

Non- Ionising Radiation – what you need to know in simple terms.

With reference to the various Guidelines and in particular the ICNIRP (International Commission on Non-Ionizing Radiation Protection), the following is a brief understanding of what is measured by the FieldSENSE 2 and the impact of those measurements on the human body. There are two types of radiation of which needs to be considered, Ionizing and Non-Ionizing Radiation.

Radiation is classified as being either non-ionizing or ionizing. Non-ionizing radiation is longer wavelength/lower frequency lower energy. While ionizing radiation is short wavelength/high frequency higher energy. Ionizing Radiation has sufficient energy to produce ions in matter at the molecular level.

Because the radio signals that most RF engineers deal with are lower frequency and results in lower energy, the impact of the radiation is different compared to Ionizing Radiation.

To ensure that the engineer can operate in a safe environment and also the public can live in a safe environment, after numerous researches were carried out, safe levels were set.

Studies proved that when the body temperature was raised by 1°- 2° C caused by absorbed electromagnetic energy, many physical effects have been characterised. These effects include neural and neuromuscular functions, increased blood-brain barrier permeability, ocular impairment, to name a few.

To ensure that the occupational safety level was set to one which would not impact the engineer over time, a factor of 10 was applied which on the FieldSENSE indicate 100%. For the general public a further degrading of level was applied and that by a factor of 5 (which amounts to 50 times less than the hazard level)

So to sum up, 100 % would be a situation where for occupational safety the body temperature rose by 0.2 C and for the general public, 0.04 C. The FieldSENSE 2 will monitor the level in both fields, E & H, and store them on the device which can be downloaded for record keeping and further investigation.

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