

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

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

**Modèles de circuits intégrés pour la CEM –
Partie 1: Cadre de modèle général**



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX

ICS 31.200

ISBN 978-2-88912-473-2

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

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IEC 62433-1, which is a technical specification, has been prepared by subcommittee 47A: Integrated circuits, of IEC technical committee 47: Semiconductor devices.

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

Enquiry draft	Report on voting
47A/840/DTS	47A/850A/RVC

Full information on the voting for the approval of this technical specification 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 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 publication will remain unchanged until the stability 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

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

The International Standards of IEC 62433 series provide specifications for EMC IC modelling. EMC IC model is the model of integrated circuits for electro-magnetic compatibility.

IC models that are built in conformity with these International Standards can be applied to simulations for EMC and/or evaluations of EMI (electro-magnetic interference) as well as EMS (electro-magnetic susceptibility) of electronic systems.

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EMC IC MODELLING –

Part 1: General modelling framework

1 Scope

This part of the IEC 62433 series provides specifications for model-categories of EMC IC modelling, definitions of terms that are commonly used in IEC 62433 series, modelling approaches that can be used, and requirements for each modelling that is standardized in this series.

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 60050-131, *International Electrotechnical Vocabulary (IEV) – Chapter 131: Circuit theory*

IEC 60050-161, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-131, IEC 60050-161 and the following apply.

3.1

reference node

node of a network where the voltages of other nodes, which belong to the network, are determined by reference to the node

NOTE In many cases the voltage of the reference node is set as zero for descriptive purposes.

3.2

reference terminal

terminal of a circuit block where the voltages of other terminals, which belong to the block, are determined by reference to the terminal

3.3

internal activity

IA

component of an IC model represented by a current or voltage source, which originates in activity of active devices in an IC or in a portion of the IC

NOTE IA is applicable for both analogue and digital circuitry.

3.4

passive distribution network

PDN

component of an IC model that represents the characteristics of propagation path of electromagnetic noises such as power distribution network