

## Technical Data

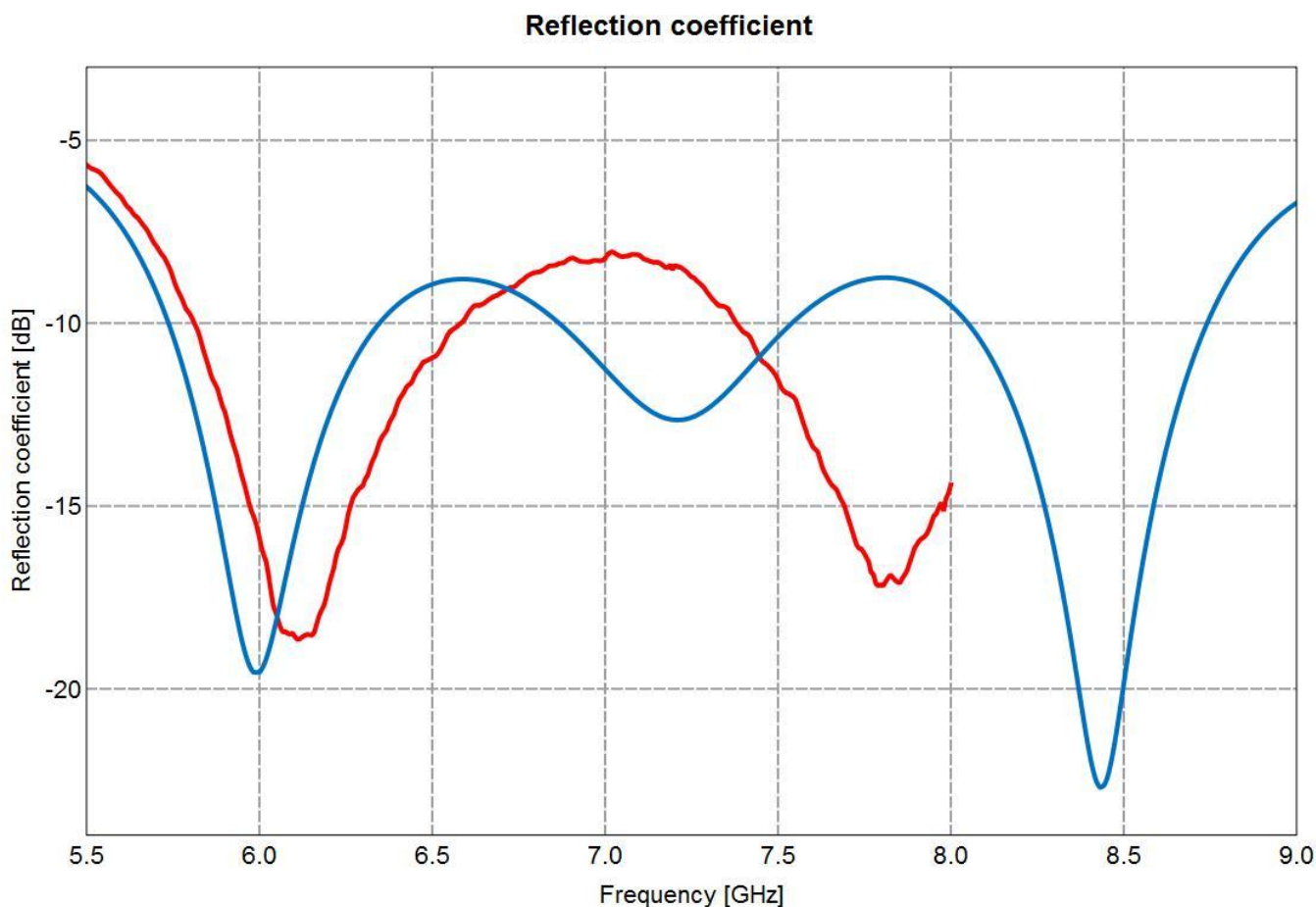
|                         |  |
|-------------------------|--|
| Antenna Type:           | antenna Vivaldi, directional                 |
| Frequency Range:        | 5.8 – 8.7 GHz                                |
| Gain:                   | up to 4,5 dBi<br>(at a frequency of 6.6 GHz) |
| Impedance:              | 50 $\Omega$ , unbalanced                     |
| VSWR:                   | < 2,2:1                                      |
| Size without connector: | 62 × 35 × 1.5 mm                             |
| Connector:              | SMA (FEMALE, MALE)                           |
| Weight:                 | 8 g  |
| Material:               | Rogers                                       |



## Reflection coefficient

The following picture shows Reflection coefficient  $S_{11}$  in dB, results of simulation (blue) and measurement (red).

