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National Standard
of The People's Republic of China

GB/T 17626.11-2008/IEC 61000-4-11:2004
Replacing GB/T 17626.11-1999

Electromagnetic compatibility – Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests

(IEC 61000-4-11:2004, IDT)

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Preface

GB/T 17626 EMC Testing and Measurement Techniques currently includes the following components:

GB/T 17626.1-2006 Electromagnetic compatibility Testing and measurement techniques Overview of immunity tests

GB/T 17626.2-2006 Electromagnetic compatibility Testing and measurement techniques Electrostatic discharge immunity test

GB/T 17626.3-2006 Electromagnetic compatibility Testing and measurement techniques Radiated, radio-frequency, Electromagnetic field immunity test

GB/T 17626.4-2006 Electromagnetic compatibility Testing and measurement techniques Electrical fast transient/burst immunity test

GB/T 17626.5-2006 Electromagnetic compatibility Testing and measurement techniques Surge immunity test

GB/T 17626.6-2006 Electromagnetic compatibility Testing and measurement techniques Immunity to conducted disturbance, induced by radio-frequency fields

GB/T 17626.7-2006 Electromagnetic compatibility Testing and measurement techniques --General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto

GB/T 17626.8-1998 Electromagnetic compatibility Testing and measurement techniques Power frequency magnetic field immunity test

GB/T 17626.9-2006 Electromagnetic compatibility Testing and measurement techniques--Pulse magnetic field immunity test

GB/T 17626.10-2006 Electromagnetic compatibility Testing and measurement techniques --Damped oscillatory magnetic field immunity test

GB/T 17626.11-2006 Electromagnetic compatibility Testing and measurement techniques Voltage dips, short interruptions and voltage variations immunity test

GB/T 17626.12-2006 Electromagnetic compatibility Testing and measurement techniques --Oscillatory waves immunity test

GB/T 17626.13-2006 Electromagnetic compatibility Testing and measurement techniques-- Harmonics and interharmonics including mains signaling at a.c. power port, low frequency immunity test

GB/T 17626.14-2006 Electromagnetic compatibility Testing and measurement techniques --Voltage fluctuation immunity test

GB/T 17626.16-2006 Electromagnetic compatibility Testing and measurement techniques--Test for immunity to conducted, common mode disturbances in the frequency range 0Hz to 150kHz

GB/T 17626.17-2006 Electromagnetic compatibility Testing and measurement techniques --Ripple on d.c. input power port immunity test

GB/T 17626.27-2006 Electromagnetic compatibility Testing and measurement techniques --Unbalance immunity test

GB/T 17626.28-2006 Electromagnetic compatibility Testing and measurement techniques-- Variation of power frequency, immunity test

GB/T 17626.29-2006 Electromagnetic compatibility Testing and Measurement Techniques: Voltage Dips, Short Interruptions and Voltage Variations on DC Input Port Immunity Test

This Standard is the Part 11 of GB/T 17626.

This Standard is equivalent to IEC 61000-4-11:2004 (Ed2.0).

This Standard replaces GB/T 17626.11- 1999 Electromagnetic compatibility Testing and measurement techniques Voltage dips, short interruptions and voltage variations immunity test.

This Standard has the following main difference from GB/T 17626.11-1999:

—add Electromagnetic compatibility--Guide to the drafting of electromagnetic compatibility standards in the normative reference.

—add 3 terms: 3.5 residual voltage, 3.7 calibration, 3.8 verification

—add test levels for voltage dips, and give the preferred duration for each level.

—adjust the duration for short interruptions.

—Annex B is changed to describe Electromagnetic environment classes.

Annex A and Annex B of this specification are normative annexes, and Annex B and C are

informative annex.

The specification is proposed and managed by China National EMC Standardization Technical Committee (SAC/TC 246).

This Standard is developed by Shanghai Electric Apparatus Research Institute (Group) Co. Ltd. and The Third Research Institute of China Electronics Technology Group Corporation.

