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

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PASSIVE RF AND MICROWAVE DEVICES, INTERMODULATION LEVEL MEASUREMENT –

Part 3: Measurement of passive intermodulation in coaxial connectors

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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 third edition cancels and replaces the second edition published in 2021. This edition constitutes a technical revision.

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

a) impact test requirements for multi-channel connectors added;
b) method for calculating impact energy added for connector shapes other than round;
c) revised test considerations for achieving maximum PIM in reverse (reflected) PIM measurements;
d) added clarification that PIM tests reports shall include the maximum PIM value measured.

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

Draft	Report on voting
46/1040/FDIS	46/1044/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/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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- reconfirmed,
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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 passive intermodulation (PIM).

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 62037-1:2021, *Passive RF and microwave devices, intermodulation level measurement – Part 1: General requirements and measuring methods*

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

IEC 62037-3

Edition 3.0 2025-03

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



IEC 62037-3:2025-03(en-fr)

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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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

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Cette troisième édition annule et remplace la deuxième édition parue en 2021. Cette édition constitue une révision technique.

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

a) ajout d'exigences d'essai de tenue aux chocs pour les connecteurs multicanaux;

b) ajout d'une méthode pour le calcul de l'énergie de choc pour les connecteurs qui ne sont pas ronds;

c) révision des conditions d'essai pour obtenir la valeur d'intermodulation passive maximale pour les mesurages PIM en mode inverse (réfléchi);

d) ajout d'une clarification indiquant que les rapports d'essai de PIM doivent inclure la valeur de PIM maximale mesurée.

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

Projet	Rapport de vote
46/1040/FDIS	46/1044/RVD

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

La langue employée pour l'élaboration de cette 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/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 réalisé 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 (PIM) 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 rubans). 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 62037-1:2021, *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*