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Passive RF and microwave devices, intermodulation level measurement – Part 3: Measurement of passive intermodulation in coaxial connectors

INTERNATIONAL
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COMMISSION

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CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms, definitions and abbreviated terms	5
3.1 Terms and definitions	5
3.2 Abbreviated terms	5
4 Test method	6
4.1 Samples for testing	6
4.2 Connection of unit	6
4.3 Set-up 1 – Fixed frequency test considerations	6
4.4 Set-up 2 considerations	6
4.5 Impacts	6
5 Report	7
Annex A (normative) Calculating equivalent impact energy	10
Annex B (normative) Calculating impact energy for different connector types	11
Figure 1 – Impact test illustration	8
Figure 2 – Impact device	8
Table 1 – Impact information for some popular connectors	7
Table A.1 – Estimated mass of various diameter steel balls	10
Table B.1 – Impact energy calculation for RF connector type	11

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PASSIVE RF AND MICROWAVE DEVICES,
INTERMODULATION LEVEL MEASUREMENT –****Part 3: Measurement of passive intermodulation in coaxial connectors****FOREWORD**

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IEC 62037-3 has been prepared by IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This second edition cancels and replaces the first edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) impact method changed to utilize a steel ball rather than a brass rod;
- b) impact energy required to test each connector type added;
- c) method added to calculate impact energy for connector types not listed in the document.

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

Draft	Report on voting
46/836/FDIS	46/857/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all the parts in the IEC 62037 series, published under the general title *Passive RF and microwave devices, intermodulation level measurement* can be found on the IEC website.

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PASSIVE RF AND MICROWAVE DEVICES, INTERMODULATION LEVEL MEASUREMENT –

Part 3: Measurement of passive intermodulation in coaxial connectors

1 Scope

This part of IEC 62037 defines the impact test on coaxial connectors to evaluate their robustness against weak connections and particles inside the connector, as independently as possible from the effects of cable PIM (passive intermodulation).

For other connectors (e.g. panel mounted connectors), the cable can be replaced by an adequate transmission-line (e.g. airline, stripline). In order to evaluate the effects of mechanical stresses on the connectors, a series of impacts is applied to the connectors while measuring the PIM.

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 62037-1, *Passive RF and microwave devices, intermodulation level measurement – Part 1: General requirements and measuring methods*¹

IEC 62037-4, *Passive RF. and microwave devices, intermodulation level measurement – Part 4: Measurement of passive intermodulation in coaxial cables*²

¹~~—To be published.~~

²~~—To be published.~~

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Passive RF and microwave devices, intermodulation level measurement –
Part 3: Measurement of passive intermodulation in coaxial connectors**

**Dispositifs RF et à micro-ondes passifs, mesure du niveau d'intermodulation –
Partie 3: Mesure de l'intermodulation passive dans les connecteurs coaxiaux**

CONTENTS

FOREWORD	3
1 Scope	5
2 Normative references	5
3 Terms, definitions and abbreviated terms	5
3.1 Terms and definitions	5
3.2 Abbreviated terms	5
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4.1 Samples for testing	6
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4.3 Set-up 1 – Fixed frequency test considerations	6
4.4 Set-up 2 considerations	6
4.5 Impacts	6
5 Report	7
Annex A (normative) Calculating equivalent impact energy	8
Annex B (normative) Calculating impact energy for different connector types	9
Figure 1 – Impact test illustration	7
Table 1 – Impact information for some popular connectors	7
Table A.1 – Estimated mass of various diameter steel balls	8
Table B.1 – Impact energy calculation for RF connector type	9

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SOMMAIRE

AVANT-PROPOS	11
1 Domaine d'application	13
2 Références normatives	13
3 Termes, définitions et termes abrégés	13
3.1 Termes et définitions	13
3.2 Termes abrégés	13
4 Méthode d'essai	14
4.1 Echantillons pour les essais	14
4.2 Connexion de l'unité	14
4.3 Montage 1 – Considérations relatives aux essais à fréquence fixe	14
4.4 Considérations relatives au montage 2	14
4.5 Chocs	14
5 Rapport	15
Annexe A (normative) Calcul de l'énergie de choc équivalente	16
Annexe B (normative) Calcul de l'énergie de choc pour différents types de connecteurs	17
Figure 1 – Représentation d'un essai de choc	15
Tableau 1 – Informations relatives aux chocs pour certains connecteurs courants	15
Tableau A.1 – Masse estimée de billes d'acier de différents diamètres	16
Tableau B.1 – Calcul de l'énergie de choc pour chaque type de connecteurs RF	17

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

**DISPOSITIFS RF ET À MICRO-ONDES PASSIFS,
MESURE DU NIVEAU D'INTERMODULATION –****Partie 3: Mesure de l'intermodulation passive dans les connecteurs
coaxiaux****AVANT-PROPOS**

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Cette seconde édition annule et remplace la première édition parue en 2012. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) modification de la méthode d'impact pour utiliser une bille en acier plutôt qu'une tige en laiton;
- b) ajout de l'énergie de choc exigée pour soumettre à l'essai chaque type de connecteur;

- c) ajout de la méthode pour calculer l'énergie de choc pour les types de connecteurs non répertoriés dans le document.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
46/836/FDIS	46/857/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue utilisée pour l'élaboration de la présente Norme internationale est l'anglais.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/standardsdev/publications.

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DISPOSITIFS RF ET À MICRO-ONDES PASSIFS, MESURE DU NIVEAU D'INTERMODULATION –

Partie 3: Mesure de l'intermodulation passive dans les connecteurs coaxiaux

1 Domaine d'application

La présente partie de l'IEC 62037 définit l'essai de choc sur des connecteurs coaxiaux pour évaluer leur robustesse dans le cas de connexions faibles et de particules à l'intérieur des connecteurs, aussi indépendamment que possible des effets de l'intermodulation passive des câbles.

Pour les autres connecteurs (par exemple les connecteurs montés sur panneaux), le câble peut être remplacé par une ligne de transmission adéquate (par exemple une ligne à air, une ligne à ruban). Afin d'évaluer les effets des contraintes mécaniques sur les connecteurs, une série de chocs est appliquée aux connecteurs, tout en mesurant l'intermodulation passive.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 62037-1, *Dispositifs RF et à micro-ondes passifs, mesure du niveau d'intermodulation – Partie 1: Exigences générales et méthodes de mesure*

IEC 62037-4, *Dispositifs RF et à micro-ondes passifs, mesure du niveau d'intermodulation – Partie 4: Mesure de l'intermodulation passive dans les câbles coaxiaux*