

INTERNATIONAL STANDARD

**Passive RF and microwave devices, intermodulation level measurement –
Part 5: Measurement of passive intermodulation in filters**

(<https://standards.iteh.ai>)

Document Preview

IEC 62037-5:2013

<https://standards.iteh.ai/en/standards/iec/7b5ca65e-8696-447f-b5ce-56ba4f3a0291/iec-62037-5-2013>

Withhold



THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2013 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester.
If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

Useful links:

IEC publications search - www.iec.ch/searchpub

The advanced search enables you to find IEC publications by a variety of criteria (reference number, text, technical committee,...).

It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available on-line and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 30 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary (IEV) on-line.

Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.

IEC 62037-5:2013

<https://standards.iteh.ai/en/standards/iec/45ca65e-8696-447f-b5ce-56ba4f3a0291/iec-62037-5-2013>

INTERNATIONAL STANDARD

Passive RF and microwave devices, intermodulation level measurement –
Part 5: Measurement of passive intermodulation in filters

<https://standards.iteh.ai>
Document Preview

IEC 62037-5:2013

<https://standards.iteh.ai/standards/iec/7b5ca65e-8696-447f-b5ce-56ba4f3a0291/iec-62037-5-2013>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE

M

ICS 33.040.20

ISBN 978-2-83220-580-8

Warning! Make sure that you obtained this publication from an authorized distributor.

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 |

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PASSIVE RF AND MICROWAVE DEVICES,
INTERMODULATION LEVEL MEASUREMENT –**

Part 5: Measurement of passive intermodulation in filters

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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.

Witholdawn

iTech Standards
(<https://standards.itih.ai>)
Document Preview

[IEC 62037-5:2013](#)

<https://standards.itih.ai/standards/iec/7b5ca65e-8696-447f-b5ec-56ba4f3a0291/iec-62037-5-2013>