

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

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ICS 33.040.20

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English version

**Passive RF and microwave devices, intermodulation level measurement -
Part 1: General requirements and measuring methods
(IEC 62037-1:2012)**

Dispositifs RF et à micro-ondes passifs,
mesure du niveau d'intermodulation -
Partie 1: Exigences générales
et méthodes de mesure
(CEI 62037-1:2012)

Passive HF- und Mikrowellenbauteile,
Messung des Intermodulationspegels -
Teil 1: Allgemeine Anforderungen
und Messverfahren
(IEC 62037-1:2012)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 46/402/FDIS, future edition 1 of IEC 62037-1, prepared by IEC TC 46 "Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62037-1:2012.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-04-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-07-03

This document supersedes EN 62037:1999 (PART).

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Endorsement notice

The text of the International Standard IEC 62037-1:2012 was approved by CENELEC as a European Standard without any modification.

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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 standard give the general requirements and measurement methods required to characterize the level of unwanted IM signals using two transmitting signals.

The standards in this series address the measurement of PIM, but do not cover the long term reliability of a product with reference to its performance.

This standard is to be used in conjunction with other appropriate part(s) of IEC 62037.

2 Normative references

None.

3 Abbreviations

CATV Community antenna television

DUT Device under test

IM Intermodulation

PIM Passive intermodulation

4 Characteristics of intermodulation products

PIM interference is caused by sources of non-linearity of mostly unknown nature, location and behaviour. A few examples are inter-metallic contacts, choice of materials, corrosion products, dirt, etc. Most of these effects are subject to changes over time due to mechanical stress, temperature changes, variations in material characteristics (cold flow, etc.) and climatic changes, etc.

The generation of intermodulation products originates from point-sources inside a DUT and propagate equally in all available directions.

The generation of passive intermodulation products (PIM) does not necessarily follow the law of the usual non-linear equation of quadratic form. Therefore, accurate calculation to other power levels causing the intermodulation is not possible and PIM comparisons should be made at the same power level.

Furthermore, PIM generation can be frequency-dependent. When PIM generation is frequency-dependant, the PIM performance shall be investigated over the specified frequency band.