

Outdoor APD Measurements in Industrial Environments

Carl Karlsson^{#1}, Per Ångskog^{#2}, Javier Ferrer Coll^{#3}, José Chilo^{#4}, Peter Stenumgaard^{*#5}

*#Center for RF Measurement Technology, University of Gävle
SE-80176 Gävle, Sweden*

¹carl.karlsson@hig.se

²per.angskog@hig.se

³javier.ferrer@hig.se

⁴jose.chilo@hig.se

**Swedish Defence Research Agency
P.O Box 1165, SE-581 11, Sweden*

⁵peter.stenumgaard@foi.se

Abstract— The performance of wireless applications in outdoor industrial environments is degraded by the effect of unknown interferences, therefore, characterization of these environments has to be done. Measurements have been performed to determine electromagnetic interference in three outdoor industrial environments: steel mill, railway transport and paper plant. In this paper it is shown how the measurements of the Amplitude Probability Distribution (APD) can be combined with conventional electric field measurements for such characterization.

Key words: APD, wireless communications, electromagnetic interference, bit error probability, industrial applications.