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Evaluation Methods for Field Strength in Electromagnetic Reverberation Chambers

电磁混响室空间场强评价方法

(English Translation)

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Appendix A. Evaluation Record Reference Format (6)

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Introduction

This specification is compiled in accordance with JJF 1071-2010 "Rules for the Compilation of National Metrology and Calibration Specifications". This specification refers to GB/T 17626.21 "Electromagnetic compatibility test and measurement technology mixing chamber test method" (IEC 61000-4-21) the definition of a reverberation room.

This specification is released for the first time.

Evaluation Method of Spatial Field Strength in Electromagnetic Reverberation Chamber

1 Scope

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This specification stipulates that in the frequency range of.200MHz~18GHz, it is in accordance with GB/T 17626.21-2014 Evaluation of the spatial field strength characteristics of electromagnetic reverberation room (referred to as reverberation room, also called reverberation room) defined by [IEC 61000-4-21] Price method.

2 Reference documents the following documents are cited in this specification.

GB/T 17626.21 Electromagnetic compatibility test and measurement technology mixing chamber test method (IEC 61000-4-21) for dated reference documents, only the dated version applies to this specification; for undated reference documents, the latest version (including all amendments) is applicable to this specification.

3 Term

The following terms apply to this specification.

3.1 field uniformity A description of the uniformity of the electromagnetic field.

3.2 working space workingvolume the field uniformity of the electromagnetic field satisfies the space required by the index.

3.3 Intrinsic field uncertainty in the reverberation room, the randomness of the electromagnetic field contributes to the uncertainty of the field strength measurement.

Note: A lot of reflections will occur when electromagnetic waves propagate in the reverberation room, which makes the electromagnetic field in the reverberation room have a strong randomness, which is obvious.

This affects the accuracy of the field strength measurement in the reverberation room. In order to reduce this randomness, it will be repeated at different stirrer step positions Measure the field strength amplitude and take the average value as the result of the field strength measurement in the reverberation room. Measurement results of each agitator step position the standard deviation of is the inherent field standard uncertainty, which characterizes the degree of dispersion of the average value of the measurement results of each agitator step position.

4 overview

The reverberation chamber is a metal cavity whose inner wall is made of high-conductivity electromagnetic wave reflective material, which is usually equipped with Rotatable high-conductivity stirrer that can affect the electromagnetic environment in the room. Use the rotation of the stirrer in the reverberation room to change the reverberation room in the electromagnetic environment, when measured and averaged on enough stirrer step positions, the obtained field strength is statistically uniform.

Uniform and isotropic. The reverberation chamber is mainly used for radiation emission test, immunity test of electronic equipment and cable, Shielding effectiveness test of connectors and chassis.

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Note: The number of rotations of the stirrer is the average number of field strength measurements, also known as the number of samples in the reverberation room.

5 Metrological characteristics See Table 1 for the limit requirements of the field uniformity of the reverberation room.

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