



Official MAGNETIC SHIELD CORPORATION Document

What are the frequency ranges of electromagnetic interference (EMI) and electromagnetic compatibility (EMC)?

EMI (electro magnetic interference) can be roughly classified by the frequency of the interfering signal. Although some users may consider differing break points, approximate ranges are:

Microwave (MW)	300 MHz - 300 Ghz
Radiofrequency (RF)	300 Hz - 300 MHz
Extremely Low Frequency (ELF)	30 Hz - 300 Hz

The ELF range includes the 60 Hertz power line frequency commonly used in the United States and many countries. In other countries and regions, the power line frequency is 50 Hertz.

The radio frequency range is quite broad, and includes some lower frequencies that can be effectively shielded by magnetic shielding alloys and constructions. At the highest frequencies, shield techniques include much greater need for tight seams and space-filling conductive gaskets at joints.

To clarify, look at the definitions of terms sometime encountered in EMI (electromagnetic interference) control, in the following table:

Term	Definition
ELF	Extremely Low Frequency. Typically used to describe magnetic fields in the power line frequency range - 50 or 60 Hertz
EMF	Electromotive Force or Electromagnetic Field. Describes the presence of magnetic field energy and its intensity and distribution.
EMF Protection	Providing shielding to prevent exposure to magnetic flux fields and reduce their effects