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

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PASSIVE RF AND MICROWAVE DEVICES, INTERMODULATION LEVEL MEASUREMENT –

Part 1: General requirements and measuring methods

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 62037-1:2021. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 62037-1 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) added clarification that PIM generation is typically frequency dependent and noted that testing with swept or multiple fixed frequencies often provides more accurate results;
b) identified multi-port PIM analyzers as a possible test set-up topography;
c) added specification that test power level does not exceed the power handling capability of the DUT;
d) updated test specification to include missing parameters needed to properly define a PIM test;
e) added clarification that PIM test reports include the maximum PIM value measured over the test duration;
f) corrected error in Figure 3 that was erroneously changed in IEC 62037-1:2021.

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

Draft	Report on voting
46/1035/FDIS	46/1043/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.

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PASSIVE RF AND MICROWAVE DEVICES, INTERMODULATION LEVEL MEASUREMENT –

Part 1: General requirements and measuring methods

1 Scope

This part of IEC 62037 deals with the general requirements and measuring methods for intermodulation (IM) level measurement of passive RF and microwave components, which can be caused by the presence of two or more transmitting signals.

The test procedures given in this document give the general requirements and measurement methods required to characterize the level of unwanted IM signals using two transmitting signals.

The IEC 62037 series addresses the measurement of PIM but does not cover the long-term reliability of a product with reference to its performance.

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 (all parts), *Passive RF and microwave devices, intermodulation level measurement*~~

There are no normative references in this document.

IEC 62037-1

Edition 3.0 2025-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

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



IEC 62037-1:2025-02(en-fr)

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

Partie 1: Exigences générales et méthodes de mesure

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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) clarification ajoutée indiquant que la génération d'une intermodulation passive (PIM) dépend généralement de la fréquence et note indiquant que les essais à balayage de fréquences ou à des fréquences fixes multiples donnent souvent des résultats plus précis;
b) analyseurs d'intermodulation passive à plusieurs ports identifiés comme topographies de montage d'essai possibles;
c) ajout d'une spécification indiquant que le niveau de puissance de l'essai ne dépasse pas la capacité de tenue en puissance du dispositif en essai;
d) spécification d'essai mise à jour pour inclure les paramètres manquants nécessaires à la définition correcte d'un essai de génération d'intermodulation passive (PIM);
e) clarification ajoutée indiquant que les rapports d'essai de génération d'intermodulation passive (PIM) incluent la valeur PIM maximale mesurée sur toute la durée d'essai;
f) erreur corrigée à la Figure 3 qui avait été modifiée à tort dans l'IEC 62037-1:2021.

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

Projet	Rapport de vote
46/1035/FDIS	46/1043/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 1: Exigences générales et méthodes de mesure

1 Domaine d'application

La présente partie de l'IEC 62037 donne les exigences générales et les méthodes de mesure du niveau d'intermodulation (IM) des composants RF et à micro-ondes passifs, qui peut être provoqué par la présence de deux ou plus de deux signaux d'émission.

Les procédures d'essai présentées dans le présent document donnent les exigences générales et les méthodes de mesure exigées pour caractériser le niveau des signaux d'intermodulation indésirables à l'aide de deux signaux d'émission.

La série IEC 62037 porte sur la mesure de l'intermodulation passive (PIM), mais ne couvre pas la fiabilité à long terme des produits par rapport à leurs performances.

2 Références normatives

Le présent document ne contient aucune référence normative.