Measurement Techniques for Evaluating Anechoic Chamber

何森鎰、林明星 ; 許崇宜

E-mail: 9419790@mail.dyu.edu.tw

ABSTRACT

In the world, every country has its own regulation for the electric products due to known EMC problems. These products will follow the corresponding regulation, depending on the product type. For example, Information Technology Equipment should meet USA FCC Part 15B or EU EMC Directive, and Communication or Telecommunication products should meet USA Part 15B/C, Part 68 or EU R&TTE, TBR 21 Directive. In order to pass the regulation requirement, the products have to be tested in different sites , e.g., semi-anechoic room (SAR), fully-anechoic room (FAR), or open-area test site (OATS). Measurements on open-area test sites have many known problems. The main problem is often the presence of high-level background noise. Test over a ground plane gives measurement result that can differ extensively from the normal EUT environment. For saving test time and cost, it is good if we can use a fully anechoic room instead of OATS. The background-noise problem can be solved when an anechoic chamber is used. This thesis presents the NSA and the NSTL measurements between OATS and FAR for getting a correction factor. A PDA is used as an example to check whether the measurement results from an FAR (provided correction factors are added) are the same as those from an OATS. Several different analyses can be performed to find the deviation between OATS and FAR.

Keywords : Normalized Site Attenuation (NSA)、Normalized Site Transmission Loss (NSTL)、Open-Area Test Site (OATS)、Semi-anechoic Room (SAR

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