



SLOVENSKI STANDARD
SIST EN 300 127:2001
01-februar-2001

9`Y_fca U[bYfbUnXfi y`^j cghfØ A7Ł]b`nUXYj Yj`nj Yn]`n`fUX]`g_]a`gdY_fca`fØFAŁ!
DfYg_i`yUb^Y`cXXUbY[UgYj Ub^Užn] bc`j`Y]_`^`h`Y`ca`i`b]_UW`g_]`g]ghYa`cj

ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Radiated emission testing of physically large telecommunication systems

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: ^{SIST EN 300 127:2001} **EN 300 127 Version 1.2.1**
<https://standards.iteh.ai/catalog/standards/sist/03baca60-b857-4e98-9dfe-01668e7606f7/sist-en-300-127-2001>

ICS:

33.060.20	Sprejemna in oddajna oprema	Receiving and transmitting equipment
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

SIST EN 300 127:2001

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 127:2001

<https://standards.iteh.ai/catalog/standards/sist/03bacae0-b837-4e98-9dfc-01668e7606f7/sist-en-300-127-2001>

EN 300 127 V1.2.1 (1999-04)

European Standard (Telecommunications series)

Electromagnetic compatibility and Radio spectrum Matters (ERM); Radiated emission testing of physically large telecommunication systems

**iTeh STANDARD PREVIEW
(standards.iteh.ai)**

[SIST EN 300 127:2001](https://standards.iteh.ai/catalog/standards/sist/03bacae0-b837-4e98-9dfc-01668e7606f7/sist-en-300-127-2001)

<https://standards.iteh.ai/catalog/standards/sist/03bacae0-b837-4e98-9dfc-01668e7606f7/sist-en-300-127-2001>



Reference

REN/ERM-EMC-112 (16c00ioo.PDF)

Keywords

EMC, emission

ETSI

Postal address

F-06921 Sophia Antipolis Cedex - FRANCE

Office address

650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C

Association à but non lucratif enregistrée à la
Sous-Prefecture de Grasse (06) N° 7803/88

<https://standards.etsi.org/standards-search/> <https://standards.etsi.org/standards-search/01668e7606f7/sist-en-300-127-2001>

Internet

secretariat@etsi.fr

Individual copies of this ETSI deliverable
can be downloaded from

<http://www.etsi.org>

If you find errors in the present document, send your
comment to: editor@etsi.fr

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 1999.
All rights reserved.

Contents

Intellectual Property Rights	4
Foreword	4
1 Scope.....	5
2 References	5
3 Definitions and abbreviations	5
3.1 Definitions	5
3.2 Abbreviations.....	6
4 Requirements	6
4.1 Determination of minimum representative system.....	6
4.2 New functional modules	6
5 General operational conditions.....	6
5.1 Equipment configuration.....	6
5.1.1 Equipment boundary	7
5.2 Equipment cable layout.....	7
5.2.1 Intra-system cabling	7
5.2.2 Interface cabling.....	7
5.2.2.1 Unscreened cable systems	7
5.2.2.1.1 Overhead cable systems.....	7
5.2.2.1.2 Raised floors	8
5.2.2.2 Screened cable systems.....	8
5.3 Exercising equipment.....	8
5.4 Laboratory environment.....	8
6 Test results report	9
7 Test site requirements	9
8 Measurement method.....	10
History.....	15

ITeH STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 127:2001](https://standards.iteh.ai/catalog/standards/sist/03baca00-b837-4e98-9dfe-01668e7606f7/sist-en-300-127-2001)

<https://standards.iteh.ai/catalog/standards/sist/03baca00-b837-4e98-9dfe-01668e7606f7/sist-en-300-127-2001>

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available **free of charge** from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://www.etsi.org/ipr>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document specifies the technical requirements for the radiated emission measurement procedure for physically large systems used within the public telecommunication network. A minimum representative system is defined, which is used for compliance testing of physically large telecommunication systems.

National transposition dates	
Date of adoption of this EN:	26 March 1999
Date of latest announcement of this EN (doa):	30 June 1999
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 December 1999
Date of withdrawal of any conflicting National Standard (dow):	31 December 1999

1 Scope

The present document specifies the technical requirements for the radiated emission measurement procedure for physically large systems used within the telecommunication network, with the exception of radio equipment.

It applies to physically large systems which are comprised of equipment (or systems) requiring installation documentation specific for those sites at which they are to be installed. In order to demonstrate compliance of such systems, a minimum representative system is defined, which is used for compliance testing. Installations built from units of the complying minimum representative system are deemed to satisfy the radiated emission requirements.

