

INTERNATIONAL STANDARD

CONSOLIDATED VERSION

Passive RF and microwave devices, intermodulation level measurement -
Part 6: Measurement of passive intermodulation in antennas

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

IEC 62037-6:2021

<https://standards.iteh.ai/catalog/standards/iec/6741ab1a-021e-4aa6-9dbb-869457376e54/iec-62037-6-2021>



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2025 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 Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
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 corrigendum or an amendment might have been published.

IEC publications search -

webstore.iec.ch/advsearchform

The advanced search enables 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 It also gives information on projects, replaced and withdrawn publications.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 online and once a month by email.

IEC 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: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch

Discover our powerful search engine and read freely all the publications previews, graphical symbols and the glossary. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org

The world's leading online dictionary on electrotechnology, containing more than 22 500 terminological entries in English and French, with equivalent terms in 25 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

[IEC 62037-6:2021](https://standards.iteh.ai/catalog/standards/iec/6741ab1a-021e-4aa6-9dbb-869457376e54/iec-62037-6-2021)

<https://standards.iteh.ai/catalog/standards/iec/6741ab1a-021e-4aa6-9dbb-869457376e54/iec-62037-6-2021>

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

CONTENTS

FOREWORD	2
INTRODUCTION to Amendment	4
1 Scope	5
2 Normative references	5
3 Terms, definitions and abbreviated terms	5
3.1 Terms and definitions	5
3.2 Abbreviated terms	5
4 Definitions of antenna as it pertains to PIM	5
4.1 Antenna	5
4.2 Antenna under test	5
4.3 Active antenna	6
4.4 Antenna PIM	6
5 Antenna design and field installation considerations	6
5.1 Environmental effects on PIM performance	6
5.2 Antenna interface connection	6
5.3 Mounting considerations to avoid PIM generation	6
5.4 Neighbouring sources of interference	6
5.5 Standard practices and guidelines for material selection	7
6 PIM measurement considerations	7
6.1 Quality assurance process and handling procedures	7
6.2 Measurement accuracy	7
6.3 Test environment	7
6.4 Safety	8
6.5 Test set-up	8
6.5.1 Coaxial test cable assemblies	8
6.5.2 Defining a good low PIM reference load	8
6.5.3 Test set-up and test site baseline PIM verification	8
6.6 PIM test configurations	9
6.7 Combined environmental and PIM testing	10
6.7.1 General	10
6.7.2 Mechanical considerations	10
6.7.3 Test system cables and connectors	10
6.8 PIM test chamber design	11
6.8.1 General	11
6.8.2 RF absorber materials	11
6.8.3 Supporting structures and walls	11
6.8.4 RF shielding	12
7 Dynamic PIM measurement considerations	12
7.1 General	12
7.2 Dynamic testing methodology	13
7.3 Shocks test	13
Bibliography	14
Figure 1 – Antenna reverse PIM test set-up	9
Figure 2 – Antenna forward PIM test set-up	10
Figure 3 – Hammer description	13

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Passive RF and microwave devices, intermodulation level measurement -
Part 6: Measurement of passive intermodulation in antennas**

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) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at <https://patents.iec.ch>. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC 62037-6 edition 2.1 contains the second edition (2021-11) [documents 46/838/FDIS and 46/859/RVD] and its amendment 1 (2025-12) [documents 46/1030/CDV and 46/1056/RVC].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

IEC 62037-6 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 second edition cancels and replaces the first edition published in 2013. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) dynamic testing requirements updated to define impact energy and locations to apply impacts to devices under test;

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

Draft	Report on voting
46/838/FDIS	46/859/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/standardsdev/publications.

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 document and its amendment will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.