Hello,

During a recent discussion with one of my colleagues, a question came up about the lack of scrambling on 1000BASE-CX and how that might impact radiated emissions tests.

While I do not have the time or resources to perform EMC tests on a 1000BASE-CX link, I was able to compare (via simulation) the relative amplitude of the frequency components of a continuous IDLE signal versus a scrambled NRZ data pattern.

Attached is a plot of the resultant FFT analysis for a 1000 bit time sequence.

It shows a substantial harmonic content at various frequencies of interest. I believe that this simulation suggests that we should perform some tests or compare this data against previously gathered data to ensure that we are not going to have a problem with FCC/CISPR compliance when the IDLE signal is being transmitted.

Regards,

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