The minimum representative system is representative of installed systems in terms of function (which includes at least one of each functional unit type) and electromagnetic radiation characteristics. The minimum representative system is subsequently referred to in the present document as the Equipment Under Test (EUT), to be used for compliance testing.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- iTeH STANDARD PREVIEW
(standards.iteh.ai)
- SIST EN 300 127:2001
- [1] EN 55022 (1987): "Limits and methods of measurement of radio disturbance characteristics of information technology equipment" [sist-en-300-127-2001](#)
- [2] CISPR 16-1: "Specification for radio disturbance and immunity measuring apparatus and methods - Part 1: Radio disturbance and immunity measuring apparatus".
- [3] IEC 60050-161 (1990): "International Electrotechnical Vocabulary. Chapter 161: Electromagnetic compatibility".
-

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following definitions, together with those from IEC 60050-161 [3], apply:

system: set of sub-systems which, when connected together, produce a fully operational product and is intended to be marketed as such

sub-system: grouping of functional units which perform specific functions within the host system and which communicates with other equipment via well-defined interfaces and protocols

functional unit: grouping of electronic hardware which performs specific functions, but may be connected with other functional units to produce the required sub-system

new functional module: replacement and/or addition for any grouping or arrangement of electronic hardware (with its associated mechanical packaging and interconnections), which enhances or improves the system operation

test site: this should be an OATS, with reflecting ground plane, or a suitable chamber with reflecting ground plane

minimum representative system: system which contains the minimum number of units needed to perform all functions specified for the system

cable distribution point: cable distribution point is the interface at which cabling shall be terminated; this unit is the point at which cabling from the system is connected to the cabling from external units

physically large system: group of racks functionally connected to form a commercially specified system, which has a total dimension exceeding that which is practical for testing on a conventional 10 m test site

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

EUT	Equipment Under Test
OATS	Open Area Test Site

4 Requirements

The recommended method for determining the minimum representative system is given here.

4.1 Determination of minimum representative system

The minimum representative system is representative of installed systems in terms of function (which includes at least one of each functional unit type) and electromagnetic radiation characteristics. This shall be equipped to at least the minimum configuration which could be offered for sale for use as an actual system. It excludes any operational equipment connected for the purpose of monitoring or system measurements and which are connected for a temporary period. An example of how the EUT is to be selected is given in figure 1.

Minimum representative systems shall be tested on an Open Area Test Site (OATS) or in a suitable chamber, the limits to be used are those as specified in EN 55022 [1].

4.2 New functional modules

Functional modules used in the system tests may be individually characterized in a defined test facility (see subclause 5.1). This characterization may then be used as a reference to determine the effect of any significant design changes.

Using this technique, the performance of new functional modules may be assessed and the test plan written in such a way as to demonstrate that the representative system continues to conform when a functional module has been replaced by a new functional module. The results obtained for new functional modules shall be compared with those from the previous module.

The manufacturer shall clearly demonstrate and document the reasons why a new functional module does not require a complete representative system re-test. If the module constitutes a major change to the system configuration, a complete representative system test shall be performed.

5 General operational conditions

5.1 Equipment configuration

The EUT shall conform to the manufacturer's normal installation practice. There exists for each EUT a minimum set of interface lines which is required for the operation of the system and this number shall be defined for each EUT and identified in the test report.

The sources of maximum emission shall be identified by measuring each functional unit on an individual basis and, where applicable, its position in a rack.

The EUT shall then be assembled in such a way that emissions are maximized within any limitations imposed by normal installation practice.

5.1.1 Equipment boundary

For the purpose of defining the system boundary from which the test distance is taken, the equipment boundary shall be the straight line envelope around the EUT; this includes the cables specified for attachment to the EUT for the purpose of test. Measurement distances are to be taken from this line.

5.2 Equipment cable layout

5.2.1 Intra-system cabling

All cables internal to the system, and used for its operation, shall be connected and be of such a length and type required for the normal operation of the system. These shall be routed in accordance with the relevant system installation instructions, such that these are typical of an installed system.

The system shall normally be configured in accordance with EN 55022 [1] requirements for floor standing equipment. An alternative set-up using a raised floor is acceptable for systems operated in this way.

If raised floor systems are to be characterized as the worst case and used for testing, and if the inter-unit cable routing is into the raised floor system, the effect of the raised floor system shall be examined. The raised floor shall be left in place if it forms part of the system screen, but where the raised floor is not intended to be used as a screen, then in order to prevent accidental screening of emissions, the floor panels shall be removed for the duration of the test.

5.2.2 Interface cabling

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Cables between the system, the distribution point and external units, shall be of the type as specified by the system supplier or as detailed by customer requirements, and shall follow the relevant system installation practice. Care shall be taken to ensure that noise from the test and exercising equipment does not contribute to the emissions from the representative system. The method of orientating and terminating the cables shall be noted in the test report.

The emission contributions from the system, cables and distribution point (where all of these elements are involved) are difficult to separate; there are two cases to be considered:

- 1) unscreened cable systems;
- 2) screened cable systems.

Screening is achieved by one of two methods:

- a) by use of screened cabling;
- b) by the use of a screened floor or ducted systems in which unscreened cabling is run.

Measurement of these installation practices is performed as described in subclauses 5.2.2.1 and 5.2.2.2.

5.2.2.1 Unscreened cable systems

Wherever the distribution point is located, measurement shall be made using a length of unscreened cabling configured as described in subclauses 5.2.2.1.1 and 5.2.2.1.2. Beyond this minimum length, the cabling shall be taken off the measurement site below the ground plane to the exercising equipment. Where this is not practicable, the cabling may run in screened sleeving which is bonded to the measurement site ground plane.

Two types of cable installation practice shall be considered.

5.2.2.1.1 Overhead cable systems

An overhead cable system is defined as one where cables are routed above the equipment. On exiting from the EUT, all cabling shall run perpendicularly from the EUT in the horizontal plane for 1,5 m, before dropping to the ground plane.