WE-PM-PS POSTER SESSION

POSTER SESSIONS
1:30 PM - 3:30 PM
Exhibit Hall Posters

Wireless Coexistence: Impact in the Mining Industry
Ronald D. Jacksha, Robert H. Bissonette
CDC NIOSH, USA

The ability of safety critical wireless systems—e.g., voice communication, proximity detection, teleremote operation, telemetry, etc.—to function satisfactorily (coexist) in the presence of other wireless systems is critical to the safety and health of mine workers. The failure of wireless systems to coexist could result in the delay, corruption, or outright loss of critical data. However, no mining-sector-specific regulations, standards, or guidelines exist to ensure the safe coexistence of wireless systems.

Improvement of TLP-HMM's Load Dependence
Masahiro Yoshida[1], Yusuke Yano[1], Takeshi Ishida[2], Jianqing Wang[1]
[1]Nagoya Institute of Technology, Japan; [2]Noise Laboratory Co.,LTD, Japan

The ESD generator and transmission line pulse – human metal model (TLP-HMM) have different output structures and are calibrated with different calibration targets. This results in that the first peak current of TLP-HMM is different from ESD generator even for the same device under test (DUT) because the reflections at the DUT are changed from the calibration. In this study, we proposed a new TLP-HMM structure to improve the TLP-HMM's load dependence.

Extracting Material Parameters for Differential Stripline Modeling
Kaisheng Hu
Ciena, Canada

The Material parameters, such as Dk (Relative Permittivity), Df (Loss Tangent), and surface roughness, are key factors for SI modeling. However, using the parameters within vendor's datasheets can result in a significant offset between simulation and test results due to production variations. To address this issue, a simple and effective method is proposed to extract laminate parameters for differential stripline based on laboratory measurements.

Influence of Antenna Height Scan in Radiated Emission Measurement above 1 GHz
Fuminori Kanahara[1], Kunihiro Osabe[1], Hidenori Muramatsu[2]
[1]Sony Global Manufacturing and Operations Corp., Japan; [2]VCCI Council, Japan

CISPR 32 Ed. 2.1:2019 added antenna height scan in radiated emission measurements above 1 GHz. This document describes the impact of the change in measurement method.

Emissions and Immunity of Wireless Systems Installed in Underground Mines
Carl B. Sunderman, David P. Snyder, Ronald D. Jacksha
CDC NIOSH, USA

It is generally accepted in the mining sector that Federal Communications Commission (FCC) rules will ensure that installed communication systems will operate interference free. However, that's not generally the case, as the FCC imposes few restrictions on the operation of wireless equipment in mines and tunnels. This paper will clarify the rules and regulations related to the operation of wireless equipment at underground mines and discuss the responsibilities and liabilities of mine operators for use of various classes of wireless equipment.

An H-Field Simulation Method to Solve Wireless Desensitization Due to the DDR Noise
Fu Luo-Larson, Amrithaa Seshadri, Akshay Mohan
Amazon Lab126, USA

Most consumer electronics nowadays integrate multi-radios and high-speed memory interfaces into a very compact form-factor. High speed digital noise is one of common aggressors for desensitization. In this paper, a comprehensive EM simulation workflow is used to analyze the coupling mechanism from the DDR power plane, and optimize the decoupling capacitor value and location to minimize the desense to the WiFi antenna. The concrete measurement has been done to prove the significant improvement with the mitigation.

FINAL PROGRAM

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