

EURO-COST

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Frequency Dependency of Measured Highly Resolved Directional Propagation Channel Characteristics

Abstract— An indoor measurement campaign has been conducted in order to determine any frequency dependent characteristics of the directional radio propagation channel over the frequency range 6-60 GHz. For the analysis a novel method, which previously has been proven to provide exceptional measurement accuracy at 58.7 GHz, is used. Herein it is shown that the measured channel power distributions over direction and delay are surprisingly similar over the full frequency range in both LOS and NLOS conditions. One exception is that the window transmission attenuation and reflectivity is substantially different at the two frequencies 5.8 GHz and 14.8 GHz. This difference results in that one of two dominant pathways at 14.8 GHz goes out of the building and is reflected off an adjacent building back in again to the receiver location. This does not occur at 5.8 GHz as the windows block penetration at this frequency.

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