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

GB/T 21419-2021

**Transformers, power supplies, reactors and similar products -
EMC requirements**

Issued on: December 31, 2021

Implemented on: July 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents"

drafted:

This document replaces GB/T 21419-2013 "Safety Electromagnetic Compatibility (EMC) Requirements for Transformers, Reactors, Power Supply Units and Their Combinations"

Compared with GB/T 21419-2013, in addition to structural adjustment and editorial changes, the main technical changes are as follows:

- Adjusted terms and definitions, and added abbreviations (see Chapter 3, Chapter 3 of the:2013 edition);
- Added relevant provisions on series product testing (see 4:2);
- Added relevant requirements for measurement uncertainty (see 4:2);
- Increased requirements for production documents (see Chapter 5);
- The relevant provisions of the test have been adjusted and improved (see Chapters 6 to 11 and Appendix A, Chapters 5 and:2013):

Chapter 6):

This document uses the redrafted law to modify and adopt IEC 62041:2017 "Transformers, power supply units, reactors and similar products electromagnetic

Compatibility (EMC) Requirements":

The technical differences between this document and IEC 62041:2017 and the reasons are as follows:

- In order to standardize the technical content of the standard, the Appendix A of the IEC original text is adjusted from an informative appendix to a normative appendix:

The following editorial changes have also been made to this document:

- Adjusted the structure of the first and second columns of Table A:11 ~ Table A:16;

--- Change CISPR32:2015 to undated reference;

--- Adjust IEC 61000-4-20:2010 from references to normative references:

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

1 Scope

This document specifies the electromagnetic compatibility of emission and immunity of transformers, reactors and power supply units in the frequency range of 0Hz to 400GHz:

content requirements: Frequency bands for which there are no specified limits do not need to be tested:

This document applies to transformers, reactors and power supply units within the scope of GB/T 19212.1:

For transformers, reactors and electrical equipment made to be supplied with or used in conjunction with electrical appliances or electrical equipment

source device, the relevant electromagnetic compatibility (EMC) standards for the appliance or electrical equipment apply:

This document refers to normal working conditions only: Other operating conditions of transformers, reactors and power supply units (e:g: for testing purposes in

Simulation of faults in electrical circuits, or effects on functional safety due to electromagnetic phenomena, or evaluation of persons exposed to electromagnetic fields) are not included in this document

consider:

Each port has specific requirements, and if the requirements are inconsistent, the strictest requirements take precedence:

This document may also be used as a guideline for testing transformers, reactors and power supply units when they are individually tested prior to their incorporation into electrical appliances or equipment:

guide:

Note: EUT (equipment under test) in this document refers to transformers, reactors and power supply units (if applicable):

This document does not apply to:

--- Uninterruptible Power Supply Units (UPS) included in IEC 62040 (all parts);

--- Power supply units covered by IEC 61204 [ie IEC 60950-1, IEC 61010-1, IEC 60601-1

and IEC 60065

Direct current-to-direct current (DC-DC) converters, DC power supply and distribution equipment, and power supply units used in the equipment included];

--- Power supply units and converters for use with or within products covered by IEC 61347 (all parts):

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to

this document:

GB/T 6113:102-2018 Specification for Radio Disturbance and Immunity Measurement Equipment and Measurement Methods Part 1-2: Radio Disturbance

Coupling device for conducted disturbance measurement with immunity measuring equipment (CISPR16-1-2:2014, IDT)

GB/T 6113:104-2016 Specification for Radio Disturbance and Immunity Measurement Equipment and Measurement Methods Part 1-4: Radio Disturbance

Antenna and test site for radiated disturbance measurement of interference and immunity measurement equipment (CISPR16-1-4:2012, IDT)

GB/T 6113:201-2018 Specification for Radio Disturbance and Immunity Measurement Equipment and Measurement Methods Part 2-1: Radio Disturbance

and Immunity Measurement Method Conducted Disturbance Measurement (CISPR16-2-1:2014, IDT)

IEC 60050-161 International Electrotechnical Vocabulary Part 161: Electromagnetic Compatibility (International electrotechnical vocabu-

lary-Part 161:Electromagneticcompatibility)

IEC 61000-3-2 Electromagnetic Compatibility (EMC) Part 3-2: Limits for Harmonic Current Emission Limits (Equipment Input Current $\leq 16A$ per Phase)

[Electromagneticcompatibility(EMC)-Part 3-2:Limits-Limitsforharmoniccurrentemissions (equipmentinputcurrent $\leq 16A$ perphase)]

IEC 61000-3-3 Electromagnetic Compatibility (EMC) Part 3-3: Limits for devices with rated current $\leq 16A$ per phase and unconditional access