

ICS 33.100

L 06



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

中华人民共和国国家标准

GB/T 6113.104-2008/CISPR 16-1-4: 2005

Replace GB/T 6113.1-1995

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

**Part 1-4: Radio disturbance and immunity measuring
apparatus-Ancillary equipment - Radiated disturbances**

**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 辅助设备 辐射骚扰**

(CISPR 16-1-4: 2005, IDT)

Issued on January 12, 2008

Implemented on September 01, 2008

**Issued by General Administration of Quality Supervision, Inspection
and Quarantine of the People's Republic of China**

**Standardization Administration of the People's Republic of
China**

Contents

Foreword.....	1
1 Scope.....	1
2 Normative References.....	1
3 Definitions.....	3
4 Antennas for measurement of radiated radio disturbance.....	6
5 Test sites for measurement of radio disturbance field strength for the frequency range of 30 MHz to 1 000 MHz.....	18
6 Reverberating chamber for total radiated power measurement.....	49
7 TEM cells for immunity to radiated disturbance measurement.....	53
8 Test sites for measurement of radio disturbance field strength for the frequency range 1 GHz to 18 GHz.....	53
Annex A (Normative) Parameters of broadband antennas.....	54
Annex B (Normative) Monopole (1 m rod antenna) performance equations and characterization of the associated antenna matching network.....	59
Annex C (Normative) Loop antenna system for magnetic field induced current measurements in the frequency range of 9 kHz to 30 MHz.....	66
Annex D (Informative) Construction details for open area test sites in the frequency range of 30 MHz to 1 000 MHz (clause 5).....	77
Annex E (Normative) Validation procedure of the open area test site for the frequency range of 30 MHz to 1 000 MHz (clause 5).....	82
Annex F (Informative) Basis for 4 dB site acceptability criterion (clause 5).....	92
Annex NA (Informative) Comparison table of clauses between GB/T 6113.104-2008 and GB/T 6113.1-1995.....	95

Foreword

GB/T6113.104 equivalent standard adopting CISPR16-1-4 (Version 1.2): 2005 *Specification for Radio Disturbance and Noise Immunity Measuring Equipment and Measuring Methods Part 1-4: Radio Disturbance and Noise Immunity Measuring Equipment Auxiliary Equipment Radiation Disturbance.*

Given IEC/CISPR16 is a series of basic standards for electromagnetic compatibility with great length and much content, in order to facilitate the formulation, maintenance and use of the Standard, the IEC/CISPR branch decided to make major structural adjustment to the Standard in 2002, dividing the original four parts into 14 parts, and adding to 15 parts in 2006, which were issued successively after November 2003. In accordance with the principle of adopting by equation, our country will successively complete formulation and revision of corresponding national standards. The new and original national standards of the series and corresponding relation between IEC/CISPR16 series of standards / publications are as follows:

Original standard number and name	New standard number and name
GB/T6113.1—1995 (eqvCISPR16-1:993) <i>Specification for Radio Disturbance And Noise Immunity Measuring Equipment</i>	GB/T6113.101—2008 (CISPR16-1-1:2006, IDT) Part 1-1: Radio disturbance and noise immunity measuring equipment Measuring equipment
	GB/T 6113.102—2008(CISPR16-1-2:2006, IDT) Part 1-2: Radio disturbance and noise immunity measuring equipment Auxiliary equipment Conducted disturbance
	GB/T6113.103—2008 (ISPR16-1-3:004, IDT) Part 1-3: Radio disturbance and noise immunity measuring equipment Auxiliary equipment Disturbance power
	GB/T6113.104—2008 (CISPR16-1-4:2005, IDT) ¹⁾ Specification for radio disturbance and noise immunity measuring equipment and measuring methods

