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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 17799.3-2012

Replacing GB 17799.3-2001

**Electromagnetic compatibility (EMC) - Generic standards -
Emission standard for residential, commercial and
light-industrial environments**

电磁兼容 通用标准 居住、商业和轻工业环境中的发射

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1 Scope

The emission requirements laid down in this part of GB 17799 are for electrical and electronic equipment used in residential, commercial and light-industrial environments.

The frequency range covered by this part is 0 Hz to 400 GHz. Frequency bands for which the standard sets no requirement need not be measured.

Where no relevant product or product-family electromagnetic compatibility (EMC) emission standard exists, this generic EMC emission standard applies.

This part applies to equipment connected directly to the low-voltage public mains network, and to equipment connected to that network through a dedicated direct-current supply. It also applies to battery-operated equipment, and to equipment supplied from a non-public, non-industrial low-voltage power distribution system, used in the locations listed below.

The environments covered by this part are the indoor and outdoor locations of residential, commercial and light-industrial premises. The locations listed below describe the environment, although the list is not exhaustive: residential premises, for example houses and flats; retail outlets, for example shops and supermarkets; commercial buildings, for example offices and banks; areas of public entertainment, for example cinemas, public bars

and dance halls; outdoor locations, for example petrol stations, car parks, amusement parks and sports centres; light-industrial locations, such as workshops, laboratories and service centres.

Any location supplied directly with low voltage from the public mains network belongs to the residential, commercial and light-industrial environment.

The purpose of this part is to set the emission test requirements for continuous and transient, conducted and radiated disturbance of the equipment within its field of application.

The emission requirements laid down in this part keep the disturbance level generated by equipment working normally in residential, commercial and light-industrial environments from impeding other equipment from working as intended; equipment fault conditions are not taken into account. The tests proposed by this part do not cover every disturbance phenomenon, only those relevant to the equipment covered by this part. These requirements state the basic electromagnetic compatibility emission requirements.

This part sets test requirements for every port considered.

NOTE 1: This part contains no safety requirements.

NOTE 2: In special circumstances the limits laid down in this part do not provide sufficient protection, for example where sensitive receiving equipment is used close to the equipment. Additional mitigation measures may then be needed.

NOTE 3: The requirements of this part are stricter than those of GB 17799.4; equipment that meets the requirements of this part therefore also meets the requirements of GB 17799.4.

2 Normative references

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

GB/T 6113.102-2008 Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-2: Radio disturbance and immunity measuring apparatus - Ancillary equipment - Conducted disturbances (IEC/CISPR 16-1-2:2006, IDT)

GB/T 6113.402-2006 Specification for radio disturbance and immunity measuring apparatus and methods - Part 4-2: Uncertainty, statistics and limit modelling - Uncertainty of measuring apparatus and facilities (IEC/CISPR 16-4-2:2003, IDT)

GB 9254-2008 Limits and methods of measurement of radio disturbance characteristics of information technology equipment (IEC/CISPR 22:2006, IDT)

IEC 60050-161 International Electrotechnical Vocabulary (IEV) - Chapter 161:
Electromagnetic compatibility

IEC 61000-3-2:2005 + Amendment 1:2008 + Amendment 2:2009 Electromagnetic compatibility (EMC)-Limits-Limits for harmonic current emissions (equipment input current not more than 16 A per phase)

IEC 61000-3-3:2008 Electromagnetic compatibility (EMC)-Limits-Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current not more than 16 A per phase and not subject to conditional connection

IEC 61000-3-11:2000 Electromagnetic compatibility (EMC)-Limits-Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems-Equipment with rated current not more than 75 A and subject to conditional connection

IEC 61000-3-12:2004 Electromagnetic compatibility (EMC)-Limits-Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current greater than 16 A and not more than 75 A per phase

IEC 61000-4-20:2010 Electromagnetic compatibility (EMC)-Testing and measurement techniques-Emission and immunity testing in transverse electromagnetic (TEM) waveguide

IEC/CISPR 14-1:2005 + Amendment 1:2008 Electromagnetic compatibility-Requirements for household appliances, electric tools and similar apparatus-Part 1: Emission

IEC/CISPR 16-1-1:2010 Specification for radio disturbance and immunity measuring apparatus and methods-Part 1-1: Radio disturbance and immunity measuring apparatus-Measuring apparatus

IEC/CISPR 16-1-4:2007 + Amendment 1:2007 Specification for radio disturbance and immunity measuring apparatus and methods-Part 1-4: Radio disturbance and immunity measuring apparatus-Ancillary equipment-Radiated disturbances

IEC/CISPR 16-2-1:2008 Specification for radio disturbance and immunity measuring apparatus and methods-Part 2-1: Methods of measurement of disturbances and immunity-Conducted disturbance measurements

IEC/CISPR 16-2-3:2006 Specification for radio disturbance and immunity measuring apparatus and methods-Part 2-3: Methods of measurement of disturbances and immunity-Radiated disturbance measurements

Relationship to previous standards

The foreword states that the whole technical content of this part is mandatory and that this part is the third part of GB 17799, drafted according to the rules given in GB/T 1.1-2009.

This part is identical (IDT) to IEC 61000-6-3:2011 (Ed 2.1) Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments.

This part replaces GB 17799.3-2001 Electromagnetic compatibility - Generic standards - Emission standard for residential, commercial and light-industrial environments. The foreword records the publication history of the standard replaced as: GB 17799.3-2001.

GB 17799 Electromagnetic compatibility - Generic standards is divided into five parts: GB/T 17799.1 Immunity for residential, commercial and light-industrial environments; GB/T 17799.2 Immunity for industrial environments; GB 17799.3 Emission standard for residential, commercial and light-industrial environments; GB 17799.4 Emission standard for industrial environments; GB/T 17799.5-2012 Indoor equipment - High-altitude electromagnetic pulse (HEMP) immunity.

Main changes from GB 17799.3-2001

Eight terms have been added: cable port, telecommunication/network port, power port, public mains network, low voltage, direct-current network, low-voltage a.c. power port and highest internal frequency.

Eight abbreviations have been added.

The description of the locations has been brought into Clause 1, Scope.

Clause 8, measurement uncertainty, has been added.

Clause 9, application of limits in series-production conformity testing, has been added.

Clause 10, an explanation of conformity with the standard, has been added.

Clause 9 of the former standard, emission limits, has been reworked as Clause 11, emission test requirements: Table 1 of the former standard, emission, has been split into Table 1 and Table 2, which state the emission test requirements for the enclosure port and for the low-voltage a.c. power port respectively. The FAR and TEM cell test methods have been brought into the enclosure port measurement methods, and enclosure port test limit requirements for 1 GHz to 6 GHz have been added. Test requirements for 0 Hz to 2 kHz at the low-voltage a.c. power port have been added for equipment above 16 A and below 75 A. Table 3, d.c. power port, and Table 4, telecommunication/network port, test limit requirements have been added.

The former Annex A has been deleted.