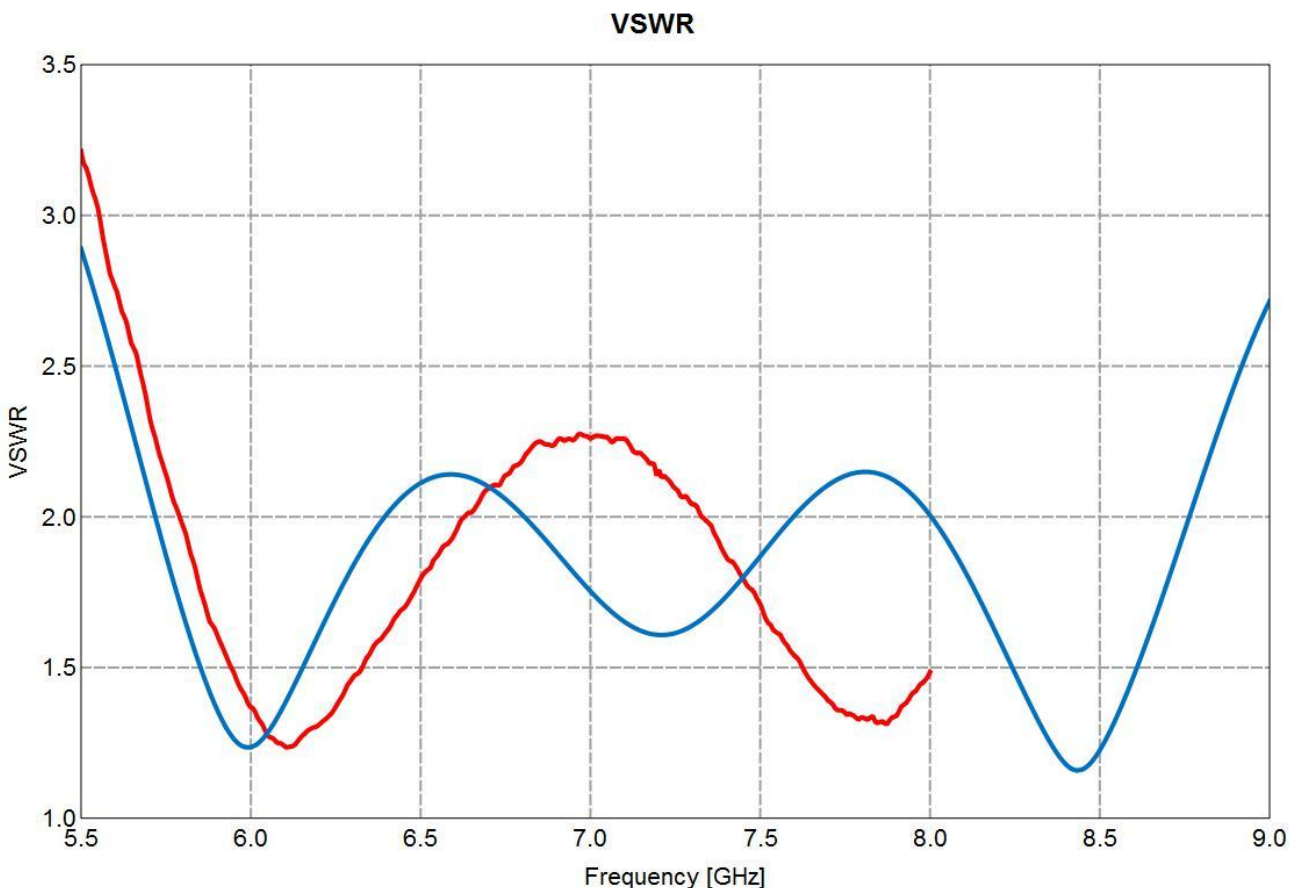
The measurement range is limited to the frequency of 8 GHz.



