



BSI Standards Publication

Specification for radio disturbance and immunity measuring apparatus and methods —

Part 2-5: In situ measurements of disturbing
emissions produced by physically large
equipment

National foreword

This Published Document is the UK implementation of CISPR/TR 16-2-5:2008.

The UK Committee is concerned that the wording in the Note in Subclause 4.4 restricts the application of the 'far field' formula. In its opinion it does not take account of the possible large size of the equipment under test (EUT), and so could allow inaccurate extrapolation using the formula.

The UK Committee considers that, as well as the scenario outlined in the Note in Subclause 4.4, another scenario is also feasible when applying equation (1) where, for large-size EUTs, equation (1) is only applicable if D_{meas} is in the 'far field'. This is the region where the relative distance from the centre and edge of the EUT causes a phase difference of less than $\pi/8$ radians (22.5 degrees). This boundary is at the 'Rayleigh Distance'.

In this case Equation (1) should only be applied if

$$D_{\text{meas}} > 2D_{\text{source}}^2 / \lambda$$

where;

D_{source} = largest dimension in metres between synchronous noise sources within the EUT as seen from the measuring point.

λ = wavelength = 300/ megahertz

For each EUT the value of D_{source} is to be determined by the test authority and justified in the test report.

When only a small dimension D_{source} is identified, the value used in the above equation should be $D_{\text{source}} = 0.28 * \lambda$. The choice of this dimension ($= \lambda / (2 * \sqrt{\pi})$) will ensure that measurement is only made in the region where the 'far field' component exceeds the reactive 'near field', i.e. D_{meas} is greater than $\lambda / (2 * \pi)$.

The UK participation in its preparation was entrusted by Technical Committee GEL/210, EMC – Policy committee, to Subcommittee GEL/210/12, EMC basic, generic and low frequency phenomena Standardization.

A list of organizations represented on this committee can be obtained on request to its secretary.

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