



### Electromagnetic field (EMF) surveys, RF Exposure & Risk Assessment

Full Spectrum Magnetic DC & AC and electromagnetic EMF surveys around the world.

Electromagnetic fields cause interference with electronics or they may affect the health of human beings. Corporations are responsible for safe working environments for their employees.

In addition, sites of sensitive equipment need to comply with the manufacturer's site specifications- this is essential for both system performance and warranties. It is important to recognize this at an early stage so that budgets are not exceeded.

#### Services

- Magnetic DC/AC surveys
- Electromagnetic radiation exposure limits
- Vibration / Acoustics site surveys
- Continuous monitoring

#### Applications

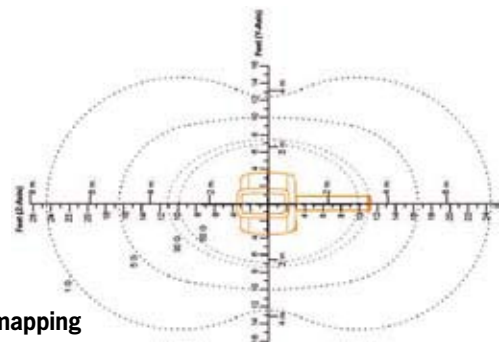
- Sensitive equipment, laboratory
- Medical / Telecom
- MRIs, EEGs and CTs
- Electron microscopes / Nano Technology
- Define RF levels at location, sick building syndrome
- Define safe limits & distances

### 1. Sensitive magnetic field measurements

For both AC and DC fields, the surveys employ a number of techniques to assess the site's magnetic environment. EMI surveys include AC, DC, Grid Measurements, Contour Mapping, and Time Studies. Most commonly, we use is a grid configuration where the magnetic field sensors are positioned in a grid within a building area or within the rooms of interest.

#### Features

- Frequency range DC and 1 Hz - 3,5 kHz
- Trace typical 50 / 60 Hz sources
- DC magnetic fields
- 0.1nT to 1000uT (0.001mG tot 10 Gauss)
- Isotropic measurement in X, Y and Z directions
- Define safe limits & distances



Contourmapping

### 2 EMF surveys / RF exposure measurement

Assessment of human or equipment exposure to both low frequency radiation generated by power lines, transformers, MRIs as well as exposure to high frequency industrial sources and telecommunication antennas like GSM and UMTS. We offer professional site assessments for institutions, hospitals, municipalities and corporations. Tests may be performed to meet ICNIRP standards or alternative health recommendations such as SBM-2008.



#### Features

- Magnetic DC and 1 Hz - 3.5 kHz
- Electromagnetic 9 kHz to 26 GHz and beyond
- Persons & Equipment
- GSM / UMTS / WIFI / 4G
- Define safe limits & distances



### 3 Continuous monitoring

We install systems for continuous monitoring and logging magnetic and electromagnetic radiation. These help to ensure that workplaces, sensitive equipment and areas in the vicinity of e.g. hospitals stay within the range of safety regulations.

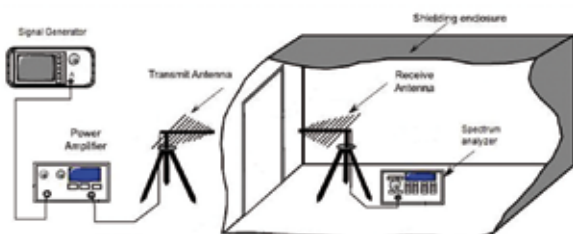


### Applications

- Comply with regulations
- Guarantee safety of employees and operators
- Reassure workers and employees
- Alert personnel
- Real estate
- Hospital

### 4 RF testing and RF diagnostics of products and enclosures

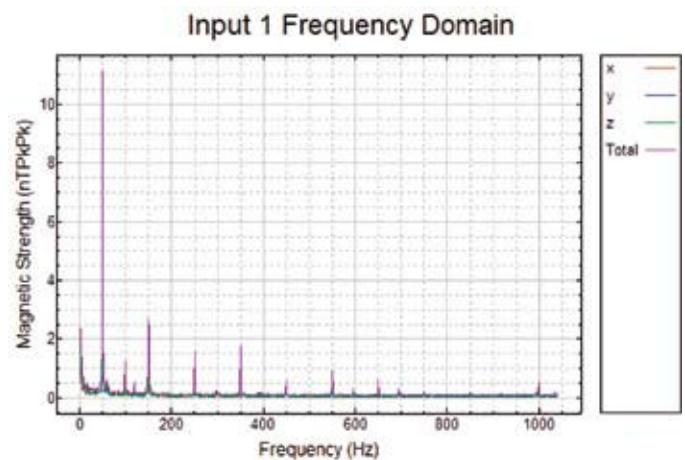
Shielding effectiveness acceptance tests on location and testing of materials to determine Shielding Effectiveness at Radio Frequencies. RF Testing is used to detect problems within new and existing RF enclosures, which may need periodic re-certification, such as ACR and ISO9001 accreditation. Unintentional damage may occur to the enclosure or modifications may be needed. Re-certification of the enclosure and repair of any RF leaks are essential to ensure that your shielded room is working properly.



### Testing shielding effectiveness

- Shielding effectiveness acceptance tests
- Custom Enclosures
- NEMP / MIL-STD
- TEMPEST compliance
- Site compliance
- (Re-) Certification ARC / ISO 9001
- Radar protection test
- Products testing for Windows, Ventilation Panels, Sheet Materials and Gaskets / Seals

### 5 Magnetic emission product testing



Aeronautic, defense and other sensitive laboratory products are subject to emission limitations for both DC and AC magnetic fields. Holland Shielding Systems offers accurate emission testing for magnetic radiation, ranging from DC (0Hz) to 3.5 kHz, with 0.1 nanoTesla sensitivity.