

ICS 33.160.20

CCS M 74



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

**GB/T 19954.2-2016**

---

**Electromagnetic compatibility - Product family standard for  
audio, video, audio-visual and entertainment lighting control  
apparatus for professional use - Part 2: Immunity**

**(English Translation)**

**Issued on: August 29, 2016**

**Implemented on: March 1, 2017**

---

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

## Table of Contents

|                                  |    |
|----------------------------------|----|
| Foreword...                      | 3  |
| 1 Scope...                       | 5  |
| 2 Normative references...        | 6  |
| 3 Terms and definitions...       | 7  |
| 4 Electromagnetic environment... | 9  |
| 5 Disturbance phenomenon...      | 10 |
| 6 Immunity requirements...       | 10 |
| 7 Test conditions...             | 14 |
| 8 Buyer/user documentations...   | 17 |

### Foreword

GB/T 19954 "Electromagnetic compatibility - Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use" includes the following two parts.

- Part 1. Emission;
- Part 2. Immunity.

This Part is Part 2 of GB/T 19954.

This Part is drafted in accordance with the rules given in GB/T 1.1-2009.

This Part replaces GB/T 19954.2-2005 "Electromagnetic compatibility - Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use - Part 2. Immunity".

Main changes in this Part compared with GB/T 19954.1-2005 are as follows.

- ADD the definition of screened-cable port in Clause 3;
- ADJUST the location of Clause 6 Immunity requirements, Clause 7 Test conditions and Clause 8 Buyer/user documentations in this Part; ADJUST the clause and article number accordingly;
- ADD additional information that shall be stated by the manufacturer in Clause 8

Buyer/user documentations;

- MODIFY the calibration and test method of BP1 type port's common-mode

immunity in Annex B;

- ADD Annex D Performance indicators for the objective evaluation of the immunity test;

This Part is proposed by the 3rd Research Institute of China Electronics Technology Group Corporation.

This Part is under the jurisdiction of the National Technical Committee on Radio Interference of Standardization Administration of China (SAC/TC 79).

Drafting organizations of this Part. 3rd Research Institute of China Electronics Technology Group Corporation, China Quality Certification Center, Nanjing Rongxiang Test Equipment Co., Ltd.

Main drafters of this Part. Zhu Lin, Ding Shaohua, Shen Qixue, Lin Jingping, Xu Wei, Electromagnetic compatibility - Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use - Part 2. Immunity

## 1 Scope

This Part of GB/T 19554 specifies immunity test requirements, test signals, performance criteria and test methods for apparatus, involving immunity to continuous and transient, conducted and radiated electromagnetic disturbances, including electrostatic discharge, which are the necessary electromagnetic compatibility requirements.

This Part applies to audio, video, audio-visual and entertainment lighting control apparatus for professional use as defined in Clause 3 and apparatus used in the electromagnetic environment described in Clause 4, including the professional digital apparatus defined in 3.5 and the components specified in 7.4.

This Part specifies that the disturbance signal frequency range is 0 Hz ~ 400 GHz, but

does not make the requirements for the entire frequency band.

Annex C provides relevant information on infrared emitters with wavelengths of 0.7  $\mu\text{m}$  to 1.6  $\mu\text{m}$ .

This Part does not consider conditions of disturbance source or disturbed apparatus failure.

The apparatus defined in 3.4, 3.5 and 3.6 may be operated in any form of power supply, including.

- public low-voltage power grids;
- independent power grids with similar characteristics;
- DC power supplies for specific apparatus;
- built-in batteries of the apparatus;
- standby generators.

Some of the standards referenced in this Part may not apply to independent low-voltage power grids.

**Note 1:** In special cases, for example, when portable transmitters are in use near the apparatus, in addition to the specified limits, additional measurements may be carried out in order to improve the electromagnetic immunity of the apparatus.

This Part does not apply to.

- consumer electronics products;
- specially designed security system apparatus;
- emission apparatus designed for wireless communications.

## 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 Electrotechnical terminology - Electromagnetic compatibility

GB 9383 Sound and television broadcast receivers and associated equipment - Immunity characteristics - Limits and methods of measurement

GB/T 12060.3 Sound system equipment - Part 3. Methods of measurement on audio amplifiers

GB 17625.1 Electromagnetic compatibility - Limits - Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase)

GB/T 17626.2 Electromagnetic compatibility (EMC) - Testing and measurement techniques - Electrostatic discharge immunity test

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

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

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

GB/T 17626.6-2008 Electromagnetic compatibility - Testing and measurement techniques - Immunity to conducted disturbances induced by radio-frequency fields

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

GB 17799.4 Electromagnetic compatibility (EMC) - Generic standards - Emission standard for industrial environments

GB/Z 18039.1-2000 Electromagnetic compatibility - Environment - Classification of electromagnetic environments

IEC 60268-1 Sound system equipment - Part 1. General

ITU-R 500-4 Method for the subjective assessment of the quality of television pictures

ITU-R 562-3 Subjective assessment of sound quality - Section 10C - Audio - Frequency characteristics of sound - Broadcasting signals

### 3 Terms and definitions

The following terms and definitions and those defined in GB/T 4365 are applicable to this document.