



PUBLIC NOTICE

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OET Clarifies Equipment Authorization Policy for Measurement of Broadband Emissions

Part 15 of the FCC Rules provides for the operation of low power communication devices without an individual license (e.g., intrusion detectors, pulsed water tank level gauges, etc.), subject to certain requirements. Some of these devices use extremely narrow pulses to generate wideband emissions, which are measured to determine compliance with the rules. These measurements are typically performed with a receiver or spectrum analyzer. Depending on a number of factors (e.g., resolution bandwidth, pulse-width, etc.), the spectrum analyzer may not always display the true peak value of the measured emission. This effect, called "pulse desensitization," relates to the capabilities of the measuring instrument. For the measurement and reporting of the true peak of pulsed emissions, it may be necessary to apply a "pulse desensitization correction factor" (PDCF) to the measured value, pursuant to 47 CFR 15.35(a).

It has come to our attention that some test laboratories and manufacturers are either not aware of, or are not applying the PDCF when required. Test laboratories and manufacturers of devices using pulse emissions are reminded to include in the test report the true peak level of the emission when the limit is specified in terms of a peak emission, which may necessitate the use of a PDCF. (Note: PDCF is not required when measuring Ultra-Wide Band (UWB) systems because the FCC Rules specify a different measurement procedure for determining compliance with the UWB Rules.)

Information about pulse desensitization is available in a book entitled "*Spectrum and Network Measurements*," 297 Pages, Robert A. Witte, and Publisher: Noble Publishing, 2001, originally published: 1993 by Prentice-Hall. Another good explanation of pulse desensitization and source for determining the PDCF was the Hewlett Packard Application Note, 150-2, entitled: "*Spectral Analysis – Pulse RF*," November, 1971. Unfortunately, this application note is no longer published.

To fill the void of an adequate measurement procedure for PDCF, we understand that the Accredited Standards Committee on Electromagnetic Compatibility, C63, is planning to include information about the application of PDCF in a future edition of ANSI C63.4, "*American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz*." ANSI C63.4 is the procedure used by the FCC in determining compliance to many devices subject to Part 15 of the FCC Rules.

In the meantime, questions about this public notice or about the measurement of true peak emissions should be referred to Art Wall (301-362-3023), Art.Wall@fcc.gov or William Hurst (301-362-3031), William.Hurst@fcc.gov.