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GB/T 6113.104-2021 / CISPR 16-1-4:2019

Replacing GB/T 6113.104-2016

Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods – Part 1-4: Radio Disturbance and Immunity Measuring Apparatus – Antennas and Test Sites for Radiated Disturbance Measurements

无线电骚扰和抗扰度测量设备和测量方法规范 第 1-4 部分：无线电骚扰和抗扰度测量设备 辐射骚扰测量用天线和试验场地

(CISPR 16-1-4:2019, IDT)

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Foreword

This document was drafted as per the rules specified in GB/T 1.1-2020 *Directives for Standardization – Part 1: Rules for the Structure and Drafting of Standardizing Documents*.

GB/T(Z) 6113 *Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods* is the basic standard for electromagnetic compatibility.

This Document is Part 1-4 of GB/T (Z) 6113. GB/T (Z) 6113 has published the following parts:

Part 1: Radio Disturbance and Immunity Measuring Apparatus

--- Part 1-1: Radio Disturbance and Immunity Measuring Apparatus – Measuring Apparatus;

--- Part 1-2: Radio Disturbance and Immunity Measuring Apparatus – Coupling Devices for Conducted Disturbance Measurements;

--- Part 1-3: Radio Disturbance and Immunity Measuring Apparatus – Ancillary Equipment – Disturbance Power;

--- Part 1-4: Radio Disturbance and Immunity Measuring Apparatus – Antennas and Test Sites for Radiated Disturbance Measurements;

--- Part 1-5: Radio Disturbance and Immunity Measuring Apparatus – Antenna Calibration Sites and Reference Test Sites for 5MHz ~ 18GHz;

--- Part 1-6: Radio Disturbance and Immunity Measuring Apparatus – EMC Antenna Calibration.

Part 2: Methods of Measurement of Radio Disturbance and Immunity

--- Part 2-1: Methods of Measurement of Radio Disturbance and Immunity – Conducted Disturbance Measurement;

--- Part 2-2: Methods of Measurement of Radio Disturbance and Immunity – Measurement of Disturbance Power;

--- Part 2-3: Methods of Measurement of Radio Disturbance and Immunity – Radiated Disturbance Measurements;

--- Part 2-4: Methods of Measurement of Radio Disturbance and Immunity – Immunity Measurement;

--- Part 2-5: On-site Measurement of Disturbance Emission from Large Equipment.

Part 3: CISPR Technical Reports

--- Part 3: CISPR Technical Reports.

Part 4: Uncertainties, Statics and Limit Modelling

--- Part 4-1: Uncertainties, Statics and Limit Modelling - Uncertainty of Standardized EMC Testing;

--- Part 4-2: Uncertainties, Statics and Limit Modelling – Measurement Instrumentation Uncertainty;

--- Part 4-3: Uncertainties, Statics and Limit Modelling - Statistical Considerations for the Determination of EMC Compliance of Bulk Products;

--- Part 4-4: Uncertainties, Statics and Limit Modelling – Complaint Statistics and Calculation Model of Limits;

--- Part 4-5: Uncertainties, Statics and Limit Modelling – Conditions of Use for Alternative Test Methods.

This Document replaced GB/T 6113.104-2016 *Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods - Part 1-4*: *Radio Disturbance and Immunity Measuring Apparatus – Antennas and Test Sites for Radiated Disturbance Measurements*. Compared with GB/T 6113.104-2016, the major technical changes of this Document are as follows besides the structural adjustment and editorial modifications:

--- Add three terms such as "tested equipment space", etc.; and delete the term "free space antenna coefficient" (see 3.1 of this Edition; 3.1 of 2016 Edition);

--- Change the measurement method of antenna symmetry (see 4.5.4 of this Edition; 4.5.4 of 2016 Edition);

--- Change the measurement method of cross-polarization (see 4.5.5 of this Edition; 4.5.5 of 2016 Edition);

--- Increase the lobe pattern requirements of the 1GHz~18GHz receiving antenna (see 4.6.2.2 and 4.6.2.3 of this Edition);

--- Increase the NSA value for the measurement distance of 5m (see 6.5.1 of this Edition);

--- Change the relevant content of Annex A (see Annex A of this Edition; Annex A of 2016 Edition);

--- Delete the main text of Annex B (see Annex B of 2016 Edition).