## VSWR

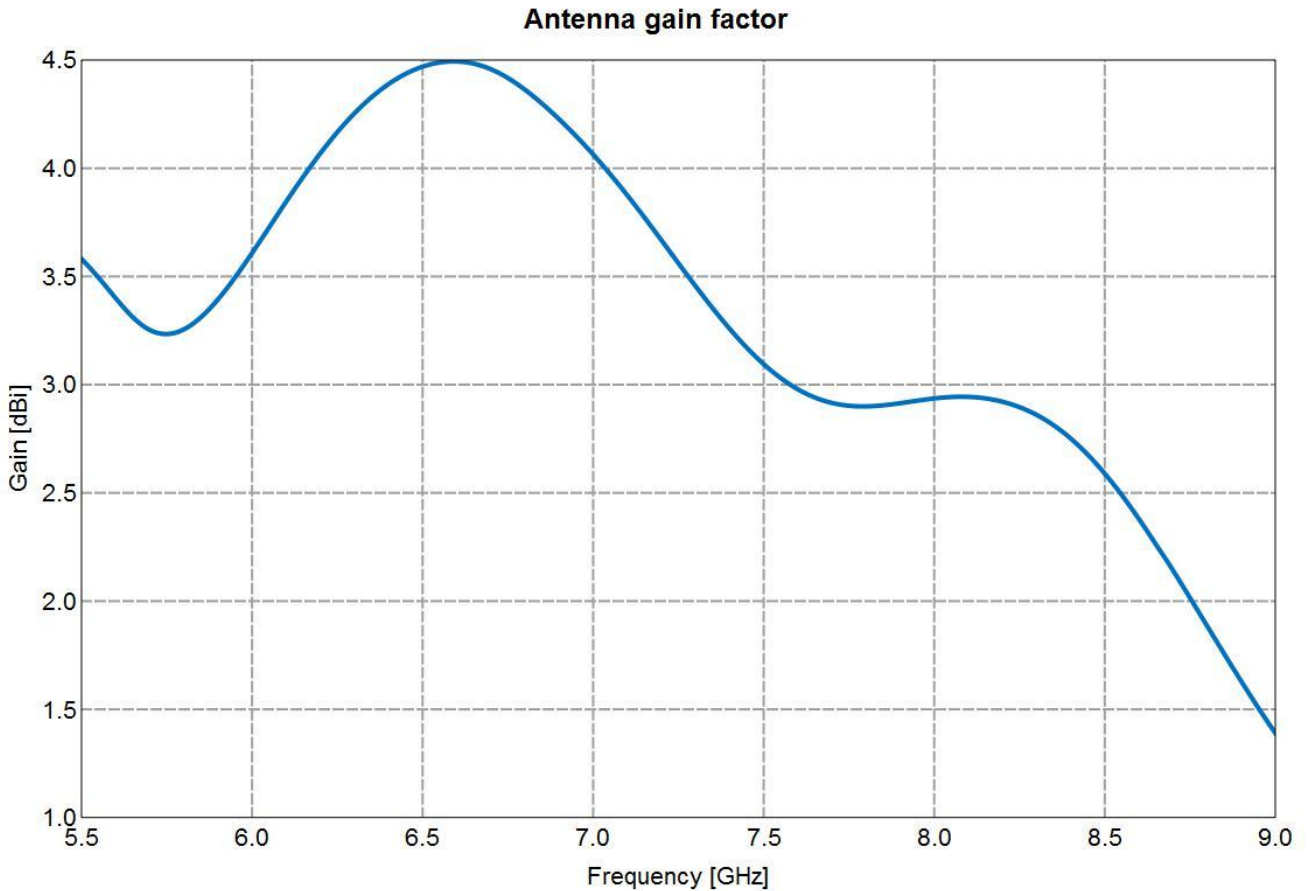
The following picture shows VSWR, results of simulation (blue) and measurement (red).

The measurement range is limited to the frequency of 8 GHz.



