

Federal Communications Commission
Office of Engineering and Technology
Laboratory Division Public Draft Review

Draft Laboratory Division Publication

Title: Pre-Calibrated field Method

Short Title: Pre-Calibrated field Method

Reason: New Publication

Publication: 449343

Keyword/Subject: Pre-calibrated field methodology

First Category: Administrative Requirements

Second Category: Measurement procedures

Third Category: TIA 603

Question: Can a pre-calibrated field methodology be used in conjunction with the procedures described in the TIA-603-C standard to measure the radiated output power and/or the spurious emissions generated by a transmitting device for demonstrating compliance to FCC rules?

Answer: Measurements to detect unwanted transmitter emissions in the spurious domain that may be radiated from a DUT cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of operation are required per Section 2.1053 of the FCC rules, and must be performed on a radiated basis. Additionally, radiated measurements are often required to determine the maximum output power from a licensed transmitter that features an integral transmit antenna but does not provide an access port for performing conducted measurements. FCC laboratory policy requires the use of a signal/antenna substitution methodology, as described in Sections 2.2.12 and 2.2.17 of TIA-603-C, to perform these measurements.

The FCC has received several inquiries regarding the acceptance of an adjunct methodology, whereby a signal generator is used to radiate a signal that is swept over a pertinent frequency range, and then

recorded at a single point in space at a distance corresponding to the measurement distance required for compliance testing. A table of data collected from this site “pre-calibration” is then to be used to replace specific substitution procedures as described in Sections 2.2.12 (j) through (l) and/or 2.2.17 (c) and (d) of the TIA-603-C standard.

Since the pre-calibrated field methodology has not been recognized as part of an industry standard or formally submitted to the FCC for consideration, data collected using this method cannot be deemed acceptable for demonstrating compliance to FCC rules. It is our understanding that the Accredited Standards Committee C63® — Electromagnetic Compatibility is considering related measurement procedures. If C63®, or another recognized standards organization, develops alternatives to the measurement methods described in TIA-603-C, then the FCC is prepared to consider the acceptability of those alternative measurement methods.

