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Measurement methods of the complex relative permeability and permittivity of noise suppression sheet

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MEASUREMENT METHODS OF THE COMPLEX RELATIVE PERMEABILITY AND PERMITTIVITY OF NOISE SUPPRESSION SHEET

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INTRODUCTION

Noise suppression sheet (NSS) is used near the source of high frequency electromagnetic noise, path of noise propagation and source of emission. It is used like a patch and is different from an electromagnetic wave absorber in free space. IEC 62333-2 specifies five measurement methods in order to estimate the effect of NSS. To evaluate the effect by computer simulation, it is indispensable to know the frequency characteristics of both permeability and permittivity. And to make a rough estimate of the noise suppression effect of NSS, it is useful to understand effective permeability and effective permittivity, which are the permeability and permittivity of an actually used shape.

As most NSSs are flexible, and both complex relative permeability and complex relative permittivity have anisotropy, careful study and understanding of the principles are indispensable for the measurement of the frequency characteristics of permeability and permittivity.

There are various methods to measure permeability and permittivity under the frequency range where NSS is used. This document is intended to be used for the proper selection of the measurement method and the preparation of the test sample to achieve the above purpose when measuring permeability and permittivity, the two parameters which largely influence the noise suppression effect of the NSS.

MEASUREMENT METHODS OF THE COMPLEX RELATIVE PERMEABILITY AND PERMITTIVITY OF NOISE SUPPRESSION SHEET

1 Scope

This document provides guidelines on the methods for measuring the frequency characteristics of permeability and permittivity in the frequency range of 1 MHz to 6 GHz for a noise suppression sheet for each electromagnetic noise countermeasure.

2 Normative references

There are no normative references in this document.