

Australian/New Zealand Standard™

**Electromagnetic compatibility (EMC)**

**Part 4.5: Testing and measurement  
techniques—Surge immunity test**



## **AS/NZS 61000.4.5:2006**

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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Australian Information Industry Association  
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Australian/New Zealand Standard™

**Electromagnetic compatibility (EMC)**

**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:

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- (b) In the source text ‘this part of IEC 61000’ should read ‘this Australian/New Zealand Standard’.
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References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>	<i>Australian/New Zealand Standard</i>
IEC	
60050 International Electrotechnical Vocabulary (IEV)	—
60050 Chapter 161: Electromagnetic compatibility (161)	—
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	—

## CONTENTS

	<i>Page</i>
1 Scope and object.....	1
2 Normative references .....	1
3 Terms and definitions .....	2
4 General .....	5
4.1 Power system switching transients .....	5
4.2 Lightning transients .....	5
4.3 Simulation of the transients .....	5
5 Test levels.....	6
6 Test instrumentation .....	6
6.1 1,2/50 $\mu$ s combination wave generator .....	6
6.2 10/700 $\mu$ s combination wave generator .....	10
6.3 Coupling/decoupling networks .....	13
7 Test setup .....	26
7.1 Test equipment .....	26
7.2 Test setup for tests applied to EUT power ports .....	26
7.3 Test setup for tests applied to unshielded unsymmetrical interconnection lines .....	26
7.4 Test setup for tests applied to unshielded symmetrical interconnections communication lines .....	27
7.5 Test setup for tests applied to high speed communications lines .....	27
7.6 Test setup for tests applied to shielded lines .....	27
7.7 Test setup to apply potential differences .....	30
7.8 EUT mode of operation .....	30
8 Test procedure .....	31
8.1 Laboratory reference conditions .....	31
8.2 Application of the surge in the laboratory.....	31
9 Evaluation of test results .....	32
10 Test report.....	33
Annex A (informative) Selection of generators and test levels .....	34
Annex B (informative) Explanatory notes .....	36
Annex C (informative) Considerations for achieving immunity for equipment connected to low voltage power systems .....	40
Bibliography.....	42
Figure 1 – Simplified circuit diagram of the combination wave generator (1,2/50 $\mu$ s – 8/20 $\mu$ s) .....	7
Figure 2 – Waveform of open-circuit voltage (1,2/50 $\mu$ s) at the output of the generator with no CDN connected (waveform definition according to IEC 60060-1).....	9

	<i>Page</i>
Figure 3 – Waveform of short-circuit current (8/20 $\mu$ s) at the output of the generator with no CDN connected (waveform definition according to IEC 60060-1).....	9
Figure 4 – Simplified circuit diagram of the combination wave generator (10/700 $\mu$ s – 5/320 $\mu$ s) according to ITU K series standards.....	10
Figure 5 – Waveform of open-circuit voltage (10/700 $\mu$ s) (waveform definition according to IEC 60060-1) .....	11
Figure 6 – Waveform of the 5/320 $\mu$ s short-circuit current waveform (definition according to IEC 60060-1) .....	12
Figure 7 – Example of test setup for capacitive coupling on a.c./d.c. lines; line-to-line coupling (according to 7.2).....	13
Figure 8 – Example of test setup for capacitive coupling on a.c./d.c. lines; line-to-ground coupling (according to 7.2).....	14
Figure 9 – Example of test setup for capacitive coupling on a.c. lines (3 phases); line L3 to line L1 coupling (according to 7.2) .....	15
Figure 10 – Example of test setup for capacitive coupling on a.c. lines (3 phases); line L3 to ground coupling (according to 7.2).....	16
Figure 11 – Example of test set up for unshielded unsymmetrical interconnection lines; line-to-line and line-to-ground coupling (according to 7.3), coupling via capacitors .....	17
Figure 12 – Example of test setup for unshielded unsymmetrical interconnection lines; line-to-line and line-to-ground coupling (according to 7.3), coupling via arrestors.....	18
Figure 13 – Example of test setup for unshielded unsymmetrical interconnection lines; line-to-line and line-to-ground coupling (according to 7.3), coupling via a clamping circuit.....	19
Figure 14 – Example of test setup for unshielded symmetrical interconnection lines (communication lines); lines-to-ground coupling (according to 7.4), coupling via arrestors .....	20
Figure 15 – Example of a coupling/decoupling network for symmetrical high speed communication lines using the 1,2/50 $\mu$ s surge .....	21
Figure 16 – Example of test setup for tests applied to shielded lines (according to 7.6) and to apply potential differences (according to 7.7) .....	28
Figure 17 – Example of test setup for tests applied to shielded lines grounded only at one end (according to 7.6) and to apply potential differences (according to 7.7) .....	29
Figure 18 – Coupling method and test setup for tests applied to shielded lines and to apply potential differences, especially in configurations with multiple shielded cable wiring.....	30
Table 1 – Test levels.....	6
Table 2 – Definitions of the waveform parameters 1,2/50 $\mu$ s – 8/20 $\mu$ s.....	8
Table 3 – Relationship between peak open-circuit voltage and peak short-circuit current.....	8
Table 4 – Definitions of the waveform parameters 10/700 $\mu$ s – 5/320 $\mu$ s .....	12
Table 5 – Relationship between peak open-circuit voltage and peak short-circuit current.....	12
Table 6 – Voltage waveform specification at the EUT port of the coupling/decoupling network.....	23
Table 7 – Current waveform specification at the EUT port of the coupling/decoupling network.....	23
Table A.1 – Selection of the test levels (depending on the installation conditions) .....	35

## AUSTRALIAN/NEW ZEALAND STANDARD

# Electromagnetic compatibility (EMC)

## Part 4.5:

### Testing and measurement techniques—Surge immunity test

#### 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: Electromagnetic compatibility*