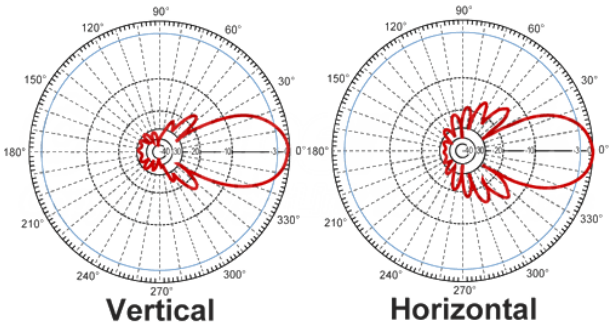
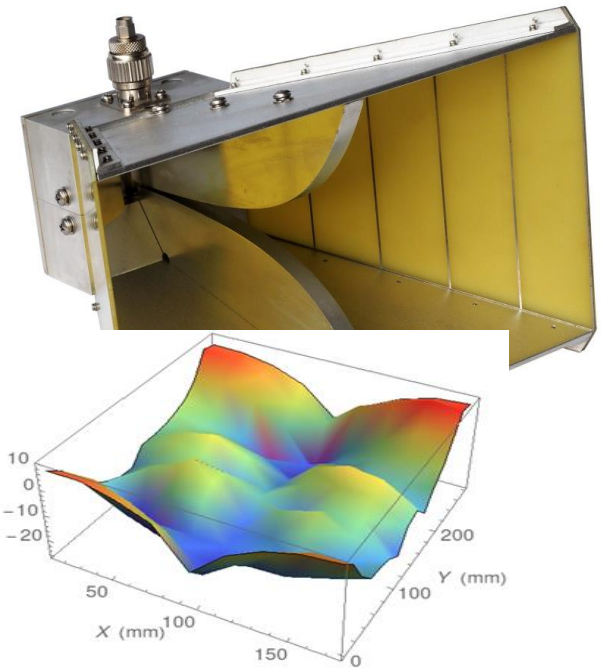
Context

The design of antennas involves the measurement of the radiated field emitted by the antenna to characterise its pattern (see example below).



Major concerns:

- Heavy and costly measurement setup
- Requires anechoic chamber



Existing technical E-field measurement

Up to now, the antenna under test is placed at few meters from the measurement of the E-field emitted by the antenna. During the test, the antenna is moved on its horizontal and vertical axis and at different frequencies.

This method involves to have the antenna under test inside an anechoic chamber to absorb the radiated field.

These points involve the following:

- Large anechoic chamber
- No vector field
- Setup may impact measurement

Proposed solution by Kapteos

To avoid to use a quite large anechoic chamber, the near-field measurement is an alternative solution which may be performed in a small room.

The electro-optic solution presents the best possible measurement system thanks to:

- A non-perturbative measurement (no metal part meaning a fully dielectric structure)
- A near vector E-field measurement (phase and amplitude)
- A very compact design (5 mm * 35 mm)
- A very small spatial resolution (< 1 mm)
- The possibility to use our instrument and a 2D or 3D scanner called eoScan (max 470 mm usable length per axis)

From the obtained E-field, a mathematical data processing is necessary to get the antenna pattern.

Targeted markets

Any manufacturers of antennas in the following domains:

- Defence
- Satellite
- Aircraft
- Research
- Telecommunication
- Data communication
- Internet of Things

Customer advantages of using Kapteos solution

- Easy and fast tests
- Support of an expert in electromagnetism
- Comprehensive data to get accurate antenna patterns

Kapteos references

- Internal mappings at Kapteos.
- Mappings of horn antennas
- Several publications on antennas characterisations