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**EMC IC modelling –
Part 4: Models of integrated circuits for RF immunity behavioural simulation –
Conducted immunity modelling (ICIM-CI)**

**Modèles de circuits intégrés pour la CEM –
Partie 4: Modèles de circuits intégrés pour la simulation du comportement
d'immunité aux radiofréquences – Modélisation de l'immunité conduite (ICIM-CI)**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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ICS 31.200

ISBN 978-2-8322-3417-4

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CONTENTS

FOREWORD.....	7
1 Scope.....	9
2 Normative references.....	9
3 Terms, definitions, abbreviations and conventions.....	10
3.1 Terms and definitions.....	10
3.2 Abbreviations.....	11
3.3 Conventions.....	11
4 Philosophy.....	12
5 ICIM-CI model description.....	12
5.1 General.....	12
5.2 PDN description.....	14
5.3 IBC description.....	15
5.4 IB description.....	16
6 CIML format.....	17
6.1 General.....	17
6.2 CIML structure.....	18
6.3 Global keywords.....	19
6.4 Header section.....	19
6.5 Lead definitions.....	20
6.6 SPICE macro-models.....	21
6.7 Validity section.....	23
6.7.1 General.....	23
6.7.2 Attribute definitions.....	23
6.8 PDN.....	25
6.8.1 General.....	25
6.8.2 Attribute definitions.....	26
6.8.3 PDN for a single-ended input or output.....	29
6.8.4 PDN for a differential input.....	36
6.8.5 PDN multi-port description.....	39
6.9 IBC.....	40
6.9.1 General.....	40
6.9.2 Attribute definitions.....	41
6.10 IB.....	42
6.10.1 General.....	42
6.10.2 Attribute definitions.....	43
6.10.3 Description.....	48
7 Extraction.....	50
7.1 General.....	50
7.2 Environmental extraction constraints.....	50
7.3 PDN extraction.....	51
7.3.1 General.....	51
7.3.2 <i>S</i> -/ <i>Z</i> -/ <i>Y</i> -parameter measurement.....	51
7.3.3 RFIP technique.....	51
7.4 IB extraction.....	52
7.4.1 General.....	52
7.4.2 Direct RF power injection test method.....	52

7.4.3	RF Injection probe test method.....	54
7.4.4	IB data table	55
7.5	IBC	56
8	Validation of ICIM-CI hypotheses	56
8.1	General.....	56
8.2	Linearity.....	57
8.3	Immunity criteria versus transmitted power	58
9	Model usage.....	59
	Annex A (normative) Preliminary definitions for XML representation.....	61
A.1	XML basics	61
A.1.1	XML declaration	61
A.1.2	Basic elements	61
A.1.3	Root element	61
A.1.4	Comments	62
A.1.5	Line terminations	62
A.1.6	Element hierarchy	62
A.1.7	Element attributes.....	62
A.2	Keyword requirements.....	62
A.2.1	General	62
A.2.2	Keyword characters	63
A.2.3	Keyword syntax.....	63
A.2.4	File structure.....	63
A.2.5	Values	65
	Annex B (informative) ICIM-CI example with disturbance load.....	68
	Annex C (informative) Conversions between parameter types	69
C.1	General.....	69
C.2	Single-ended input or output	69
C.3	Differential input or output	70
	Annex D (informative) Example of ICIM-CI macro-model in CIML format	74
	Annex E (normative) CIML Valid keywords and usage	79
E.1	Root element keywords	79
E.2	File header keywords	79
E.3	<i>Validity</i> section keywords	81
E.4	Global keywords	81
E.5	<i>Lead</i> keyword.....	82
E.6	<i>Lead_definitions</i> section attributes.....	82
E.7	<i>Macromodels</i> section attributes	83
E.8	<i>Pdn</i> section keywords.....	84
E.8.1	<i>Lead</i> element keywords.....	84
E.8.2	<i>Netlist</i> section keywords.....	86
E.9	<i>Ibc</i> section keywords	87
E.9.1	<i>Lead</i> element keywords.....	87
E.9.2	<i>Netlist</i> section keywords.....	89
E.10	<i>Ib</i> section keywords.....	89
E.10.1	<i>Lead</i> element keywords.....	89
E.10.2	<i>Max_power_level</i> section keywords	91
E.10.3	<i>Voltage</i> section keywords.....	91
E.10.4	<i>Current</i> section keywords	93

E.10.5 *Power* section keywords 94

E.10.6 *Test_criteria* section keywords 95

Annex F (informative) PDN impedance measurement methods using vector network analyzer 97

