



NSAI
Standards

Irish Standard
I.S. EN 62037-5:2013

Passive RF and microwave devices,
intermodulation level measurement --
Part 5: Measurement of passive
intermodulation in filters (IEC 62037
-5:2013 (EQV))

I.S. EN 62037-5:2013

Incorporating amendments/corrigenda issued since publication:

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
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EUROPEAN STANDARD

EN 62037-5

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English version

**Passive RF and microwave devices, intermodulation level measurement -
Part 5: Measurement of passive intermodulation in filters
(IEC 62037-5:2013)**

Dispositifs RF et à micro-ondes passifs,
mesure du niveau d'intermodulation -
Partie 5: Mesure de l'intermodulation
passive dans les filtres
(CEI 62037-5:2013)

Passive HF- und Mikrowellenbauteile,
Messung des Intermodulationspegels -
Teil 5: Messung der passiven
Intermodulation in Filtern
(IEC 62037-5:2013)

This European Standard was approved by CENELEC on 2013-02-20. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 46/409/FDIS, future edition 1 of IEC 62037-5, 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 62037-5:2013.

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) 2013-11-20
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-02-20

This document partially supersedes EN 62037:1999.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62037-5:2013 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62037-1	2012	Passive RF and microwave devices, intermodulation level measurement - Part 1: General requirements and measuring methods	EN 62037-1	2012

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PASSIVE RF AND MICROWAVE DEVICES,
INTERMODULATION LEVEL MEASUREMENT –**
Part 5: Measurement of passive intermodulation in filters

FOREWORD

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International Standard IEC 62037-5 has been prepared by technical committee 46: Cables, wires, waveguides, r.f. connectors, r.f. and microwave passive components and accessories.

The text of this standard is based on the following documents:

FDIS	Report on voting
46/409/FDIS	46/421/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

PASSIVE RF AND MICROWAVE DEVICES, INTERMODULATION LEVEL MEASUREMENT –

Part 5: Measurement of passive intermodulation in filters

1 Scope

This part of IEC 62037 defines test fixtures and procedures recommended for measuring levels of passive intermodulation generated by filters, typically used in wireless communication systems. The purpose is to define qualification and acceptance test methods for filters for use in low intermodulation (low IM) applications.

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 62037-1:2012, *Passive r.f. and microwave devices, intermodulation level measurement – Part 1: General requirements and measuring methods*

3 Abbreviations

DUT Device under test
IM Intermodulation
PIM Passive intermodulation

4 General comments on PIM testing of filter assemblies

4.1 Sources of error: back-to-back filters

Testing filter assemblies for PIM may be error prone if certain precautionary guidelines are not followed. Since PIM can be a frequency-dependent phenomena, mathematically related to the harmonics of the input signals and combinations thereof, consideration should be given not only to the behaviour of the test set-up under fundamental stimulation, but also its harmonic performance. In particular, consider a receive-band PIM test set-up as shown in Figure 1. As shown, this set-up could be used to measure the PIM in a two-port device under test (DUT); however, the accuracy of the measurement could be in question due to the back-to-back filters (diplexers) used.

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