

AS/NZS 61000.4.5:1999
IEC 61000-4-5:1995

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 4.5: Testing and measurement techniques—Surge immunity test

[IEC title: Electromagnetic compatibility (EMC), Part 4: Testing and measurement techniques, Section 5: Surge immunity test]

AS/NZS 61000.4.5:1999

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TE/3, Electromagnetic Interference. It was approved on behalf of the Council of Standards Australia on 6 November 1998 and on behalf of the Council of Standards New Zealand on 12 November 1998. It was published on 5 March 1999.

The following interests are represented on Committee TE/3:

Association of Consulting Engineers Australia
Australian Broadcasting Corporation
Australian Chamber of Commerce and Industry
Australian Communications Authority
Australian Electrical and Electronic Manufacturers Association
Australian Information Industry Association
Australian Subscription Television and Radio Association
Commonwealth Scientific and Industrial Research Organization
Consumer Electronics Suppliers Association Australia
Department of Defence (Australia)
Electrical Compliance Testing Association Australia
Federation of Australian Commercial TV Stations
Institution of Engineers Australia
Institution of Radio and Electronics Engineers Australia
International Accreditation New Zealand
Ministry of Commerce New Zealand
National Standards Commission Australia
Optus Communications
Public Transport Corporation Australia
Society of Automotive Engineers—Australasia
Telstra Corporation
Wireless Institute Australia

Review of Standards. To keep abreast of progress in industry, Joint Australian/New Zealand Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Joint Standards and related publications will be found in the Standards Australia and Standards New Zealand Catalogue of Publications; this information is supplemented each month by the magazines 'The Australian Standard' and 'Standards New Zealand', which subscribing members receive, and which give details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Joint Standards, addressed to the head office of either Standards Australia or Standards New Zealand, are welcomed. Notification of any inaccuracy or ambiguity found in a Joint Australian/New Zealand Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

AS/NZS 61000.4.5:1999

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 4.5: Testing and measurement techniques—Surge immunity test

First published as AS/NZS 61000.4.5:1999.

Published jointly by:

Standards Australia
1 The Crescent,
Homebush NSW 2140 Australia

Standards New Zealand
Level 10, Radio New Zealand House,
155 The Terrace,
Wellington 6001 New Zealand

ISBN 0 7337 2394 2

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE/3, Electromagnetic Interference, as one of a series of Standards intended to facilitate control of electromagnetic interference and the compatibility of electrical and electronic equipment.

This Standard is identical with and has been reproduced from IEC 61000-4-5:1995, *Electromagnetic compatibility (EMC)*, Part 4: *Testing and measurement techniques*, Section 5: *Surge immunity test*, including Corrigendum: October 1995. The Corrigendum is bound at the rear of this Standard and the affected text is indicated by a marginal bar.

The objective of this Standard is to provide designers, manufacturers, and testers of equipment incorporating electrical or electronic operation with methods of test for ascertaining immunity to electromagnetic disturbances.

Since January 1997, IEC has applied 60000 numbering system to its publications and has modified its database accordingly. References in IEC publications issued since January 1997 are given in terms of the 60000 series numbering, e.g. IEC 1147 is referenced as IEC 61147.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex to which they apply. A ‘normative’ annex is an integral part of a Standard, whereas an ‘informative’ annex is only for information and guidance.

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 section of IEC 1000-4’ should read ‘this Australian/New Zealand Standard’.
- (c) A full point should be substituted for a comma when referring to a decimal marker.
- (d) In the source text ‘radio’ should read ‘radiocommunication’.

References to International or other Standards should be replaced by equivalent Australian or Joint Australian/New Zealand Standards as follows:

<i>Reference to International Standard or other Publication</i>	<i>Australian Standard</i>
IEC	AS
60050(161) International Electrotechnical Vocabulary (IEV)—Chapter 161: Electromagnetic compatibility	—
60060 High-voltage test techniques	1931 High-voltage test techniques
60060-1 Part 1: General definitions and test requirements	1931.1 Part 1: General definitions and test requirements
60469 Pulse techniques and apparatus	—
60469-1 Part 1: Pulse terms and definitions	—

CONTENTS

Clause	Page
1 Scope and object	1
2 Normative references	1
3 General	2
3.1 Switching transients	2
3.2 Lightning transients	2
3.3 Simulation of the transients	2
4 Definitions	3
5 Test levels	4
6 Test instrumentation	5
6.1 Combination wave (hybrid) generator (1,2/50 μ s – 8/20 μ s)	5
6.2 Test generator 10/700 μ s according to CCITT	6
6.3 Coupling/decoupling networks	7
7 Test set-up	9
7.1 Test equipment	9
7.2 Test set-up for tests applied to EUT power supply	9
7.3 Test set-up for tests applied to unshielded unsymmetrically operated interconnection lines	10
7.4 Test set-up for tests applied to unshielded symmetrically operated interconnection/telecommunication lines (figure 12)	10
7.5 Test set-up for tests applied to shielded lines	10
7.6 Test set-up to apply potential differences	11
7.7 Other test set-ups	11
7.8 Test conditions	11
8 Test procedure	11
8.1 Laboratory reference conditions	11
8.2 Application of the surge in the laboratory	12
9 Test results and test report	13
Tables	
1 Test levels	4
2 Definitions of the waveform parameters 1,2/50 μs	15
3 Definitions of the waveform parameters 10/700 μs	17
A.1 Selection of the test levels (depending on the installation conditions)	27

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
-