 F.1 General..... 97

 F.2 Conventional one-port method 97

 F.3 Two-port method for low impedance measurement 97

 F.4 Two-port method for high impedance measurement 98

Annex G (informative) RFIP measurement method description 99

 G.1 General..... 99

 G.2 Obtaining immunity parameters 99

Annex H (informative) Immunity simulation with ICIM model based on pass/fail test 101

 H.1 ICIM-CI macro-model of a voltage regulator IC 101

 H.1.1 General 101

 H.1.2 PDN extraction..... 101

 H.1.3 IB extraction 101

 H.1.4 SPICE-compatible macro-model 102

 H.2 Application level simulation and failure prediction 102

Annex I (informative) Immunity simulation with ICIM model based on non pass/fail test 104

Bibliography 106

Figure 1 – Example of ICIM-CI model structure..... 13

Figure 2 – Example of an ICIM-CI model of an electronic board 14

Figure 3 – Example of an IBC network..... 16

Figure 4 – ICIM-CI model representation with different blocks..... 16

Figure 5 – CIML inheritance hierarchy 18

Figure 6 – Example of a netlist file defining a sub-circuit..... 22

Figure 7 – PDN electrical schematic 29

Figure 8 – PDN represented as a one-port black-box 29

Figure 9 – PDN represented as S-parameters in Touchstone format 32

Figure 10 – PDN represented as two-port S-parameters in Touchstone format 33

Figure 11 – Example structure for defining the PDN using circuit elements..... 34

Figure 12 – Example of a single-ended PDN Netlist main circuit definition..... 35

Figure 13 – Example of a single-ended PDN Netlist with both sub-circuit and main circuit definition 35

Figure 14 – Differential input schematic..... 37

Figure 15 – PDN represented as a two-port black-box 37

Figure 16 – PDN data format for differential input or output..... 37

Figure 17 – Differential inputs of an operational amplifier example 39

Figure 18 – ICIM-CI Model for a 74HC08 component 40

Figure 19 – Example IB file obtained from DPI measurement 50

Figure 20 – Test setup of the DPI immunity measurement method as specified in IEC 62132-4 52

Figure 21 – Principle of single and multi-pin DPI..... 53

Figure 22 – Electrical representation of the DPI test setup 54

Figure 23 – Test setup of the RFIP measurement method derived from the DPI method 55

Figure 24 – Example setup used for illustrating ICIM-CI hypotheses	57
Figure 25 – Example of linearity assumption validation	58
Figure 26 – Example of transmitted power criterion validation	59
Figure 27 – Use of the ICIM-CI macro-model for simulation	59
Figure A.1 – Multiple XML (CIML) files	64
Figure A.2 – XML files with data files (*.dat)	64
Figure A.3 – XML files with additional files	65
Figure B.1 – ICIM-CI description applied to an oscillator stage for extracting IB.....	68
Figure C.1 – Single-ended DI	69
Figure C.2 – Differential DI	70
Figure C.3 – Two-port representation of a differential DI	70
Figure C.4 – Simulation of common-mode injection on a differential DI based on DPI	72
Figure C.5 – Equivalent common-mode input impedance of a differential DI	72
Figure C.6 – Determination of transmitted power for a differential DI	72
Figure D.1 – Test setup on an example LIN transceiver	74
Figure D.2 – PDN data in touchstone format (s2p), data measured using VNA	76
Figure D.3 – PDN data of leads 6 (LIN) and 7 (VCC)	77
Figure D.4 – IB data in ASCII format (.txt), data measured using DPI method – Injection on VCC pin	77
Figure D.5 – IB data for injection on VCC pin.....	78
Figure F.1 – Conventional one-port S-parameter measurement.....	97
Figure F.2 – Two-port method for low impedance measurement.....	98
Figure F.3 – Two-port method for high impedance measurement.....	98
Figure G.1 – Test setup of the RFIP measurement method derived from DPI method	99
Figure G.2 – Principle of the RFIP measurement method.....	99
Figure H.1 – Electrical schematic for extracting the voltage regulator's ICIM-CI.....	101
Figure H.2 – ICIM-CI extraction of the voltage regulator example	102
Figure H.3 – Example of a SPICE-compatible ICIM-CI macro-model of the voltage regulator.....	102
Figure H.4 – Example of a board level simulation on the voltage regulator's ICIM-CI with PCB model and other components including parasitic elements	103
Figure H.5 – Incident power as a function of frequency that is required to create a defect with a 10 nF filter.....	103
Figure I.1 – Example of an IB file for a given failure criterion	104
Figure I.2 – Comparison of simulated transmitted power and measured immunity behavior	105
Table 1 – Attributes of <i>Lead</i> keyword in the <i>Lead_definitions</i> section	20
Table 2 – Compatibility between the <i>Mode</i> and <i>Type</i> fields for correct CIML annotation.....	20
Table 3 – <i>Subckt</i> definition.....	21
Table 4 – Definition of the <i>Validity</i> section	23
Table 5 – Definition of the <i>Lead</i> keyword for <i>Pdn</i> section	25
Table 6 – Valid data formats and their default units in the <i>Pdn</i> section	28
Table 7 – Valid file extensions in the <i>Pdn</i> section	28
Table 8 – Valid fields of the <i>Lead</i> keyword for single-ended PDN	30

