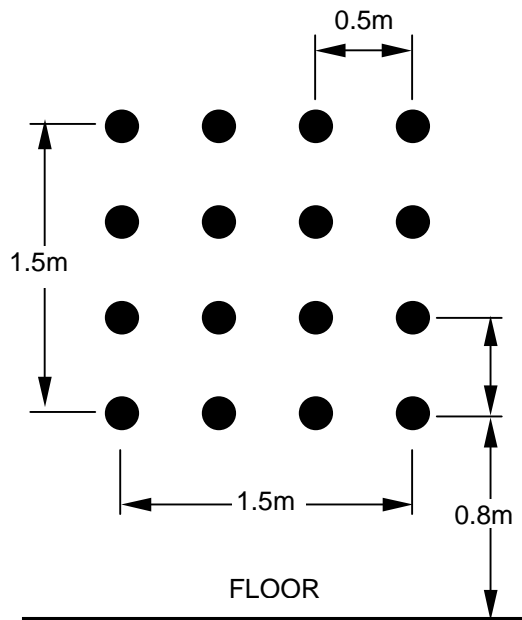




# ANECHOIC CHAMBER ACCEPTANCE TESTS

## Field Uniformity (IEC 61000-4-3/EN 61000-4-3)



R.F.I. Industries performs field uniformity chamber acceptance tests with state of the art, calibrated equipment. Tests can be performed either in the presence of the customer or another EMC expert. If a third party test house is to perform the tests, then the test procedure must be approved by R.F.I. Industries and the customer prior to the tests taking place.

A vertical test plane will be measured at 3 m in the specified frequency range (typically 80 MHz -1 GHz) according to IEC 61000-4-3 (1995).

A grid of 16 points within the 1.5 m x 1.5 m quiet zone is measured at vertical and horizontal polarisations over the prescribed frequency range. The field is considered uniform if its magnitude does not vary over the defined area by more than 0, +6 dB of nominal value for 12 of the 16 test points.

Please note that the frequency range, test plane and test distance can vary from the standard depending on customer requirements.

These tests are conducted by using an isotropic field probe mounted on a support column. A fiber optic cable connects the field probe to a receiver. Test data is collected by a computer with a GPIB bus, which controls the field probe and a signal generator with a 25-watt amplifier. Tests are conducted at a nominal 3 -10 V/m field strength.

The method for carrying out the calibration<sup>1</sup>, based on constant power, is as follows:

- (1) Position the field sensor at one of the sixteen points in the grid.
- (2) Apply a forward power to the transmit antenna so that the field strength obtained is in the range 3 V/m -10 V/m.
- (3) With the same forward power, measure and record the field strength at the remaining 15 points.
- (4) Taking all 16 points into consideration, delete a maximum of 25% (i.e. 4 of the 16) of those with the greatest deviation.
- (5) The remaining points must be within ~3 dB.
- (6) Of the remaining points, take the location with the lowest field strength as reference (this ensures the 0 to +6 dB requirement is met).
- (7) From knowledge of the input power and the field strength, the necessary forward power for the required test field strength can be calculated.
- (8) Repeat steps (1)-(7) in frequency steps of no greater than 10% of the start frequency (and thereafter the preceding frequency) for both horizontal and vertical polarisations. (1% steps are to be used here.)

<sup>1</sup> Per IEC 61000-4-3 (1995). Method subject to change as standards are revised.

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