
TITLE **Limiting crest factor on modulating RFI tones**

PROJECTS RFI

SOURCE: KPN

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STATUS for Decision

We propose to enhance the text about the modulation of RFI tones, to prevent overmodulation of the carrier. The solution is quite simple: just delete the phrase "Gaussian distributor", and add an upper limit to the crest factor ($CF < 3.1$) so that overmodulation cannot occur. There are many ways to ensure this. One of them is distributed over the ETSI-TM6 e-mail exploder, and another one is shown in 032t51. These are examples only, out of many other possibilities, and are not intended to become the mandatory solutions. That's why we believe that the following enhancement of the specification is adequate

CURRENT TEXT (see latest ADSL standard)

- $\mathbf{a_k(t)}$ - The normalized modulation noise $\alpha_k(t)$ of each individually modulated carrier shall be random in nature, shall be Gaussian distributed in nature, shall have an RMS value of $\alpha_{\text{rms}} = 1$, shall have a crest factor of 2,5 or more, and shall be uncorrelated with the modulation noise of each other modulated carrier in the ingress noise signal.

PROPOSED ENHANCED TEXT

- $\mathbf{a_k(t)}$ - The normalized modulation noise $\alpha_k(t)$ of each individually modulated carrier shall be random in nature, shall have an RMS value of $\alpha_{\text{rms}} = 1$, shall have a crest factor between 2,5 and 3.1 (to prevent overmodulation), and shall be uncorrelated with the modulation noise of each other modulated carrier in the ingress noise signal.