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IEC 61000-4-5:2005

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Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 4.5: Testing and measurement techniques—Surge immunity test

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TE-003, Electromagnetic Interferences. It was approved on behalf of the Council of Standards Australia on 19 April 2006 and on behalf of the Council of Standards New Zealand on 19 May 2006.
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The following are represented on Committee TE-003:

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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.

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Part 4.5: Testing and measurement techniques—Surge immunity test

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE-003, Electromagnetic Interferences to supersede AS/NZS 61000.4.5:1999. It is 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 61000-4-5:2005, *Electromagnetic compatibility (EMC)*—Part 4-5: *Testing and measuring techniques—Surge immunity test*.

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. 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 Australian/New Zealand Standard'.

(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		
60050	International Electrotechnical Vocabulary (IEV)	—
60050 (161)	Chapter 161: Electromagnetic compatibility	—
60060	High-voltage test techniques	—
60060-1	Part 1: General definitions and test requirements	—
60469	Pulse techniques and apparatus	—
60469-1	Part 1: Pulse terms and definitions	—

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1 Scope and object

This part of IEC 61000 relates to the immunity requirements, test methods, and range of recommended test levels for equipment to unidirectional surges caused by overvoltages from switching and lightning transients. Several test levels are defined which relate to different environment and installation conditions. These requirements are developed for and are applicable to electrical and electronic equipment.

The object of this standard is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to surges. The test method documented in this part of IEC 61000 describes a consistent method to assess the immunity of an equipment or system against a defined phenomenon.

NOTE As described in IEC Guide 107, this is a basic EMC publication for use by product committees of the IEC. As also stated in Guide 107, the IEC product committees are responsible for determining whether this immunity test standard should be applied or not, and if applied, they are responsible for determining the appropriate test levels and performance criteria. TC 77 and its sub-committees are prepared to co-operate with product committees in the evaluation of the value of particular immunity tests for their products.

This standard defines:

– a range of test levels;
– test equipment;
– test setups;
– test procedures.

The task of the described laboratory test is to find the reaction of the EUT under specified operational conditions, to surge voltages caused by switching and lightning effects at certain threat levels.

It is not intended to test the capability of the EUT's insulation to withstand high-voltage stress. Direct injections of lightning currents, i.e, direct lightning strikes, are not considered in this standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050(161), *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electro-magnetic compatibility*