

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

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**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)

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

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Foreword

The text of document 46/409/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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-02-20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.

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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

CONTENTS

FOREWORD.....	3
1 Scope.....	5
2 Normative references	5
3 Abbreviations	5
4 General comments on PIM testing of filter assemblies	5
4.1 Sources of error: back-to-back filters	5
4.2 Environmental and dynamic PIM testing	6
4.3 General test procedure.....	7
5 Example test equipment schematics for filter testing.....	7
5.1 General.....	7
5.2 Transmit band testing.....	7
5.3 Receive band testing: dual high-power carriers	8
5.4 Receive band testing: injected interferer.....	10
Figure 1 – Typical receive band PIM test set-up.....	6
Figure 2 – Typical test equipment schematic for measuring transmit-band, forward, passive IM products on an N-port DUT using two high-power carriers	8
Figure 3 – Typical test equipment schematic for measuring receive-band, forward, passive IM products on an N-port DUT, using two high-power carriers	9
Figure 4 – Typical test equipment schematic for measuring receive-band, reverse, passive IM products on an N-port DUT, using two high-power carriers	9
Figure 5 – Typical test equipment schematic for measuring receive-band, passive IM products on an N-port DUT, using two high-power carriers	10
Figure 6 – Typical test equipment schematic for measuring receive-band, forward, passive IM products on an N-port DUT, using the injected interferer technique	11
Figure 7 – Typical test equipment schematic for measuring receive-band, reverse, passive IM products on an N-port DUT, using the injected interferer technique	11
Figure 8 – Typical test equipment schematic for measuring receive-band, passive IM products on an N-port DUT, using the injected interferer technique.....	12
Table 1 – Summary table referencing example test equipment schematics for measuring PIM on filter-type devices	7

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.