

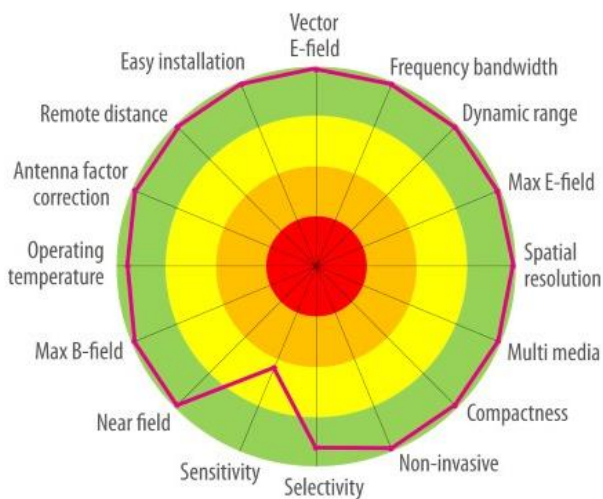
Pockels effect

Electromagnetic measurement systems, composed of eoSense instruments on the one hand and on eoProbe optical probes on the other hand are based on Pockels effect. This latter effect occurs in some optical crystals, called electro-optic (EO) crystals, and manifests itself as an E-field induced modification of the eigen dielectric axes of the EO crystal. An EO crystal behaves like a waveplate for a laser beam passing through it. Under applied E-field, the dephasing induced by the waveplate is modified in proportion to the field strength. This occurs through the E-field induced variation of the refractive indices of the EO crystal.



eoSense instrument with 3 eoProbe

General main features of electro-optic technology compared to existing ones



Please refer to Kapteos website for more details

Values

- Vector E-field: 3 axes in magnitude and phases
- Frequency bandwidth: 10 Hz to 40+ GHz with sub-nanosecond temporal resolution
- Dynamic range: 50 mV/m to several MV/m
- Max E-field: > 10 MV/m without damage
- Spatial resolution: < 1 mm
- Multimedia: air, liquids, gases, vacuum
- Compactness: 5 * 35 mm sensing probe
- Non-invasive: no metal => no impact on E-field
- Selectivity: > 50 dB
- Sensitivity: 50 mV/m/√Hz (air, longitudinal probe)
- Near field: down to 0 mm distance
- Max B-field (not measurable): withstand more than 4.7 T
- Operation temperature: 0 to 50 °C (probe)
- AF correction: automatic and real-time
- Remote distance: up to 100 meters
- Easy installation: set-up ready in < 5 min