SLOVENSKI STANDARD

SIST EN 61967-4:2005

december 2005

Integrirana vezja – Meritve elektromagnetnega sevanja, od 150 kHz do 1 GHz – 4. del: Meritve prevajanega sevanja – Metoda neposrednega sklopa 1 ohm/150 ohmov (IEC 61967-4:2002)

Integrated circuits – Measurement of electromagnetic emissions, 150 kKHz to 1 GHz – Part 4: Measurement of conducted emissions – 1 ohm/150 ohm direct coupling method (IEC 61967-4:2002)

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ICS 31.200

Referenčna številka
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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61967-4

June 2002

ICS 31.200

English version

Integrated circuits - Measurement of electromagnetic emissions, 150 kHz to 1 GHz Part 4: Measurement of conducted emissions - 1 ohm/150 ohm direct coupling method

(IEC 61967-4:2002)

Circuits intégrés -
Mesure des émissions électromagnétiques, 150 kHz à 1 GHz
Partie 4: Mesure des émissions conduites -
Méthode par couplage direct
1 ohm/150 ohm
(CEI 61967-4:2002)

Integrierte Schaltungen -
Messung von elektromagnetischen Aussendungen im Frequenzbereich von 150 kHz bis 1 GHz
Teil 4: Messung der leitungsgeführten Aussendungen -
Messung mit direkter
1 Ohm/150 Ohm-Kopplung
(IEC 61967-4:2002)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

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Ref. No. EN 61967-4:2002 E

Foreword

The text of document 47A/636/FDIS, future edition 1 of IEC 61967-4, prepared by SC 47A, Integrated circuits, of IEC TC 47, Semiconductor devices, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61967-4 on 2002-06-01.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2003-03-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2005-06-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes A and ZA are normative and annexes B, C, D and E are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61967-4:2002 was approved by CENELEC as a European Standard without any modification.

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 61000-4-6	- [1]	Electromagnetic compatibility (EMC) Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	1996 [2]
IEC 61967-1	- [1]	Integrated circuits - Measurement of electromagnetic emissions, 150 kHz to 1 GHz Part 1: General conditions and definitions	EN 61967-1	2002 [2]
CISPR 16-1	- [1]	Specification for radio disturbance and immunity measuring apparatus and methods Part 1: Radio disturbance and immunity measuring apparatus	-	-

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[1] Undated reference.

[2] Valid edition at date of issue.

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NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
61967-4

Première édition
First edition
2002-04

Circuits intégrés – Mesure des émissions électromagnétiques, 150 kHz à 1 GHz –

Partie 4:
Mesure des émissions conduites – Méthode par couplage direct 1 Ω/150 Ω

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Integrated circuits – Measurement of electromagnetic emissions, 150 kHz to 1 GHz –

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Part 4:
Measurement of conducted emissions – 1 Ω/150 Ω direct coupling method

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International Electrotechnical Commission
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTEGRATED CIRCUITS – MEASUREMENT OF ELECTROMAGNETIC EMISSIONS, 150 kHz TO 1 GHz –

Part 4: Measurement of conducted emissions – 1 Ω/150 Ω direct coupling method

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
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International Standard IEC 61967-4 has been prepared by subcommittee 47A: Integrated circuits, of IEC technical committee 47: Semiconductor devices.

The text of this standard is based on the following documents:

FDIS	Report on voting
47A/636/FDIS	47A/647/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annex A forms an integral part of this standard.

Annexes B, C, D and E are for information only.

IEC 61967 consists of the following parts, under the general title *Integrated circuits – Measurement of electromagnetic emissions, 150 kHz to 1 GHz:*

Part 1: General conditions and definitions

Part 2: Measurement of radiated emissions – TEM-cell method [1]

Part 3: Measurement of radiated emissions – Surface scan method [1]

Part 4: Measurement of conducted emissions – 1 Ω/150 Ω direct coupling method

Part 5: Measurement of conducted emissions – Workbench Faraday cage method [2]

Part 6: Measurement of conducted emissions – Magnetic probe method [2]

The committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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[1] Under consideration

[2] To be published

INTEGRATED CIRCUITS – MEASUREMENT OF ELECTROMAGNETIC EMISSIONS, 150 kHz TO 1 GHz –

Part 4: Measurement of conducted emissions – 1 Ω/150 Ω direct coupling method

1 Scope

This part of IEC 61967 specifies a method to measure the conducted electromagnetic emission (EME) of integrated circuits by direct radio frequency (RF) current measurement with a 1 Ω resistive probe and RF voltage measurement using a 150 Ω coupling network. These methods guarantee a high degree of repeatability and correlation of EME measurements.

IEC 61967-1 specifies general conditions and definitions of the test methods.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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IEC 61000-4-6, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

SIST EN 61967-4:2003
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IEC 61967-1, *Integrated circuits – Measurement of electromagnetic emissions, 150 kHz to 1 GHz – Part 1: General conditions and definitions*

CISPR 16-1, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1: Radio disturbance and immunity measuring apparatus*

3 Definitions

See IEC 61967-1.

4 General

4.1 Measurement basics

The maximum tolerated emission level from an integrated circuit (IC) depends on the permitted maximum emission level of the electronic system, which includes the IC, and also on the immunity level of other parts of the electronic system itself (so called inherent EMC). The value of this emission level is dependent on system and application specific (ambient) parameters. To characterise ICs, i.e. to provide typical EME values for a data sheet, a simple measurement procedure and non-resonant measurement set-ups are required to guarantee a high degree of repeatability. The following describes the basis of this test procedure.