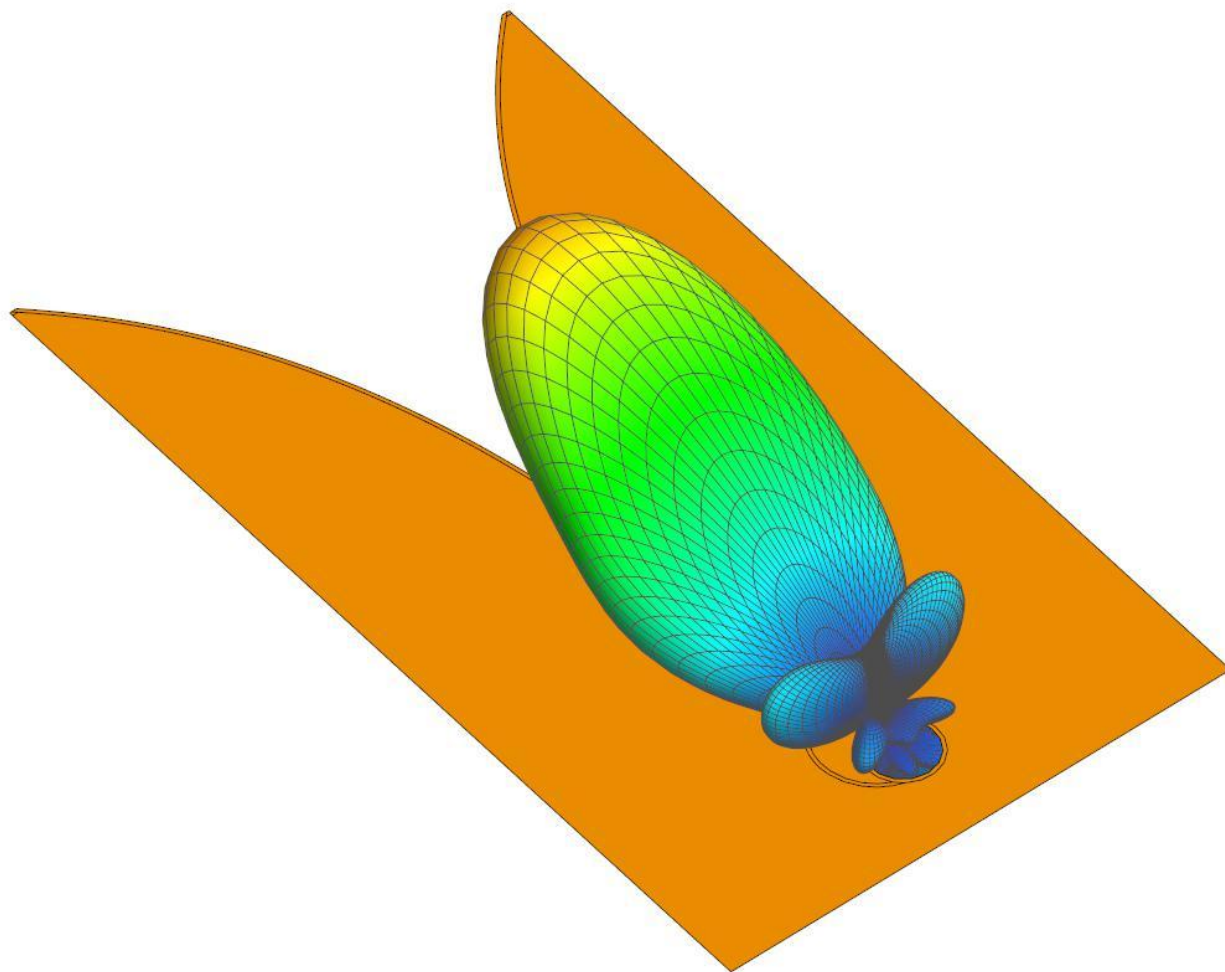
## Gain

The following picture shows Gain factor.



