

Outdoor LiFi Point-to-Point Link



AT A GLANCE

LED based Optical Wireless Communication (OWC) links, a low-cost alternative to wired connections, offer high robustness and throughput, as well as easy alignment.

Fraunhofer HHI provides high speed OWC links with proven uninterrupted availability in challenging outdoor conditions.

Specifications

- Infrared LED based
- Data rates:
 - 1000 Mbit/s over 100 m
 - 500 Mbit/s over 200 m
- > 99.99% availability in bad weather
- Bidirectional data exchange
- Dynamic rate adaption
- Low latency (< 2 ms)
- Power-over-Ethernet (PoE)

Background

Future applications like smart cities, autonomous driving and the networked broadband society demand for flexible solutions regarding communication. Decisive approaches to meet the challenging requirements are connected streetlights, vehicle-to-vehicle communication and the wireless last hop to the customer, also denoted as wireless to the home. For these purposes, economic point-to-point solutions are needed. Optical wireless links can provide robust communication at low-cost with high data rates, offloading traffic from commonly used directed radio technologies, e.g., millimeter wave, and thereby relieving the radio spectrum.



Optical Wireless link for short-range fixed access applications.

Applications

- Connected streetlights
- Vehicle-to-X communication
- Wireless-to-the-home
- Mobile backhaul

Benefits

- Low cost optical wireless link based on infrared LEDs
- Improved link robustness due to rate adaption
- Easy alignment
- Afterwards, no tracking is needed
- Relieve radio wave spectrum for mobile access

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