



# PUBLIC NOTICE

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## FCC EXPANDS USE OF GTEM CELLS FOR EQUIPMENT AUTHORIZATION MEASUREMENTS

On December 2, 1993, the Commission released Public Notice 40830 announcing that, under limited conditions, it would accept GTEM cells as alternate test sites for making radiated emissions measurements for equipment authorization purposes under Part 15 of the FCC Rules. Under the same limited conditions, the Commission will now also accept GTEM cells for making the radiated emissions measurements required to show compliance with the limits for equipment authorizations under other Parts of the Rules where such measurements are normally obtained at an open area test site.

The GTEM cell is a relatively new measurement technology. Until recently, manufacturers had employed the GTEM cell as an aid in designing products for FCC compliance and for checking the continued FCC compliance of production units. However, the FCC did not accept GTEM test data for equipment authorization purposes. The FCC Laboratory has been conducting an ongoing evaluation of the capabilities and limitations of GTEM technology in cooperation with Subcommittee 1 of the ANSI C63 Committee. While this work is not yet complete, data collected so far has indicated good correlation with open area test site results for a variety of equipment under test.

Use of a GTEM cell as an alternate test site has several benefits. Measurements can be made much faster than on an open area test site—under an hour for a GTEM test as compared to 4 to 8 hours for an open area test. Use of a GTEM cell will reduce the costs of tests and alleviate delays in testing due to inclement weather. Also, because GTEM testing is fast and inexpensive, manufacturers are more inclined to check equipment design changes for continued FCC compliance.

In consideration of the above, the Commission has determined that it will now accept for compliance demonstration purposes radiated emission measurements taken using a GTEM cell under the following conditions:

1. Acceptable comparison measurement data must be filed with the Customer Service Branch accompanied by an appropriate analysis that demonstrates equivalence with an open area test site. For equipment testing subject to the measurement facility filing requirement of Section 2.948 of the Commission's Rules, the facility must be listed as complying

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with the requirements of ANSI C63.4-1992. For other equipment, a listed facility may be used or sufficient information and data must be submitted to show that the open area test site complies with the requirements of C63.4. Comparison data must be provided for each general type of equipment under test (equipment of similar functionality and physical configuration; e.g., handheld transmitter, laptop computer, etc.) for which future acceptance of GTEM data is sought. Validity of calculated correlation coefficients must be supported by statistical analysis.

2. Acceptance of GTEM data for demonstration of compliance with radiated emission limits will be limited to the general type of equipment under test for which equivalence to open area testing has previously been demonstrated. Any cabling, either external or interconnecting, must be arrayed and terminated identically to the previously submitted equivalence demonstration.

3. In cases of disagreement, final radiated emissions tests performed at an open area test site meeting the requirements of Sections 5.4.1 and 5.4.6 of ANSI C63.4-1992 take precedence.

Questions concerning this Public Notice and acceptable correlation data should be addressed to Thomas Phillips at (301) 725-1585, Ext. 218, Fax No. (301) 344-2050, internet: [tphillips@fcc.gov](mailto:tphillips@fcc.gov).