This is a free page sample. Access the full version online.

AS/NZS 61000.4.13:2012
IEC 61000-4-13, Ed.1.1 (2009)

AS/NZS 61000.4.13:2012

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 4.13: Testing and measurement techniques—Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

This is a free page sample. Access the full version online.

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-034, Power Quality. It was approved on behalf of the Council of Standards Australia on 4 May 2012 and on behalf of the Council of Standards New Zealand on 26 April 2012.
This Standard was published on 22 May 2012.

The following are represented on Committee EL-034:

Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Information Industry Association
Bureau of Steel Manufacturers of Australia
Consumer Electronics Suppliers Association
Consumers Federation of Australia
Electrical Regulatory Authorities Council
Electricity Engineers Association, New Zealand
Energy Networks Association
Engineers Australia
Lighting Council of Australia
Ministry of Economic Development, New Zealand
National Measurement Institute
New Zealand Coordinating Committee on Power & Telecommunication Systems
New Zealand Electric Fence Energiser Manufacturers Standards WG
Telstra Corporation
University of Canterbury, New Zealand
University of Wollongong

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 61000.4.13.

This is a free page sample. Access the full version online.

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 4.13: Testing and measurement techniques—Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests

Originated as AS/NZS 61000.4.13:2006.
Second edition 2012.

COPYRIGHT

© Standards Australia Limited/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Australia) or the Copyright Act 1994 (New Zealand).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140

ISBN 978 1 74342 112 3

This is a free page sample. Access the full version online.

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-034, Power Quality, to supersede AS/NZS 61000.4.13:2006, *Electromagnetic compatibility (EMC)*—Part 4.13*: Testing and measurement techniques—Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests*.

The objective of this Standard is to establish a common reference for evaluating the functional immunity of electrical and electronic equipment when subjected to harmonics and interharmonics and mains signalling frequencies.

This Standard is identical with, and has been reproduced from IEC 61000-4-13, Ed.1.1 (2009), *Electromagnetic compatibility (EMC)*—Part 4-13: *Testing and measurement techniques—Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests*.

IEC 61000-4-13, Ed.1.1 (2009) consists of the IEC 61000-4-13, Ed.1.0 (2002) and its Amendment 1 (2009). A vertical line in the margin of the source document shows where the base publication has been modified by Amendment 1.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text 'this part of IEC 61000' should read 'this part of AS/NZS 61000'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
IEC		AS/NZS	
61000	Electromagnetic compatibility (EMC)	61000	Electromagnetic compatibility (EMC)
61000-2-2	Part 2-2: Environment—Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	61000.2.2	Part 2.2: Environment—Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems
61000-3-2	Part 3-2: Limits—Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	61000.3.2	Part 3.2: Limits—Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
61000-4-7	Part 4-7: Testing and measurement techniques—General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto	61000.4.7	Part 4.7: Testing and measurement techniques—General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

This is a free page sample. Access the full version online.

CONTENTS

1 Scope and object 7
2 Normative references 7
3 Definitions 8
4 General 9
4.1 Description of the phenomenon 9
4.2 Sources 9
5 Test levels 10
5.1 Harmonics test levels 10
5.2 Test levels for interharmonics and mains signalling 12
6 Test instrumentation 13
6.1 Test generator 13
6.2 Verification of the characteristics of the generator 15
7 Test set up 15
8 Test procedures 16
8.1 Test procedure 16
8.2 Application of the test 16
9 Evaluation of test results 21
10 Test report 22

Annex A (informative) Impedance network between voltage source and EUT 27
Annex B (informative) Resonance point 28
Annex C (informative) Electromagnetic environment classes 29

Bibliography 30

Figure 1 – Test flowcharts 18
Figure 2 – An example of a test set-up for single phase 23
Figure 3 – An example of a test set-up for three phases 23
Figure 4 – Test sequences for individual harmonics 24
Figure 5 – An example of the sweep in frequency test (for example class 1 equipment from Table 9) 24
Figure 6 – Flat curve waveshape 25
Figure 7 – Over swing waveshape 26

Table 1 – Odd harmonics non-multiple of 3 harmonics 11
Table 2 – Odd harmonics multiple of 3 harmonics 11
Table 3 – Even harmonics 12
Table 4 – Frequencies between harmonic frequencies 12
Table 4a – Frequencies between harmonic frequencies (for 50 Hz mains) 12
Table 4b – Frequencies between harmonic frequencies (for 60 Hz mains) 12

SAI GLOBAL

This is a free preview. Purchase the entire publication at the link below:

Product Page

Looking for additional Standards? Visit Intertek Inform Infostore

Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation