

Australian/New Zealand Standard™

**Specification for radio disturbance and
immunity measuring apparatus and
methods**

**Part 4.2: Uncertainties, statistics and
limit modelling—Uncertainty in EMC
measurements**

AS/NZS CISPR 16.4.2:2004

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Part 4.2: Uncertainties, statistics and limit modelling—Uncertainty in EMC measurements

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE-003, Electromagnetic Interference.

This Standard is identical with, and has been reproduced from, CISPR 16-4-2:2003, *Specification for radio disturbance and immunity measuring apparatus and methods*, Part 4.2: *Uncertainties, statistics and limit modelling—Uncertainty in EMC measurements*.

The objective of this Standard is to specify the manner in which measurement uncertainty is to be taken in to account in determining compliance with CISPR limits.

This Standard is Part 4.2 of AS/NZS CISPR 16.4, *Specification for radio disturbance and immunity measuring apparatus and methods*, which consists of the following:

Part 4.1: Uncertainties, statistics and limit modelling—Uncertainties in standardized EMC tests

Part 4.2: Uncertainties, statistics and limit modelling—Uncertainty in EMC measurements (this Standard)

Part 4.3: Uncertainties, statistics and limit modelling—Statistical considerations in the determination of EMC compliance of mass-produced products

Part 4.4: Uncertainties, statistics and limit modelling—Statistics of complaints and a model for the calculation of limits

The terms ‘normative’ and ‘informative’ are used 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.

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- (a) Its number appears on the cover and title page while the international standard number appears only on the cover.
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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>	
CISPR		AS/NZS CISPR	
16	Specification for radio disturbance and immunity measuring apparatus and methods	16	Specification for radio disturbance and immunity measuring apparatus and methods
16-1-1	Part 1-1: Radio disturbance and immunity measuring apparatus—Measuring apparatus	16.1.1	Part 1.1: Radio disturbance and immunity measuring apparatus—Measuring apparatus
16-1-2	Part 1-2: Radio disturbance and immunity measuring apparatus—Ancillary equipment—Conducted disturbances	16.1.2	Part 1.2: Radio disturbance and immunity measuring apparatus—Ancillary equipment—Conducted disturbances

16-1-3	Part 1-3: Radio disturbance and immunity measuring apparatus—Ancillary equipment—Disturbance power	16.1.3	Part 1.3: Radio disturbance and immunity measuring apparatus—Ancillary equipment—Disturbance power
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16-1-5	Part 1-5: Radio disturbance and immunity measuring apparatus—Antenna calibration test sites for 30 MHz to 1 000 MHz	16.1.5	Part 1.5: Radio disturbance and immunity measuring apparatus—Antenna calibration test sites for 30 MHz to 1 000 MHz
16-2-1	Part 2-1: Methods of measurement of immunity and disturbance—Conducted disturbance measurements	16.2.1	Part 2.1: Methods of measurement of immunity and disturbance—Conducted disturbance measurements
16-2-2	Part 2-2: Methods of measurement of immunity and disturbance—Measurement of disturbance power	16.2.2	Part 2.2: Methods of measurement of immunity and disturbance—Measurement of disturbance power
16-2-3	Part 2-3: Methods of measurement of immunity and disturbance—Radiated disturbance measurements	16.2.3	Part 2.3: Methods of measurement of immunity and disturbance—Radiated disturbance measurements
16-2-4	Part 2-4: Methods of measurement of immunity and disturbance—Immunity measurements	16.2.4	Part 2.4: Methods of measurement of immunity and disturbance—Immunity measurements
16-3	Part 3: CISPR technical reports	16.3	Part 3: CISPR technical reports
16-4-1	Part 4-1: Uncertainties, statistics and limit modelling—Uncertainties in standardized EMC tests	16.4.1	Part 4.1: Uncertainties, statistics and limit modelling—Uncertainties in standardized EMC tests
16-4-3	Part 4-3: Uncertainties, statistics and limit modelling—Statistical considerations in the determination of EMC compliance of mass-produced products	16.4.3	Part 4.3: Uncertainties, statistics and limit modelling—Statistical considerations in the determination of EMC compliance of mass-produced products
16-4-4	Part 4-4: Uncertainties, statistics and limit modelling—Statistics of complaints and a model for the calculation of limits	16.4.4	Part 4.4: Uncertainties, statistics and limit modelling—Statistics of complaints and a model for the calculation of limits

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Australian/New Zealand Standard**Specification for radio disturbance and immunity measuring apparatus
and methods****Part 4.2: Uncertainties, statistics and limit modelling—Uncertainty in EMC
measurements**

1 Scope

This part of CISPR 16 is designated a basic standard, which specifies the manner in which measurement uncertainty is to be taken in to account in determining compliance with CISPR limits. The material is also relevant to any EMC test when interpretation of the results and conclusions reached will be impacted by the uncertainty of the instrumentation used during the testing. Annex A contains the background material used in providing the amount of measurement uncertainty found in generating the CISPR values shown in Clause 4 and hence provides valuable background material for those needing both initial and further information on measurement uncertainty and how to take into account individual uncertainties in the measurement chain. The annex however is not intended to be a tutorial of user manual or to be copied when making uncertainty calculations. For that, the references shown in the bibliography should be used.

Measurement instrumentation specifications are given in CISPR 16-1, while the methods of measurement are covered in CISPR 16-2. Further information and background on CISPR and radio disturbances is given in CISPR 16-3. The other parts of CISPR 16-4 contain further information on uncertainties in general, statistics and limit modelling.

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.

CISPR 16-1 (all parts), Specification for radio disturbance and immunity measuring apparatus and methods – Radio disturbance and immunity measuring apparatus

CISPR 16-2 (all parts), Specification for radio disturbance and immunity measuring apparatus and methods – Methods of measurement of disturbances and immunity

CISPR 16-3, Specification for radio disturbance and immunity measuring apparatus and methods – Part 3: CISPR technical reports

CISPR 16-4-1:2003, Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-1: Uncertainties, statistics and limit modelling – Uncertainties in standardized EMC tests

CISPR 16-4-3:2003, Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-3: Uncertainties, statistics and limit modelling – Statistical considerations in the determination of EMC compliance of mass-produced products

CISPR 16-4-4:2003, Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-4: Uncertainties, statistics and limit modelling – Statistics of complaints and a model for the calculation of limits