Table 9 – <i>Netlist</i> definition.....	34
Table 10 – Valid fields of the <i>Lead</i> keyword for differential PDN.....	38
Table 11 – Differences between the <i>Pdn</i> and <i>Ibc</i> section fields	41
Table 12 – Valid fields of the <i>Lead</i> keyword for IBC definition	42
Table 13 – Definition of the <i>Lead</i> keyword in <i>Ib</i> section.....	43
Table 14 – <i>Max_power_level</i> definition	44
Table 15 – <i>Voltage</i> , <i>Current</i> and <i>Power</i> definition	45
Table 16 – <i>Test_criteria</i> definition	45
Table 17 – Default values of <i>Unit_voltage</i> , <i>Unit_current</i> and <i>Unit_power</i> tags as a function of data format	48
Table 18 – Valid file extensions in the <i>Ib</i> section.....	48
Table 19 – Example of IB table pass/fail criteria	56
Table A.1 – Valid logarithmic units	66
Table C.1 – Single-ended parameter conversion.....	70
Table C.2 – Differential parameter conversion	71
Table C.3 – Power calculation	73
Table E.1 – Root element keywords	79
Table E.2 – <i>Header</i> section keywords.....	80
Table E.3 – <i>Validity</i> section keywords	81
Table E.4 – Global keywords.....	82
Table E.5 – <i>Lead</i> element definition	82
Table E.6 – <i>Lead_definitions</i> section keywords.....	83
Table E.7 – <i>Macromodels</i> section keywords	83
Table E.8 – <i>Lead</i> element keywords in the <i>Pdn</i> section.....	84
Table E.9 – <i>Netlist</i> section keywords	87
Table E.10 – <i>Lead</i> element keywords in the <i>Ibc</i> section	87
Table E.11 – <i>Lead</i> element keywords in the <i>Ib</i> section.....	90
Table E.12 – <i>Max_power_level</i> section keywords	91
Table E.13 – <i>Voltage</i> section keywords	92
Table E.14 – <i>Current</i> section keywords	93
Table E.15 – <i>Power</i> section keywords	94
Table E.16 – <i>Test_criteria</i> section keywords.....	96

INTERNATIONAL ELECTROTECHNICAL COMMISSION

EMC IC MODELLING –

Part 4: Models of integrated circuits for RF immunity behavioural simulation – Conducted immunity modelling (ICIM-CI)

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FDIS	Report on voting
47A/988/FDIS	47A/989/RVD

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EMC IC MODELLING –

Part 4: Models of integrated circuits for RF immunity behavioural simulation – Conducted immunity modelling (ICIM-CI)

1 Scope

This part of IEC 62433 specifies a flow for deriving a macro-model to allow the simulation of the conducted immunity levels of an integrated circuit (IC). This model is commonly called Integrated Circuit Immunity Model – Conducted Immunity, ICIM-CI. It is intended to be used for predicting the levels of immunity to conducted RF disturbances applied on IC pins.

In order to evaluate the immunity threshold of an electronic device, this macro-model will be inserted in an electrical circuit simulation tool.

This macro-model can be used to model both analogue and digital ICs (input/output, digital core and supply). This macro-model does not take into account the non-linear effects of the IC.

The added value of ICIM-CI is that it could also be used for immunity prediction at board and system level through simulations.

This part of IEC 62433 has two main parts:

- the electrical description of ICIM-CI macro-model elements;
- a universal data exchange format called CIML based on XML. This format allows ICIM-CI to be encoded in a more useable and generic form for immunity simulation.

2 Normative references

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

IEC 62132-1, *Integrated circuits – Measurement of electromagnetic immunity – Part 1: General conditions and definitions*

IEC 62132-4, *Integrated circuits – Measurement of electromagnetic immunity 150 kHz to 1 GHz – Part 4: Direct RF power injection method*

IEC 62433-2, *EMC IC modelling – Part 2: Models of integrated circuits for EMI behavioural simulation – Conducted emissions modelling (ICEM-CE)*

ISO 8879: 1986, *Information processing – Text and office systems – Standard Generalized Markup Language (SGML)*

ISO/IEC 646: 1991, *Information technology – ISO 7-bit coded character set for information interchange (7-Bit ASCII)*

CISPR 17, *Methods of measurement of the suppression characteristics of passive EMC filtering devices*