SLOVENSKI STANDARD
SIST-V CLC Guide 24:2010

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Standardizacija na področju elektromagnetne združljivosti (EMC) za produktne tehnične odbore, ki se ukvarjajo z napravami

Electromagnetic Compatibility (EMC) Standardization for Product Committees concerned with apparatus

Ta slovenski standard je istoveten z: CLC Guide 24:2009

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CENELEC Guide 24

Electromagnetic Compatibility (EMC) Standardization for Product Committees concerned with apparatus

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Foreword

This CENELEC Guide has been prepared by CENELEC Technical Committee TC 210, EMC.

This third edition was approved by the CENELEC Technical Board on 2009-07-01; it supersedes CENELEC Guide 24:2005.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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INTRODUCTION

The Council of the European Communities has adopted the Directive 2004/108/EC (the EMC Directive) concerning Electromagnetic Compatibility (EMC). The Directive concerns both immunity and emission over the whole frequency range.

The European Commission has given CEN, CENELEC and ETSI the task of preparing and harmonising the necessary standards for the implementation of this directive.

These standards are necessary to enable the presumption of conformity with the protection requirements of the EMC Directive set out in Annex I, Article 1 and are designed to satisfy those protection requirements. Conformance to the appropriate standards will facilitate the free movement of apparatus placed on the market within the European Economic Area (EEA).

Generic EMC standards (or product standards i.e. product-family, or dedicated product standards where appropriate) define the emission and immunity test requirements presumed to satisfy the protection requirements of the EMC Directive.

It is recommended that this CENELEC Guide be read in conjunction with IEC Guide 107:2009 "Electromagnetic compatibility - Guide to the drafting of electromagnetic compatibility publications".

1 Purpose

The purpose of this Guide is to

– advise on the application of the generic and basic EMC standards,

– advise on the preparation of product i.e. product-family or dedicated product EMC standards.

It should be noted that certification (*) aspects are not considered in this Guide.

This Guide is primarily intended for product-oriented committees preparing EMC standards, especially in the field of immunity.

(*) NOTE Certification (of conformity) is the action by a third party demonstrating that adequate confidence is provided that a duly identified product, process or service is in conformity with a standard or with other normative documents.

2 Characteristics of EMC standards

To fulfil the tasks related to meeting the requirements of the EMC Directive, it is essential to be able to distinguish between the three following types of EMC standards:

a) basic standards,

b) generic standards,

c) product standards (including product-family standards and dedicated product standards).

The following subclauses define (as precisely as practicable) the characteristics of these different types of standards. A list of basic and generic standards is given in Annex A.

In addition to the above types of standards, there is a need for a further category of documents including guidance documents, codes of practice, etc.

Table 1 gives an overview of the characteristics of the different types of standards.

2.1 Basic EMC standards

Two types of basic EMC standards have been identified:

– those for tests and measurements;

– those related to other aspects.

Basic standards for test and measurement are of particular importance in connection with generic and product standards for conformity assessment purposes.

a) Basic standards for emission and immunity tests and measurements

Contents

These standards give (often separately for each disturbing phenomenon) a definition and description of the phenomenon, detailed test and measurement methods, test instrumentation and basic test set up.

Ranges of test levels (immunity) may be given with respect to the characteristics of measuring equipment or measuring methods.

These standards shall not include prescribed limits and shall not contain detailed performance criteria.

Aims and use

These standards constitute the foundation of EMC-standardisation by defining the detailed test and measurement methods.

It is intended that generic and product (- family) standards should make reference to the basic standards without repeating their detailed contents. As such, a declaration of conformity of products with the basic standards has no significance and therefore basic standards are not included in the list of harmonised standards published in the Official Journal of the European Union (OJEU). This OJEU list will indeed include only those standards permitting the direct presumption of conformity of products with Directive 2004/108/EC.

b) Other types of basic standards and documents

Other types of EMC standards and publications relating to other aspects may be identified as ‘basic’, in as much as they describe the fundamental elements of EMC. For example, they may concern:

– guidelines on mitigation measures, e.g. IEC 61000-5-1 (Technical Report Type 3).

