

Interference Immunity and Transmission Reliability of Industrial Wireless Technologies

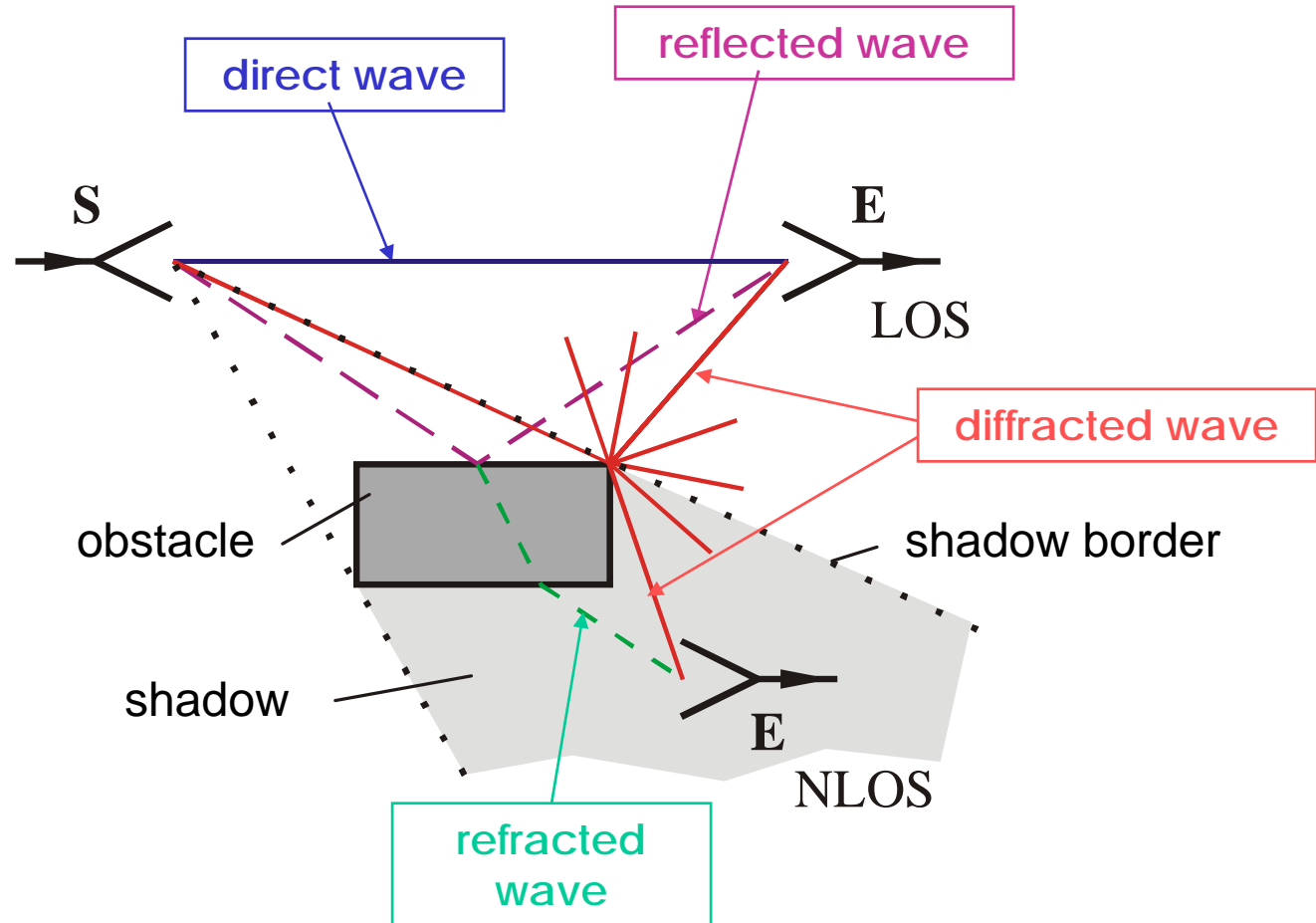


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Weidmüller, Detmold

- Applications
- Wireless Technologies
- Environment
- System Parameters and Measurements
- Results
- Summary