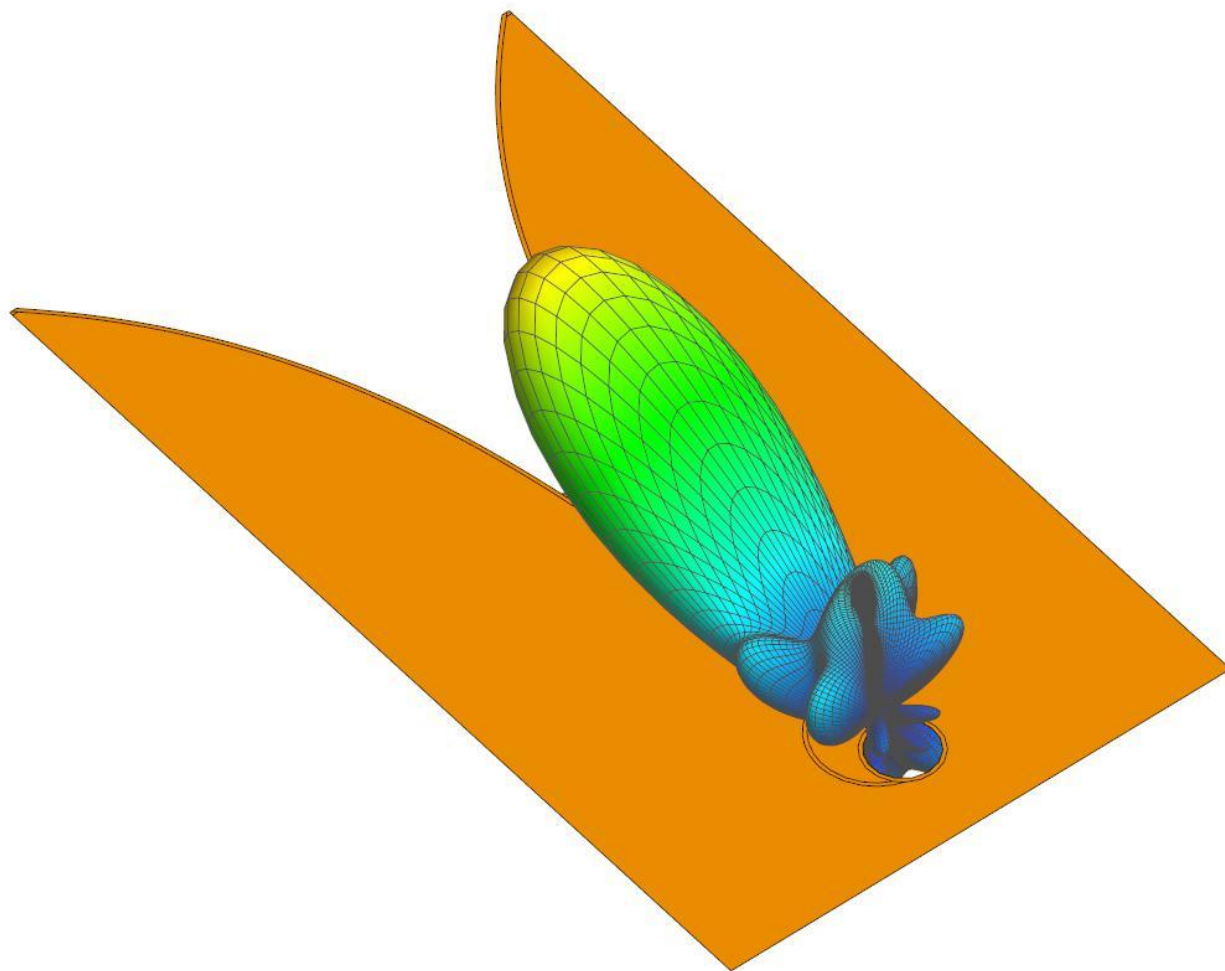
## Radiation pattern

The following picture shows Radiation pattern in 3D at a frequency of 6 GHz.



