

ECOLOG Measuring Report - EnOcean Minimizes Electric Smog

1. PURPOSE

Purpose of the measurement was to evaluate the strength of the high-frequency electromagnetic fields emitted by the radio switches of EnOcean, regarding possible harmful effects and the comparison with the emissions of established high-frequency sources in homes and offices.

2. ASSESSMENT

... "Furthermore, the power flux densities caused by the radio switch are significantly below the power flux densities that may arise from the operation of a conventional light switch." [1]

"From the perspective of health protection and the reduction of exposures to electromagnetic fields, the radio switch has another advantage over conventional switches: when installing a radio switch, the length of lines conducting power is reduced and, thus, the potential exposures to low-frequency magnetic fields are minimized.

This is especially interesting when higher currents are carried by the lines, e.g., for supplying the lighting in open plan offices and when permanent work places are located near the lines." [1]

3. COMPARISON OF POWER FLUX DENSITIES

Device/ System	Power flux density (W/m ²)	Distance (m)	Duration
EnOcean Radio switch	0,000013	1	few ms when operated
Convent. light switch	0,0015	1	few ms when operated
WLAN Access Point	0,01	2	during data exchange
Wireless network card	0,1	0,5	during data exchange
DECT phone	1	0,1	during phone call
Mobile phone	12-42	0,1	during phone call
DECT base station	0,00001 - 0,1	various	permanent

*Conventional light switches cause 100 times higher high-frequency emissions.
Sources: [1], [2]*

4. EXECUTION OF THE MEASURING REPORT

ECOLOG-Institute for Social-Ecological Research and Education gGmbH, Nieschlagstraße 26, D-30449 Hannover:

- [1] ECOLOG Measuring Report "Hochfrequenzemissionen von Funkschaltern der Fa. EnOcean", February 2009
- [2] ECOLOG Institut, EMF-Handbuch 'Elektromagnetische Felder: Quellen, Risiken, Schutz' 2006, chapter 4, table 4.9

The ECOLOG-Institut has specialized on the impact of technological development on human health and the environment, especially the genotoxic effect of high-frequency electromagnetic fields.