– description and classification of environment, possibly including ranges of environmental and/or compatibility levels, thus constituting an important basis for establishing emission limits and immunity test levels, e.g. IEC 61000-2-5 (still described by IEC as a “Technical Report Type 2”, although this type of publication no longer exists).

2.2 Generic EMC standards

Contents

These standards for emission and immunity define a set of precise EMC requirements (including limits) and indicate which standardised tests are applicable to those products intended to be used in a given environment.

It is intended that generic standards should not include detailed test and measurement methods or test instrumentation but refer for that purpose to basic standards. Generic standards may contain, when necessary, additional information (e.g. choice of one method where several are included in a basic standard).

Generic immunity standards specify a limited number of essential tests, with the objective of achieving a technical/economical optimum, thus avoiding over specifying test requirements. This selection is very critical.

These limited test requirements for conformity with the EMC Directive do not preclude that equipment must be designed to operate normally in its intended EMC environment for all disturbing phenomena specified within this environment.

Generic immunity standards also include those performance criteria of general application which are associated with specific test levels.

Aims and use

The generic standards should be used when no corresponding product standards exist or are deemed necessary.

In addition, generic standards play an essential role in the co-ordination of product standards.

2.3 Product EMC standards

2.3.1 Product-family EMC standards (*)

Contents

The scopes of such standards indicate the particular product-family concerned; these may be broad or narrow.

Product-family standards define specific EMC requirements (immunity and emission) and precise tests for the products within their scopes.

(*) NOTE A product-family covers products with differing detailed functions, but having some common general characteristics. The borderline with dedicated products may sometimes be imprecise as families may be very broad or narrow.

It is intended that

– product-family standards should not normally include detailed measurement methods or test instrumentation, but give reference to basic standards. In exceptional and justified cases, specific test methods or deviations from the tests in the basic standards may be necessary;

– product-family standards include all necessary additional information for the reproducible testing of those products;

– the tests and limits in product-family standards should be co-ordinated with those in the generic standards. Where deviations are necessary, they shall be fully justified (**) and the rationale shall be indicated, preferably within the product-family standards. Deviations may concern the phenomena considered, additional tests or test levels.

(**) NOTE CENELEC TC 210 in their overall EMC co-ordination role should be given the opportunity to comment on the proposed justification prior to the finalisation of the standard.

– product-family standards include more specific and detailed performance criteria than generic standards.

Aims and use

For assessment of compliance with the EMC Directive, product-family standards take precedence over generic standards, either partially or totally according to the EMC domains covered.

It is recommended that an EMC product-family standard forms a separate publication, except when EMC requirements are of such a simple nature that they may be introduced in a product-family standard covering the performance characteristics. In this case the EMC clauses shall be clearly separated and identified.

In safety standards EMC clauses not directly related to safety should preferably not be included.

2.3.2 Dedicated product EMC standards

The same criteria as defined for product-family standards apply. However EMC requirements, instead of constituting separate standards, are frequently included within the general-purpose (performance characteristics) standards dedicated to those specific (dedicated) products. EMC clauses within these general-purpose standards shall be separated and shall be clearly identified. However, having separate EMC standards is to be preferred.

Regarding emission requirements: when a particular product is covered by a product-family standard, the preparation of a dedicated product standard is seldom justified. Deviations from the specified emission limits will be allowed only in exceptional cases, such as where a particular environment allows an increase. CENELEC TC 210 in its co-ordination role will consider any proposed deviations.

Product specific functional characteristics have to be taken into consideration when determining the product's immunity requirements. Dedicated product EMC standards or clauses shall give precise performance criteria.

These product standards are therefore in some cases justifiably different from product-family and generic standards; however they should remain coordinated with them.