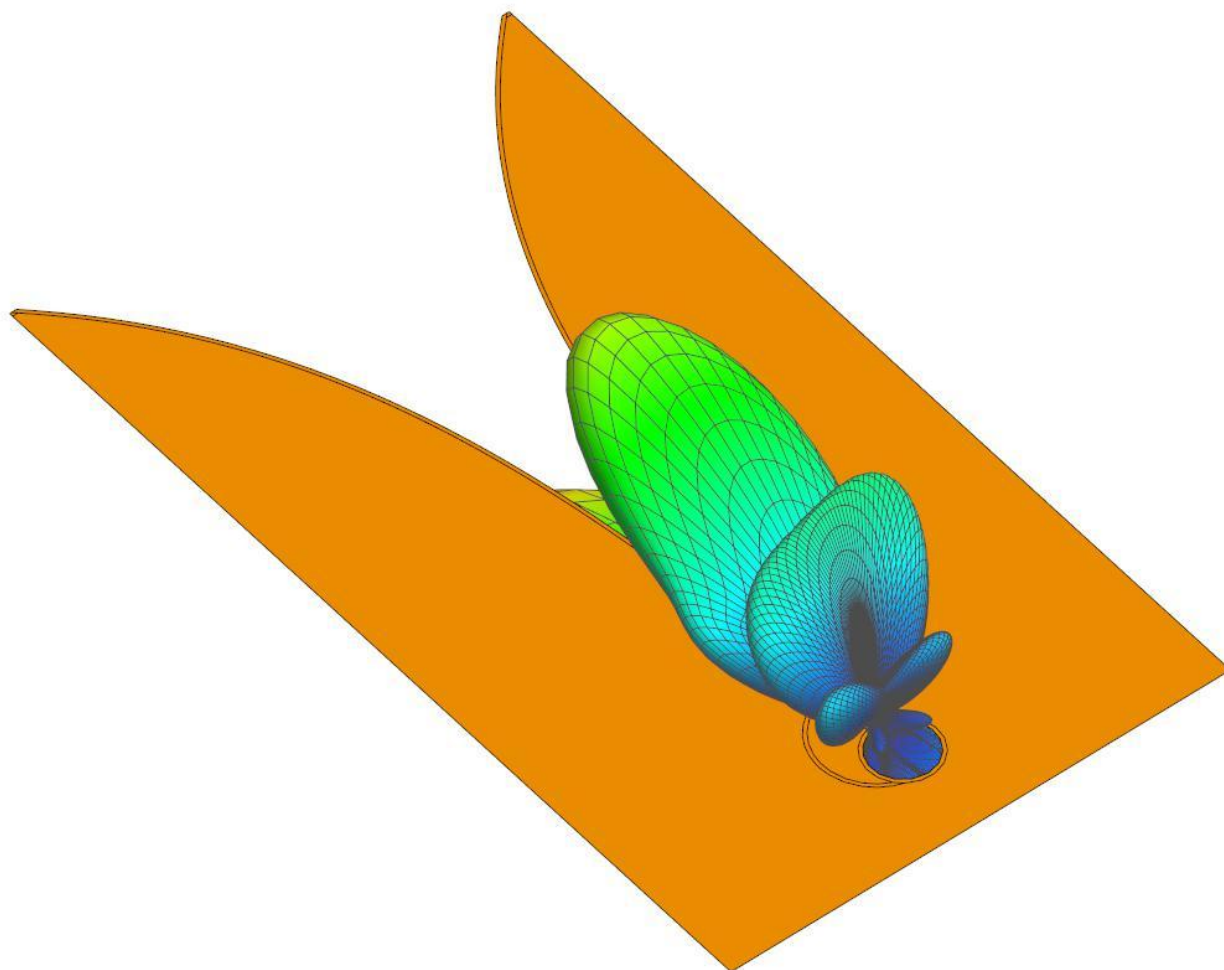
## Radiation pattern

The following picture shows Radiation pattern in 3D at a frequency of 7 GHz.



## Radiation pattern

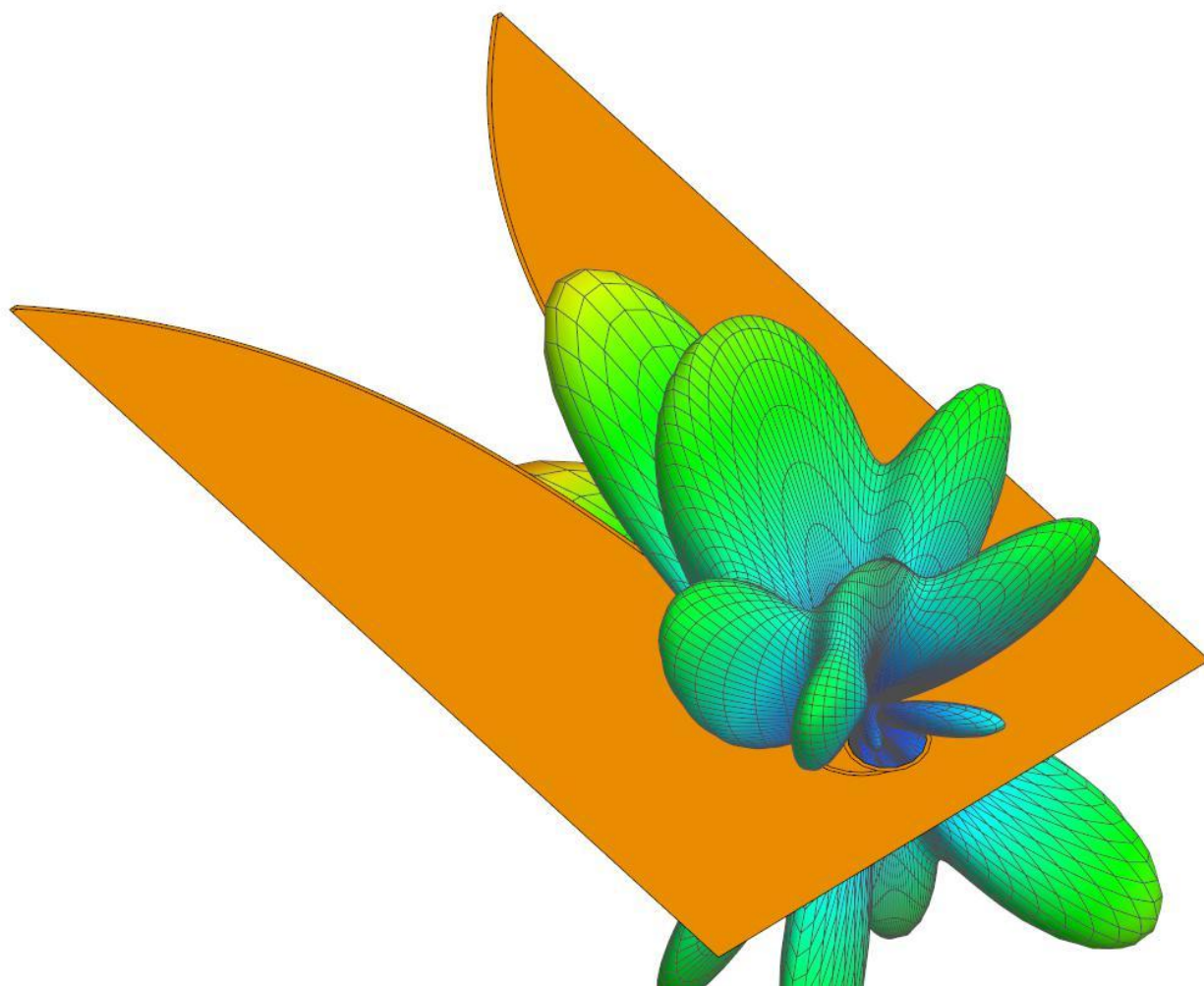
The following picture shows Radiation pattern in 3D at a frequency of 8 GHz.





