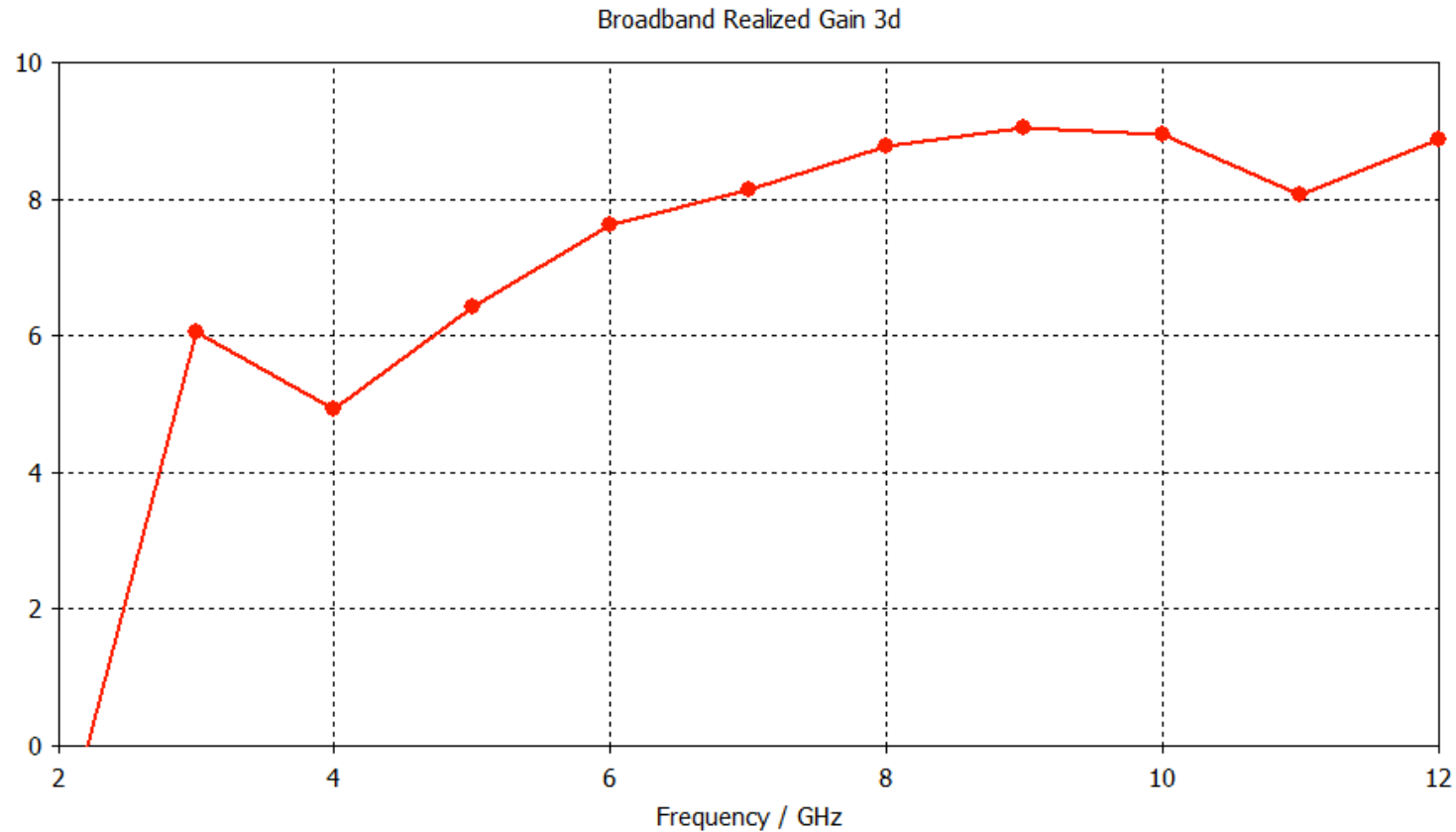


Simulated S11



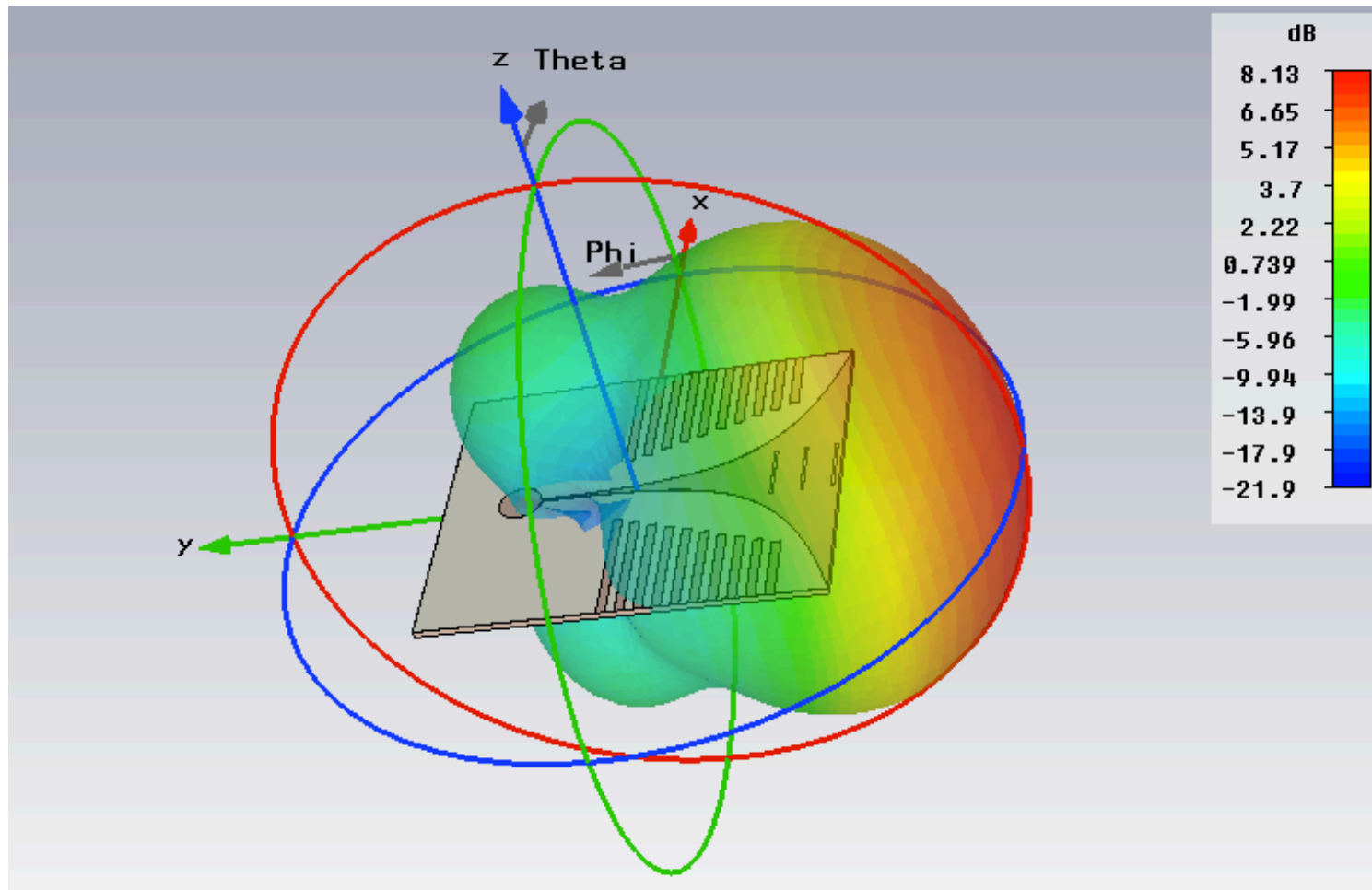
Antenna is matched ($S_{11} < -10\text{dB}$) for Frequencies $> 5\text{GHz}$
Antenna is usable up to 12GHz

