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Modeli integriranih vezij za vedenjsko simulacijo pri EMI - 2.del: Modeli integriranih vezij za vedenjsko simulacijo pri EMI - Vodeni model oddajanja ICEM-CE, ICEM (IEC 62433-2:2008)

EMC IC modelling - Part 2: Models of Integrated Circuits for EMI behavioural simulation - Conducted Emissions modelling (ICEM-CE) (IEC 62433-2:2008)

EMV-IC-Modellierung - Teil 2: Modelle integrierter Schaltungen für die Simulation des Verhaltens bei elektromagnetischer Beeinflussung - Modellierung leitungsgeführter Aussendungen (ICEM-CE) (IEC 62433-2:2008)

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Compatibilité électromagnétique (CEM) - Partie 2 : Modèles de circuits intégrés pour la simulation du comportement lors de perturbations électromagnétiques - Modélisation des émissions conduites (ICEM-CE) (CEI 62433-2:2008)

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EMC IC modelling - Part 2: Models of integrated circuits for EMI behavioural simulation - Conducted emissions modelling (ICEM-CE)

(IEC 62433-2:2008)

Compatibilité électromagnétique (CEM) -
Partie 2: Modèles de circuits intégrés
pour la simulation du comportement
lors de perturbations électromagnétiques -
Modélisation des émissions conduites
(ICEM-CE)
(CEI 62433-2:2008)

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European Committee for Electrotechnical Standardization
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Foreword

The text of document 47A/794/FDIS, future edition 1 of IEC 62433-2, 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 62433-2 on 2009-12-01.

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)	2010-09-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-12-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62433-2:2008 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

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.

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 61967	Series	Integrated circuits - Measurement of electromagnetic emissions, 150 kHz to 1 GHz	EN 61967	Series
IEC 61967-4	-	Integrated circuits - Measurement of electromagnetic emissions, 150 kHz to 1 GHz - Part 4: Measurement of conducted emissions - 1 ohm/150 ohm direct coupling method	EN 61967-4	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EMC IC MODELLING –

Part 2: Models of integrated circuits for EMI behavioural simulation – Conducted emissions modelling (ICEM-CE)

FOREWORD

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International Standard IEC 62433-2 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/794/FDIS	47A/799/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 2.

A list of all the parts in the IEC 62433 series, under the general title *EMC IC modelling*, can be found on the IEC website.

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The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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- replaced by a revised edition, or
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A bilingual version of this publication may be issued at a later date.

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EMC IC MODELLING –

Part 2: Models of integrated circuits for EMI behavioural simulation – Conducted emissions modelling (ICEM-CE)

1 Scope

This part of IEC 62433 specifies macro-models for ICs to simulate conducted electromagnetic emissions on a printed circuit board. The model is commonly called Integrated Circuit Emission Model - Conducted Emission (ICEM-CE).

The ICEM-CE model can also be used for modelling an IC-die, a functional block and an Intellectual Property block (IP).

The ICEM-CE model can be used to model both digital and analogue ICs.

Basically, conducted emissions have two origins:

- conducted emissions through power supply terminals and ground reference structures;
- conducted emissions through input/output (I/O) terminals.

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The ICEM-CE model addresses those two types of origins in a single approach.

This standard defines structures and components of the macro-model for EMI simulation taking into account the IC's internal activities.

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This standard gives general data, which can be implemented in different formats or languages such as IBIS, IMIC, SPICE, VHDL-AMS and Verilog. SPICE is however chosen as default simulation environment to cover all the conducted emissions.

This standard also specifies requirements for information that shall be incorporated in each ICEM-CE model or component part of the model for model circulation, but description syntax is not within the scope of this standard.

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.

IEC 61967 (all parts), *Integrated Circuits – Measurement of electromagnetic emissions, 150 KHz to 1 GHz*

IEC 61967-4, *Integrated circuits – Measurement of electromagnetic emissions, 150 kHz to 1 GHz – Part 4: Measurement of conducted emissions – 1 Ω/150 Ω direct coupling method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.