## Radiation pattern

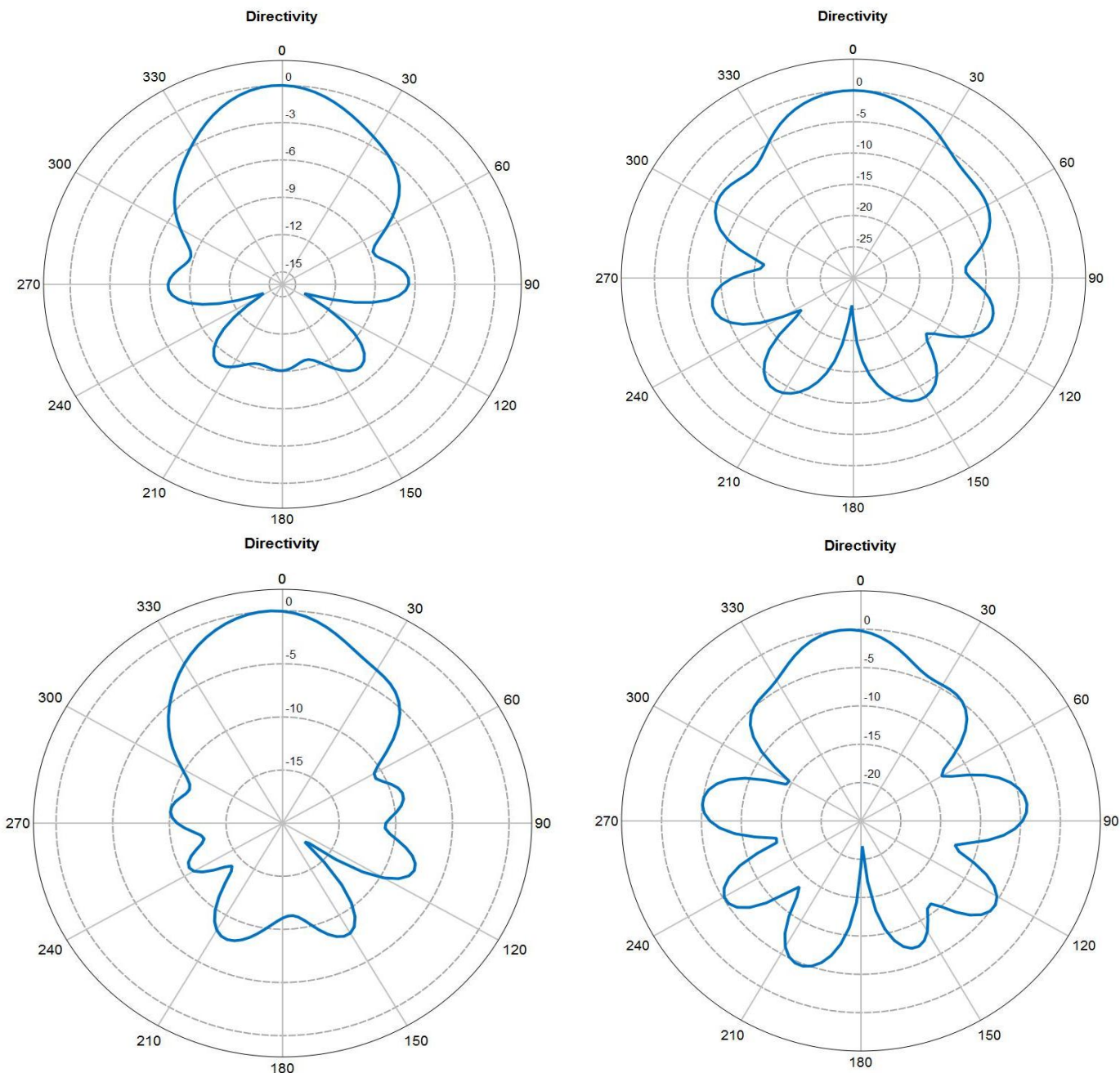
The following picture shows Radiation pattern in 3D at a frequency of 9 GHz.





