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To: 'labhelp@fcc.gov'
Subject: Part 25.202(f) emission mask

To: Lab Help
Ref: Measurement Interpretation

I have a client with a satellite terminal operating at 1643MHz for which they are trying to get certification under Part 25. The Satellite Provider has an authorized BW of 10kHz for this usage. The unit uses MSK modulation and has a 26dB bandwidth of about 7.2kHz. These parameters are already in use and specified via the satellite provider.

The problem arises with the emissions mask specified under Part 25.202(f) when it talks about a "in any 4kHz band". With such a small authorized bandwidth (10kHz) there's no way the emission can comply with the in-band mask when measured with a 4kHz or larger bandwidth. Typically a RBW of 1% or larger of the emission bandwidth is used to measure emissions for emission mask measurement. Attached are 3 plots showing a CW signal from a signal generator measured with varying RBW's of 1kHz, 3kHz and 10kHz in comparison to the Part 25.202 emission mask. Based on a 10kHz authorized BW the CW doesn't comply with the mask using a 3k or 10k RBW. An additional emission mask plot showing the actual signal measured with a 300Hz RBW is also included.

Is it acceptable to show compliance with Part 25.202(f) using a resolution bandwidth of 300Hz (>1% of Occupied Bandwidth) for this signal since the authorized bandwidth is only 10kHz?

Thank you,
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