Simulated Gain

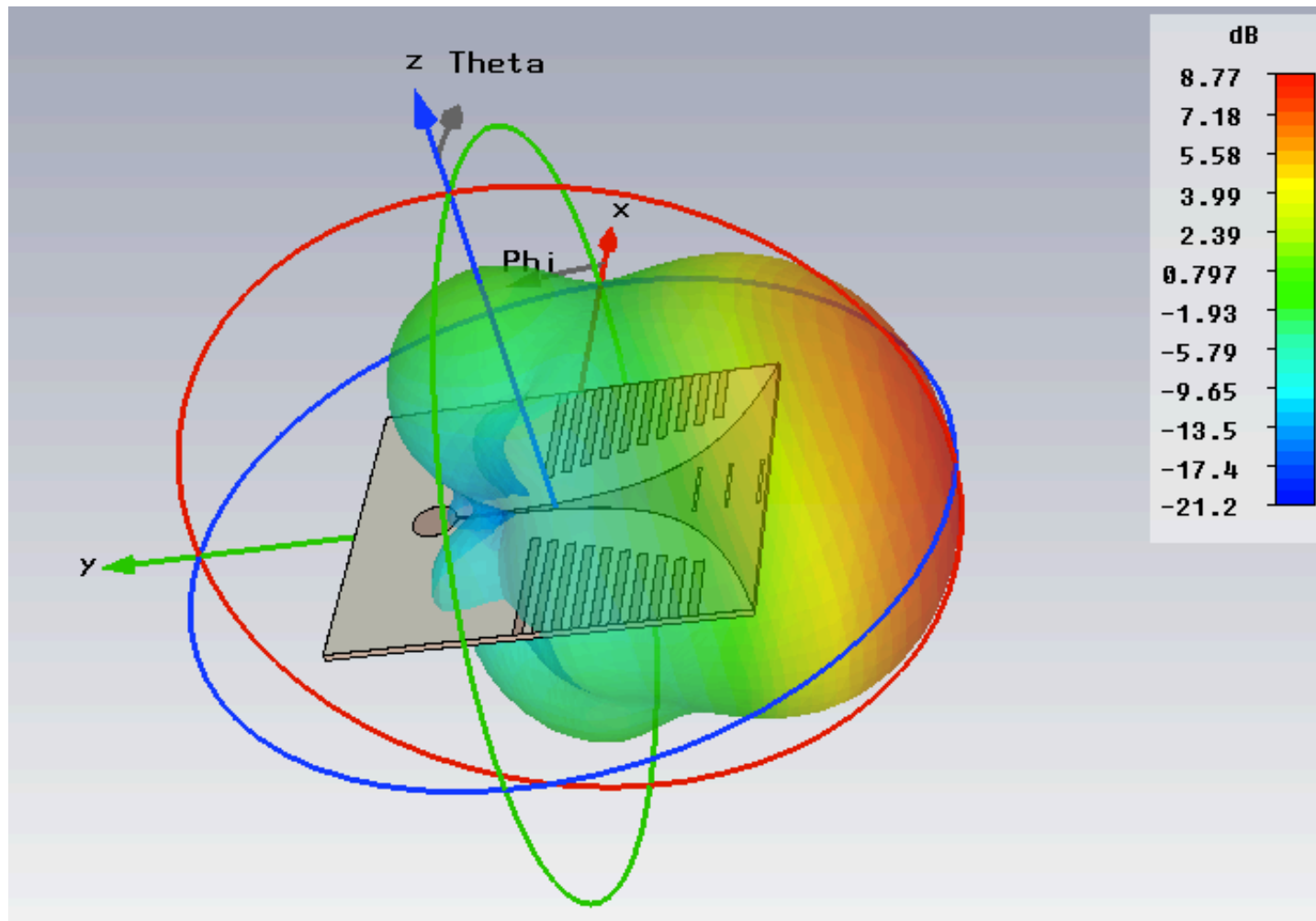


For Frequencies above 7GHz we have more than 8dBi realized gain