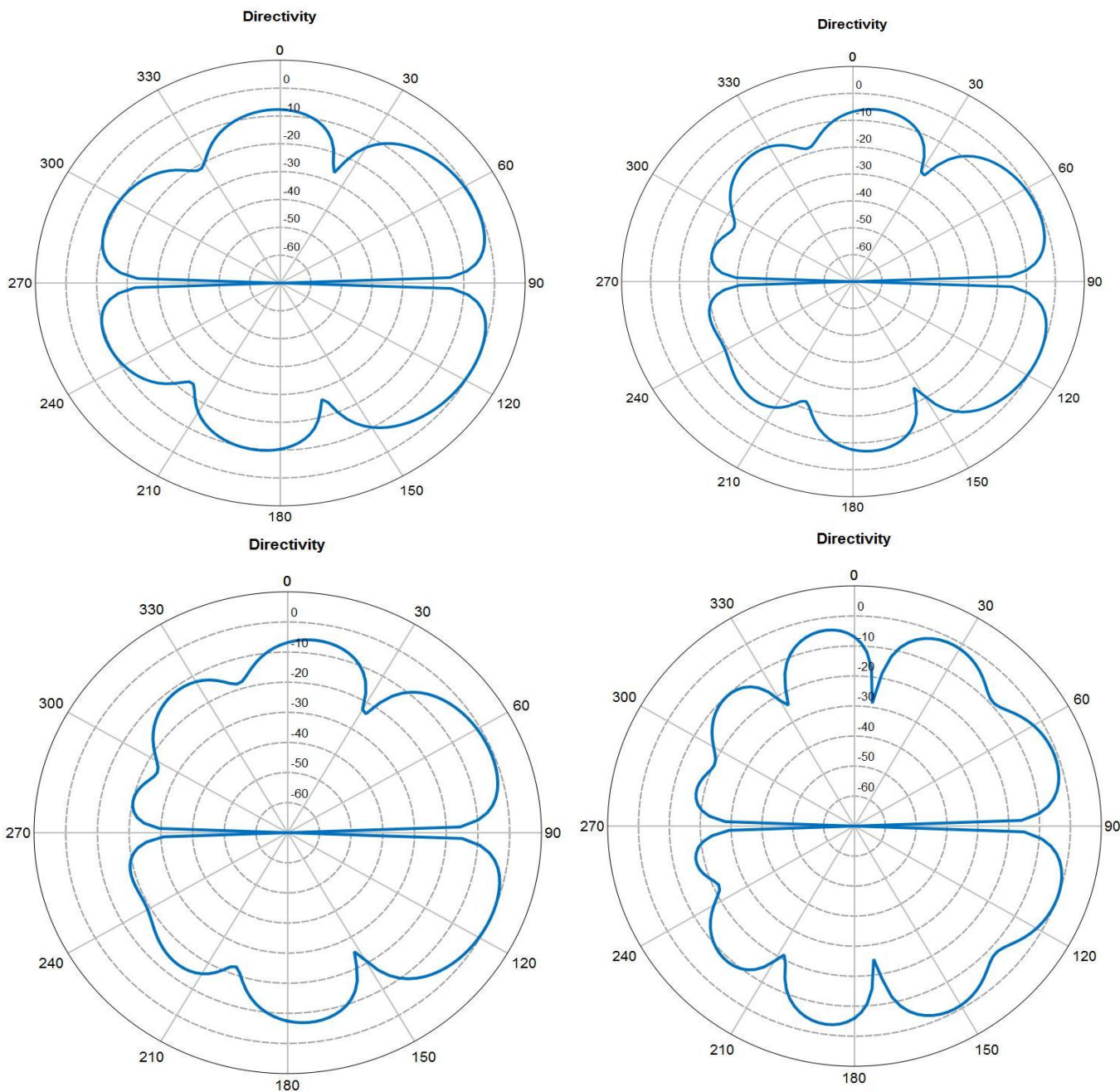
## Radiation pattern

The following picture shows normalized radiation pattern in the horizontal plane in dB with the shift of 5° at the frequencies of 6, 7, 8, 9 GHz accordingly.



## Radiation pattern

The following picture shows normalized radiation pattern in the vertical plane in dB at the frequencies of 6, 7, 8, 9 GHz accordingly.



## Application note

The directional and compact ultra-wideband antenna Antrad-8 can be used for radar systems and radio communication systems operating in different frequency bands from 5.8 to 8.7 GHz.

One of the key areas of antenna application is compact ultra-wideband sensors operating at small distances of 0-20 m:

- protection intellectual sensors for people detection and distinguish them from interfering signals (animals, trees, etc.);
- sensors for determination of object coordinates and positioning;
- sensors for precise measurement of distances, including those in optically opaque media;
- sensors for remote determination of person breathing and pulse frequency, etc.

The advantage of the PCB Antrad-8 antenna is its low cost for such class of antennas in almost complete absence of similar devices on the market.

## History

Author: Gregory Seregin, «KBOR», Moscow

Date: August 9, 2012

Revision: 1.0

Changes: -