	Auxiliary equipment Radiation disturbance
	GB/T6113.105—2008 (CISPR16-1-5:2003, IDT) Part 1-5: Radio disturbance and noise immunity measuring equipment 30MHz – 1,000MHz antenna calibration test site
GB/T6113.2—1998 (eqvCISPR16-2:1996) <i>Radio Disturbance And Noise Immunity Measuring Methods</i>	GB/T6113.201—2008 (CISPR16-2-1:2003, IDT) Part 2-1: Radio disturbance and noise immunity measuring methods Conducted disturbance measurement
	GB/T6113.202—2008 (CISPR16-2-2:2004, IDT) Part 2-2: Radio disturbance and noise immunity measuring methods Disturbance power measurement
	GB/T6113.203—2008 (CISPR16-2-3:2003, IDT) Part 2-3: Radio disturbance and noise immunity measuring methods Radiation disturbance measurement
GB/T6113.2—1998 (eqvCISPR16-2:1996) <i>Radio Disturbance and Noise Immunity Measuring Methods</i>	GB/T6113.204—2008 (CISPR16-2-4:2003, IDT) Part 2-4: Radio disturbance and noise immunity measuring methods Noise immunity measurement
CISPR16-3:2000 Reports and recommendations of CISPR	GB/Z6113.3—2006 (CISPR16-3:2003, IDT) Part 3: Technical report on radio disturbance and noise immunity measurement
	GB/Z6113.401—2007 (CISPR16-4-1:2003, IDT) Part 4-1: Uncertainty, statistics and limit modeling Uncertainty of standardized EMC test
	GB/T6113.402—2006 (CISPR16-4-2:2003, IDT)

Part 4-2: Uncertainty, statistics and limit modeling

CISPR16-4:2002 Uncertainty in EMC measurements	Uncertainty of measuring equipment and facilities
	GB/Z6113.403—2007 (CISPR16-4-3:2004, IDT) Part 4-3: Uncertainty, statistics and limit modeling Statistical considerations defined by EMC conformity of bulk products
	GB/Z6113.404-2007 (CISPR16-4-4:2003, IDT) Part 4-4: Uncertainty, statistics and limit modeling Calculation model of statistics and limiting value of complaining
	GB/Z6113.405 (CISPR16-4-5:2006, IDT) ²⁾ Part 4-5: Uncertainty, statistics and limit modeling Replace use condition of test method
<p>1) This boldface is the part of the Standard;</p> <p>2) To be formulated.</p> <p>Note 1: National standard names except GB/T6113.104 shall be based on the Standard names after formulation, or revision and publication.</p> <p>Note 2: Before adjustment, CISPR16 series of standards have no corresponding national standards with CISPR16-3 and CISPR16-4.</p>	

Compared with CISPR16-1-4 (Version 1.2): 2005, GB/T6113.104 mainly has the following editorial changes:

1. Added the foreword and introduction of national standards;
2. The standing-wave ratio is unified to use single digital, such as VSWR is no greater than 1.2;
3. Corrected the error number of partial figures;
4. Added numbering of equation in Annex C, to facilitate narration and reference of the text;
5. According to CISPR 16-1-4 (Version 2.1): 2007, corrected the titles and related contents of 4.2.2 and 4.3.3 and the title of 4.4.2, see Editor's note of that page.
6. For convenience of the reader, added Annex NA "GB/T6113.104-2008 with GB/T6113.1-1995 Relevant Sections Comparison" based on equivalent standard.

Since the date of issuance, this Part and GB/T6113.101-2008, GB/T6113.102-2008,

GB/T6113.103-2008 and GB/T6113.105-2008 are combined together to replace GB / T6113.1-1995.

Compared with the corresponding content of GB/T6113.1-1995, this Part (GB/T6113.104) has following major changes:

1. Added 3.2-3.13 of 12 terms;
2. Added 4.4.2 "Antenna Balance";
3. Added 4.4.3 "Cross-Polarization Performance of Antenna"
4. Added antenna requirements of 4.6 "Frequency Scope of 1 GHz-18 GHz";
5. Added 4.7 "Configuration of Special Antenna";
6. Added 5.7 "Suitability of Test Site with Grounding Plate";
7. Added 5.8 "Suitability of Test Site without Grounding Plate";
8. Added normative Annex A "Broadband Antenna Parameters";
9. Added normative Annex B "Characteristic Equation of Monopole Antenna (1m rod antenna) and Characteristics of Related Antenna Matching Network";
10. Added normative Annex C "Loop Antenna System Used in Measurement of Magnetic Field Induced Current within the Frequency Scope of 9kHz - 30MHz";
11. For convenience of the reader, added Annex NA "GB/T6113.104-2008 with GB/T6113.1-1995 Relevant Sections Comparison" based on equivalent standard.

Annex A, Annex B, Annex C and Annex E of this Part are Normative Annexes, while Annex F and Annex NA are informative Annexes.