Passive Effects



LOS: Line of sight

NLOS: Non line of sight

Applications

Wireless
Technologies

Environmental
Effects

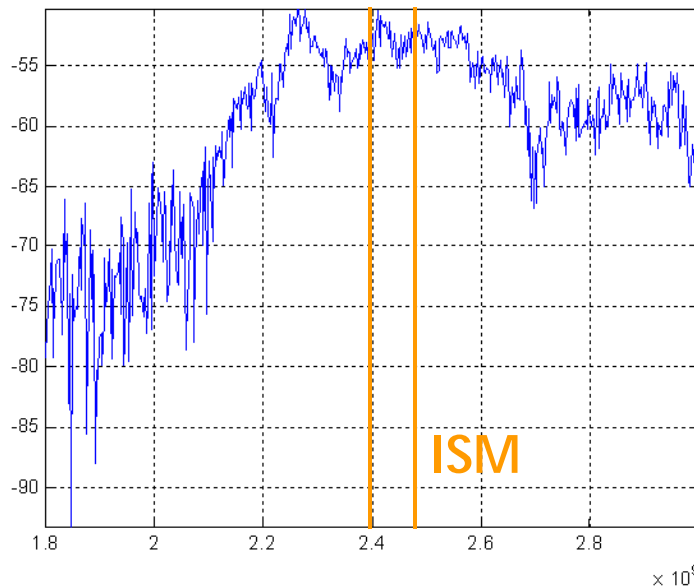
System
Parameters and
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Results

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Network Analyzer: Channel Gain / dB

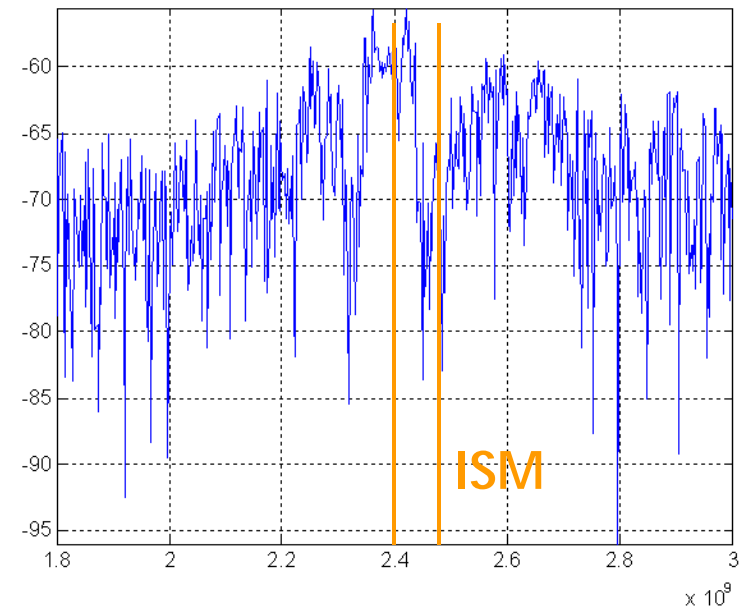
Anechoic chamber



1.8 ... 3 GHz



LAB environment (LOS)



1.8 ... 3 GHz



multipath propagation → frequency selective fading

Measurements of stationary Bluetooth based SAI application with isotropic radiation pattern

- **Simplified SAI placement**
- **Low shadowing effects**
- **No directional interference suppression**

Results

- **No bit errors on application level**
- **Less packet losses on application level**
- **Strong WLAN interferers are critical**
- **Passive industrial environments are not critical for distances up to 12 m (path loss < 70 dB)**
- **Motion effects negligible for stationary applications**