The specification is drafted by Shou JianXia, Xing Lin, Lin Jingping He Aiying, Qian Xiaohua, Cheng Liling.

This Standard replaces all the previous releases.

— GB/T 17626.11-1999

Electromagnetic compatibility – Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests

1 Scope

This Part of GB/T 17626 defines the immunity test methods and range of preferred test levels for electrical and electronic equipment connected to low-voltage power supply networks for voltage dips, short interruptions, and voltage variations.

This Standard applies to electrical and electronic equipment having a rated input current not exceeding 16 A per phase, for connection to 50 Hz or 60 Hz a.c. networks.

It does not apply to electrical and electronic equipment for connection to 400 Hz a.c. networks. Tests for these networks will be covered by future IEC standards.

The objective of this Standard is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to voltage dips, short interruptions and voltage variations.

NOTE Voltage fluctuation immunity tests are covered by GB/T 17626.14-2006.

The test method documented in this Part of GB/T 17626 describes a consistent method to assess the immunity of equipment or a system against a defined phenomenon. As described in GB/Z 18509-2001, this is a basic EMC publication for use by product committees of the IEC. As also stated in GB/Z 18509-2001, the IEC product committees are responsible for determining whether this immunity test standard shall be applied or not, and, if applied, they

are responsible for defining the appropriate test levels. The EMC Standardization Technical committee 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.

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.

GB/T 4365-2003 Terminology for radio interference

GB/Z 18509-2001 Electromagnetic compatibility - Guide to the drafting of electromagnetic compatibility standards

IEC 61000-2-8:2002 Electromagnetic compatibility (EMC) - Part 2-8: Environment-Voltage dips and short interruptions on public electric power supply systems with statistical measurement results

3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

3.1

basic EMC standard

standard giving general and fundamental conditions or rules for the achievement of EMC, which are related or applicable to all products and systems and serve as reference documents for product committees

NOTE As determined by the Advisory Committee on Electromagnetic Compatibility (ACEC), see GB/Z 18509-2001.

3.2

—temporary loss of function or degradation of performance, the correction of which requires operator intervention;
—loss of function or degradation of performance which is not recoverable, owing to damage to hardware or software, or loss of data.

The manufacturer's specification may define effects on the EUT which may be considered insignificant, and therefore acceptable.

This classification may be used as a guide in formulating performance criteria, by committees responsible for generic, product and product-family standards, or as a framework for the agreement on performance criteria between the manufacturer and the purchaser, for example where no suitable generic, product or product-family standard exists.

NOTE The performance levels may be different for voltage dip tests and short interruption tests as well as for voltage variations tests, if this optional test has been required.

10 Test report

The test report shall contain all the information necessary to reproduce the test. In particular, the following shall be recorded:
－the items specified in the test plan required by Clause 8;
－identification of the EUT and any associated equipment, e.g. brand name, product type, serial number;
－identification of the test equipment, e.g. brand name, product type, serial number;
－any special environmental conditions in which the test was performed, for example shielded enclosure;
－any specific conditions necessary to enable the test to be performed;
－performance level defined by the manufacturer, requestor or purchaser;
－performance criterion specified in the generic, product or product-family standard;
－any effects on the EUT observed during or after the application of the test disturbance, and the duration for which these effects persist;
－the rationale for the pass / fail decision (based on the performance criterion specified in the generic, product or product-family standard, or agreed between the manufacturer and the purchaser);
－any specific conditions of use, for example cable length or type, shielding or grounding, or EUT operating conditions, which are required to achieve compliance.

References

[1] GB/T 18039.4-2003 Electromagnetic compatibility-Environment-Compatibility levels in industrial plants for low-frequency conducted disturbances(IEC 61000-2-4:1994, IDT)
[2] IEC 61000.14-2005 EMC -Testing and Measurement Techniques: Voltage fluctuation immunity test (IEC 61000-4-14:2002, IDT)

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