

### Context

The design of electronics products is more and more immune against electro-magnetic fields. However in some cases, even after the system acceptance tests, the system may present random behaviours linked to EMC (conducted or radiated). The investigation of the impact of EMC on systems may be very complex due to the application and the performances of the E-fields measurement systems usually based on an antenna technology. This need may also be present at R&D phase of component of system design or during a system commissioning.

### Existing technical E-field measurement

Up to now, the measurement of E-field is usually based on a dipole (antenna technology). The probes may present good performances but are quite big (d-dot or Langmuir) and cannot allow an accurate E-field mapping.

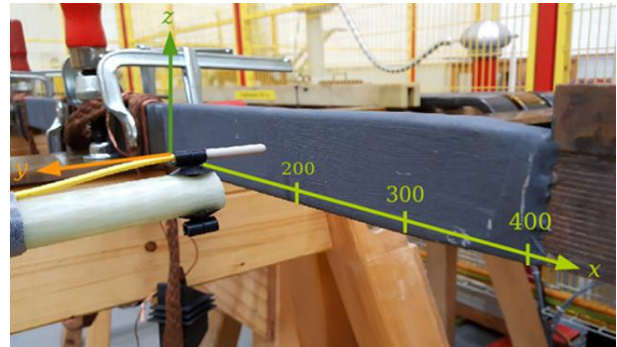
If the application presents medium or high voltage components, antenna based systems may not be suitable due to the metal parts.

The classical solutions do not measure the E-field vector (each axis with amplitude and phase) but only the r.m.s. field strength.

### Targeted markets

Any applications linked to high power like:

- Traction (main convertors, auxiliaries)
- Sub-stations
- Mining
- Power suppliers
- UPS
- Drives
- Windwills
- Solar convertors
- PCBs



*EMC investigation inside an application*

### Proposed solution by Kapteos

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

- A very compact design (5 mm \* 35 mm)
- A remote control box up to 100 meters thanks to a fibre optic (almost no losses)
- An insulated probe (near field possible even under 25 kV conditions)
- A very small spatial resolution (< 1 mm)
- An operating temperature from 0 to +50°C for the probe
- The possibility to use our instrument and a 2D or 3D scanner called eoScan (max 470 mm usable length per axis) for E-field mapping

### Customer advantages of using Kapteos solution

- Easy and fast investigation
- Support of an expert in electromagnetism
- Safe measurement (insulated probe)
- Comprehensive data to perform rapidly improvements, actions, corrections or mitigations

### Kapteos references

- Bus bar E-field mapping (GE -CH)
- PCB E-field mapping (NXP Semiconductors -FR)