The Standard is proposed by the National Technical Committee for Standardization on Radio Interference and under the jurisdiction of it.

This Part is drafted by the following units: China Electronics Standardization Institute of Ministry of Information Industry, Southeast University, Beijing Jiaotong University, National Institute of Metrology China, the Fifth Electronics Research Institute of Ministry of Information Industry, Shanghai Electrical Apparatus Research Institute (Group) Co., Ltd., Guangzhou Weikai Testing Technology Research Institute, Shanghai Institute of Measurement and Testing Technology and State Radio Regulation of China.

Main drafters of this Part: Chen Li, Hu Jingsen, Jiang Quanxing, Wen Yinghong, Zhang Linchang, Cui Qiang, Yang Chunrong, Shou Jianxia, Huang Pan, Gong Zeng, Huang Chubin, Zhang Ke, Wang Zheng and Zhu Wenli.

Introduction

GB/T6113.104 is the integral part of the basic standard GB/T6113. This Part includes eight Chapters and seven Annexes. It is mainly involved in technical specifications for radiation disturbance and radiation noise immunity measuring auxiliary equipment and facilities with frequency scope of 9kHz-18GHz. The auxiliary equipment for radiation measurement is mainly antenna, and the measuring facilities include the test site for measuring radio disturbance field intensity with frequency scope of 30MHz-1GHz and test site for measuring disturbance field intensity with frequency scope of 1GHz-18GHz, reverberation chamber for measuring total radiation power, and TEM cell for measuring radiation noise immunity. This Part of GB/T6113 defines the test antenna, test site and performance parameters used for describing antenna or site in Chapter 3; regulating performances of different types of antennas based on different frequency scope in Chapter 4, which include magnetic field antenna, electric field antenna, composite antenna and a special antenna - loop antenna system (LAS); regulating an open test site and its confirmation procedure, the applicability and adjustment criteria of alternative test site, and assessment of test table and antenna tower; describing the structure and measuring methods of reverberation chamber in Chapter 6; regulating the characteristics of test site with frequency scope of 1GHz-18GHz in Chapter 8, which include reference test site, confirmation of test site and alternative test site. In addition, it also describes in details the broadband antenna parameters, the characteristics of antenna of 1m rod, the loop antenna system for measuring induced current in magnetic field with frequency scope of 9kHz-30MHz and confirmation procedures of test site of 30MHz-1GHz respectively in Normative Annex A, B, C and E, and provides some background information related to the above content in Informative Annex D and F. For some reasons, Chapter 7 TEM cell only gives the title, at present, CISPR branch of the international standard framer is still studying and formulating.

Specification for radio disturbance and immunity measuring apparatus and methods –

Part 1-4: Radio disturbance and immunity measuring apparatus-Ancillary equipment - Radiated disturbances

1 Scope

This part of GB/T 6113 is designated a basic standard, which specifies the characteristics and performance of equipment for the measurement of radiated disturbances in the frequency range 9 kHz to 18 GHz.

Specifications for ancillary apparatus are included for: antennas and test sites, TEM cells, and reverberating chambers.

The requirements of this part of GB/T 6113 shall be complied with at all frequencies and for all levels of radiated disturbances within the CISPR indicating range of the measuring equipment.

Methods of measurement are covered in GB/T 6113.203, and further information on radio disturbance is given in GB/Z 6113.3. Uncertainties, statistics and limit modelling are covered in Part 4 of GB/T 6113.

2 Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB 4343.1-2003 Electromagnetic compatibility—Requirements for household appliances, electric tools and similar apparatus—Part 1: Emission (CISPR 14-1:2000+AI,IDT)

GB/T 6113.101-2008 Specification for radio disturbance and immunity measuring

完整版本请在线下单

或咨询：

TEL: 400-678-1309

QQ: 19315219

Email: info@lancarver.com

<http://www.lancarver.com>

线下付款方式：

1. 对公账户：

单位名称：北京文心雕语翻译有限公司

开户行：中国工商银行北京清河镇支行

账 号：0200 1486 0900 0006 131

2. 支付宝账户：info@lancarver.com

注：付款成功后，请预留电邮，完整版本将在一个工作日内通过电子 PDF 或 Word 形式发送至您的预留邮箱，如需索取发票，下单成功后的三个工作日内安排开具并寄出，预祝合作愉快！



银联特约商户