



BSI Standards Publication

## EMC IC modelling

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Part 1: General modelling framework

## National foreword

This British Standard is the UK implementation of EN IEC 62433-1:2019. It is identical to IEC 62433-1:2019. It supersedes DD IEC/TS 62433-1:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/47, Semiconductors.

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

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© The British Standards Institution 2019  
Published by BSI Standards Limited 2019

ISBN 978 0 580 98244 6

ICS 31.200

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2019.

### Amendments/corrigenda issued since publication

Date	Text affected
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EUROPEAN STANDARD

**EN IEC 62433-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2019

ICS 31.200

English Version

**EMC IC modelling - Part 1: General modelling framework  
(IEC 62433-1:2019)**

Modèles de circuits intégrés pour la CEM - Partie 1: Cadre  
de modèle général  
(IEC 62433-1:2019)

EMV-IC-Modellierung - Teil 1: Allgemeine  
Modellierungsstruktur  
(IEC 62433-1:2019)

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## **European foreword**

The text of document 47A/1042/CDV, future edition 1 of IEC 62433-1, prepared by SC 47A "Integrated circuits" of IEC/TC 47 "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62433-1:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-01-12
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-04-12

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In the official version, for Bibliography, the following note has to be added for the standard indicated:

CISPR 17      NOTE      Harmonized as EN 55017

**Annex ZA**  
(normative)

**Normative references to international publications  
with their corresponding European publications**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62433	series	EMC IC modelling	EN 62433	series
ISO 8879	-	Information processing - Text and office systems - Standard Generalized Markup Language (SGML)	-	-
ANSI INCITS 4	1986	Information Systems - Coded Character Sets - 7-Bit American National Standard Code for Information Interchange (7-Bit ASCII)	-	-

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**EMC IC MODELLING –****Part 1: General modelling framework**

## FOREWORD

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International Standard IEC 62433-1 has been prepared by subcommittee 47A: Integrated circuits, of IEC technical committee 47: Semiconductor devices.

IEC 62433-1 cancels and replaces IEC TS 62433-1 published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC TS 62433 1:2011:

Incorporation of a data exchange format for an integrated circuit's model representation.

The text of this International Standard is based on the following documents:

CDV	Report on voting
47A/1042/CDV	47A/1055/RVC

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

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## EMC IC MODELLING –

### Part 1: General modelling framework

#### 1 Scope

This part of IEC 62433 specifies the framework and methodology for EMC IC macro-modelling. Terms that are commonly used in IEC 62433 (all parts), different modelling approaches, requirements and data-exchange format for each model category that is standardized in this series are defined in this document.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 62433 (all parts), *EMC IC modelling*

ISO 8879, *Information processing – Text and office systems – Standard Generalized Markup Language (SGML)*

ANSI INCITS 4:1986, *Information Systems – Coded Character Sets – 7-Bit American National Standard Code for Information Interchange (7-Bit ASCII)*

#### 3 Terms, definitions, abbreviated terms and conventions

##### 3.1 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

##### 3.1.1

###### ICEM-CE

Integrated Circuit Emission Model – Conducted Emissions  
macro-model of an integrated circuit (IC) to simulate the conducted electromagnetic emissions

Note 1 to entry: An ICEM-CE macro-model can be used for modelling an IC-die, a functional block and an Intellectual Property (IP) block.

##### 3.1.2

###### ICEM-RE

Integrated Circuit Emission Model – Radiated Emissions  
macro-model of an integrated circuit (IC) to simulate the radiated electromagnetic emissions