

# **WIDEBAND MILLIMETER WAVE COMUNICATION LINK IN THE EXTREMELEY HIGH FREQUENCIES**

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The demand for broadband wireless communication links and the lack of open bands in the lower part of the electromagnetic spectrum, have led the allocation of bands in the Extremely High Frequencies (EHF) above 30GHz. The unique features of wireless links in millimeter waves for high rate data transfer will be discussed.

In EHF, the atmospheric medium is not transparent. Absorptive and dispersive effects emerge while millimeter wave radiation propagation in the atmosphere. Selective molecular absorption, mainly oxygen and water vapors, cause reduction in received signal levels as well as dispersive group delay. Weather conditions also play a role in the availability and reliability of terrestrial wireless links.

Theoretical analysis, simulation and experimental results of wideband communication links operating in millimeter wave lengths are presented.