This Document used the translation method to equivalently adopt CISPR 16-1-4:2019 *Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods – Part 1-4: Radio Disturbance and Immunity Measuring Apparatus – Antennas and Test Sites for Radiated Disturbance Measurements*.

The Chinese documents that have a consistent correspondence with the international documents normatively cited in this Document are as follows:

--- GB/T 4365-2003 Electrotechnical Terminology - Electromagnetic Compatibility (IEC 60050(161):1990+A1:1997+A2:1998, IDT);

--- GB/T 6113.101-2021 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods - Part 1-1: Radio Disturbance and Immunity Measuring Apparatus - Measuring Apparatus (CISPR 16-1-1:2019, IDT);

--- GB/T 6113.105-2018 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods - Part 1-5: Radio Disturbance and Immunity Measuring Apparatus - Antenna Calibration Sites and Reference Test Sites for 5 MHz ~ 18 GHz (CISPR 16-1-5:2014, IDT);

--- GB/T 6113.106-2018 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods - Part 1-6: Radio Disturbance and Immunity Measuring Apparatus -EMC Antenna Calibration (CISPR 16-1-6:2014, IDT);

--- GB/Z 6113.3-2019 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods - Part 3: CISPR Technical Reports (CISPR/TR 16-3:2010+A1:2012+A2:2015, IDT);

--- GB/T 6113.402-2018 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods - Part 4-2: Uncertainties, Statistics and Limit Modelling - Measurement Instrumentation Uncertainty (CISPR/TR 16-4-2:2014, IDT).

The following editorial modifications have been made to this Document:

--- International Standard Terminology 3.1.14, according to the given expression, the S parameter is defined as the transmission line parameter S_{21}.

Please note some contents of this Document may involve patents. The issuing agency of this Document shall not assume the responsibility to identify these patents.

This Standard was proposed by and under the jurisdiction of National Technical Committee on Radio Interference Standardization Administration of China (SAC/TC 79).

Drafting organizations of this Standard: China Electronics Standardization Institute; Beijing Daze Technology Co., Ltd.; Hao Feng Radio Frequency Technology (Shanghai) Co., Ltd.; Xiamen H-Noble Technology Co., Ltd.; Beijing University of Posts and Telecommunications; National Institute of Metrology, China; Southeast University; Hefei Supervising & Testing Research Institute for Product Quality; Alto RF Technology (Shanghai) Co., Ltd.; Guangzhou CEPREI Calibration and Testing Center Service Co., Ltd.; China Automotive Engineering Research Institute Co., Ltd.; Beijing Kehuan Century EMC Technology Limited Liability Company; CATARC Automotive Test Centre (Tianjin) Co., Ltd.; State Radio Monitoring Center Testing Center; Dalian Product Quality Inspection and Testing Institute Co., Ltd.; Fujian

Specification for Radio Disturbance

and Immunity Measuring Apparatus and Methods

– Part 1-4: Radio Disturbance and Immunity Measuring Apparatus

– Antennas and Test Sites for Radiated Disturbance Measurements

1 Scope

This Document specifies the characteristics and performance of equipment for the measurement of radiated disturbances in the frequency range 9 kHz ~ 18 GHz. Specifications for antennas and test sites are included.

NOTE: In accordance with IEC Guide 107, CISPR 16-1-4 is a basic EMC publication for use by product committees of the IEC. As stated in Guide 107, product committees are responsible for determining the applicability of the EMC standard. CISPR and its sub-committees (corresponding to SAC/TC 79 national technical committee and sub-committee in China) are prepared to cooperate with product committees in the evaluation of the value of particular EMC tests for specific products.

The requirements of this Document apply at all frequencies and for all levels of radiated disturbances within the CISPR indicating range of the measuring equipment.

Methods of measurement of radiated disturbance are covered in GB/T 6113.203, further information on radio disturbance is given in Part 3 of CISPR 16, and uncertainties, statistics and limit modelling are covered in Part 4 of CISPR 16.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 6113.203-2020 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods - Part 2-3: Methods of Measurement of Radio Disturbance and Immunity – Radiated Disturbance Measurements (CISPR 16-2-3:2016, IDT)

CISPR 16-1-1 Specification for Radio Disturbance and Immunity Measuring Apparatus and Methods – Part 1-1: Radio Disturbance and Immunity Measuring Apparatus –

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