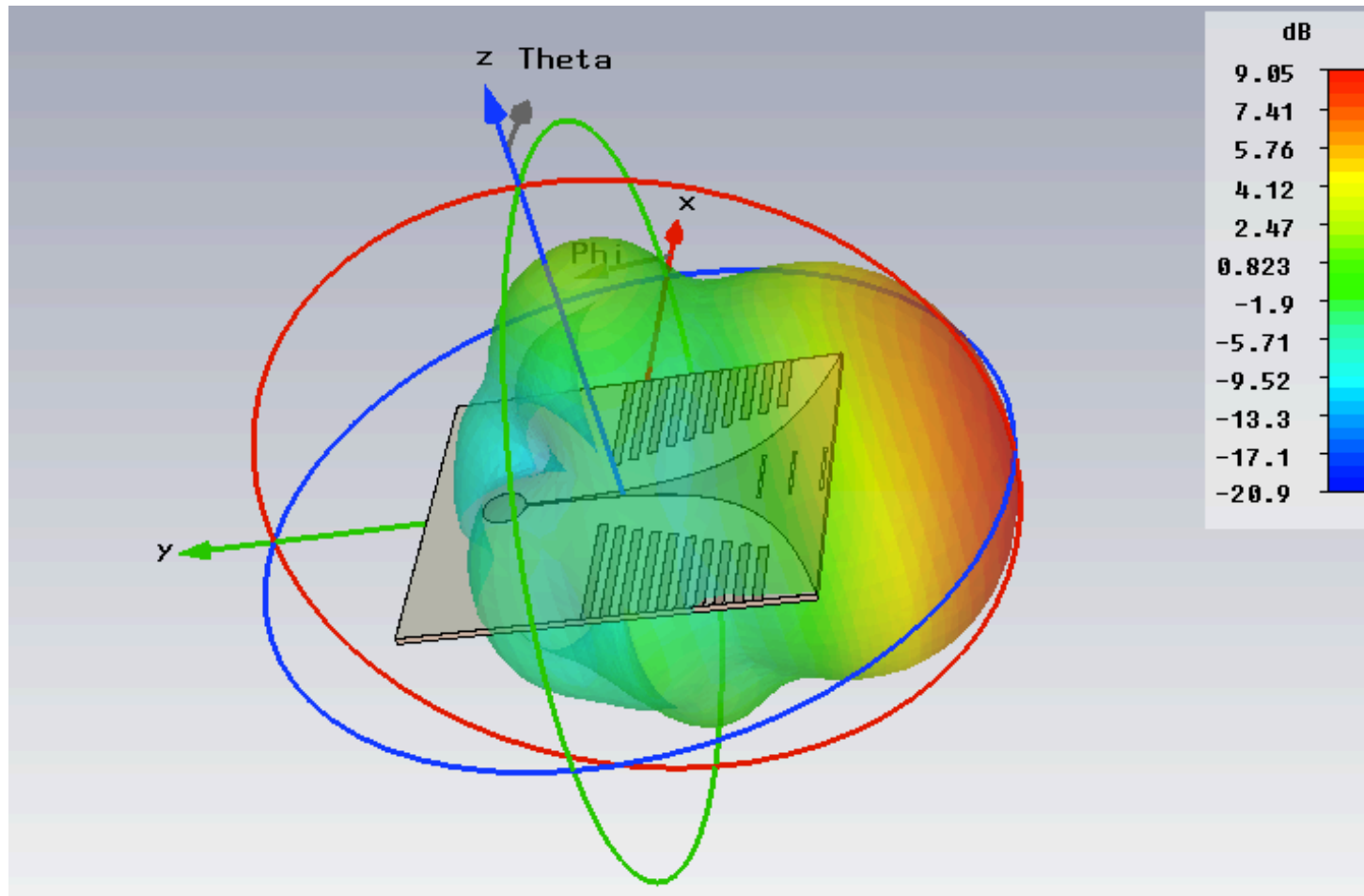
Radiation Pattern @7.4GHz



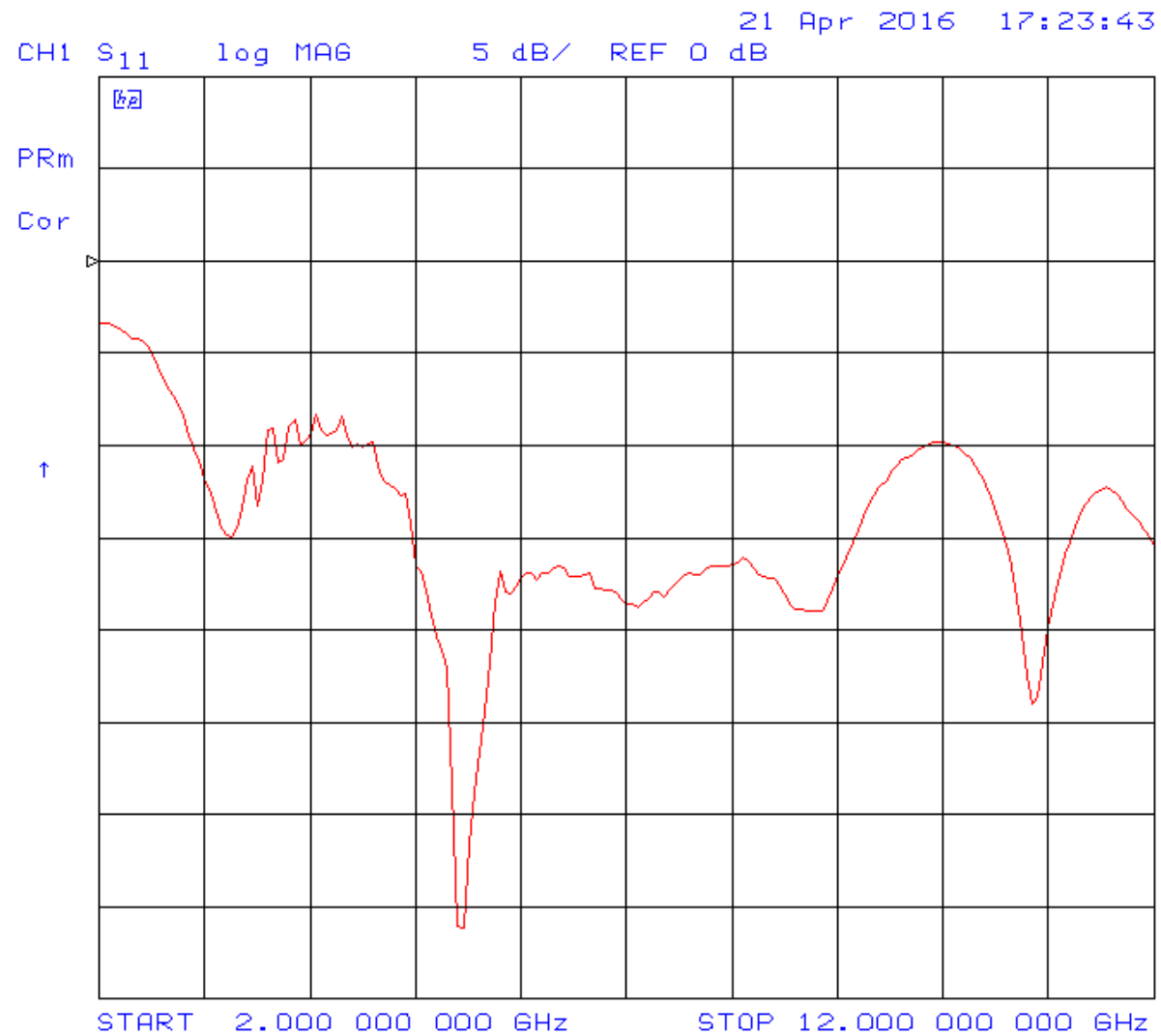
Radiation Pattern @8.2GHz



Radiation Pattern @9.0GHz



Measurement Results



Measurement Results

