



## AT A GLANCE

LiFi is mobile communication by using the light. LiFi can be easily installed in residential areas by reusing the existing powerlines, offering dedicated hot-spots for robust wireless communication.

### Features

- Light-based wireless communication
- Easy and low-cost installation by reusing existing powerlines
- Robust against hacking and jamming
- Sharply delimited wireless cells
- No interference with radio networks
- >100 Mbit/s data rate

### Applications

- Small Office and Home: Improved privacy via light communication
- Industrial: Robust communication in EMI-loaded environments
- Medical: Interference-free communication in sensitive areas

### Technical Background

Optical wireless communication („LiFi”) is an alternative to radio transmissions for mobile communication. The propagation of light allows the setup of small wireless cells with deterministic signal propagation, completely independent of other wireless networks.

With LiFi over powerline, LiFi antennas at the ceiling are connected to the Internet via the already existing powerline grid. This allows multiple LiFi antennas to be installed per room by simply connecting them to the mains.

This innovative concept avoids new cabling and enables the coverage of large areas at very low cost. The possibility to install multiple LiFi antennas increases coverage and alleviates blockage.

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Technology demonstrated in real environment TRL6

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*Figure 1: One or multiple LiFi antennas (black box) can be connected via powerline to the WLAN Router. With an integrated LiFi antenna and powerline profile support, which is available in the latest G.hn standard from ITU-T, multiple mobile devices can be used for robust and secure data transfer.*



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*Figure 2: Test of LiFi in a classroom scenario. Multiple LiFi antennas can be connected to the same powerline grid.*