

ICS 33.100



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

GB/T 6113.102-2025

**Specification for radio disturbance and immunity measuring apparatus and
methods - Part 1-2: Radio disturbance and immunity measuring apparatus -
Coupling devices for conducted disturbance measurements**

无线电骚扰和抗扰度测量设备和测量方法规范 第1-2部分:无线电骚扰和抗扰度测
量设备 传导骚扰测量的耦合装置

(English Translation)

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Foreword

GB/T6113 "Specification for radio disturbance and immunity measuring apparatus and methods", a basic standard of electromagnetic compatibility, consists of the following four parts.

Part 1: Radio disturbance and immunity measuring apparatus

-- Part 1-1. Radio disturbance and immunity measuring apparatus - Measuring equipment;

-- 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 - Disturbances power;

-- Part 1-4. Radio disturbance and immunity measuring apparatus - Radiated disturbance measuring antenna and test site;

-- Part 1-5. Radio disturbance and immunity measuring apparatus - Antenna calibration sites and reference test sites for 30 MHz to 1000 MHz

-- Part 1-6. Radio disturbance and immunity measuring apparatus - EMC antenna calibration.

Part 2: Methods of measurement of disturbances and immunity

- Part 2-1.Methods of measurement of disturbances and immunity - Conducted disturbance measurements;
 - Part 2-2.Methods of measurement of disturbances and immunity - Measurement of disturbance power;
 - Part 2-3.Methods of measurement of disturbances and immunity - Radiated disturbance measurements
 - Part 2-4.Methods of measurement of disturbances and immunity - Immunity measurements;
 - Part 2-5.In situ measurements of disturbing emissions produced by physically large equipment
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- Part 4-4.Uncertainties, statistics and limit modelling - Statistics of complaints and a model for the calculation of limits;
- Part 4-5.Uncertainties, statistics and limit modelling - Conditions for the use of alternative test methods.

This Part is Part 1-2 of GB/T 6113.

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

This Part replaces GB/T 6113.102-2008 "Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-2.Radio disturbance and immunity measuring apparatus - Ancillary equipment - Conducted disturbances".

Compared with GB/T 6113.102-2008, the main technical changes are as follows.

- Modify the standard's name;
- Add a "Note" to the scope according to the principle of equivalence;
- Add 7 terms and definitions (see Clause 3);
- Add abbreviations (see 3.2);

- Add longitudinal conversion loss requirements for AAN (or Y-network) for common-mode voltage measurement of category 6 (or better), category 5 (or better), and category 3 (or better) unscreened balanced pair cables (see 7.2);
- Add CDNE for the measurement of disturbance voltage in the frequency range of 30 MHz ~ 300 MHz (see Clause 9);
- Add Example CDNE set-up diagrams (see Annex J).

This Part uses the translation method to equivalently adopt CISPR 16-1-2:2014 "Specification for radio disturbance and immunity measuring apparatus and methods -Part 1-2.Radio disturbance and immunity measuring apparatus - Coupling devices for conducted disturbance measurements".

The documents of our country that have a consistent correspondence with the international documents that are referenced in this Part are as follows.

- GB/T 4365-2003 Electrotechnical terminology - Electromagnetic compatibility (IEC 60050(161):1990, IDT);
- GB/T 6113.201-2017 Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-1.Methods of measurement of disturbances and immunity - Conducted disturbance measurements (CISPR 16-2-1:2010, IDT);
- GB/T 17626.6-2008, Electromagnetic compatibility - Testing and measurement techniques - Immunity to conducted disturbances induced by radio-frequency fields (IEC 61000-4-6:2006, IDT).

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

1 Scope

This part of the GB/T 6113 series specifies the characteristics and performance of equipment for the measurement of radio disturbance voltages and currents in the frequency range 9 kHz ~ 1 GHz.

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.

3 Terms, definitions and abbreviations

radio-frequency disturbance voltage appearing between the two wires in a two-wire circuit, such as a single-phase mains supply, sometimes called the differential mode

4 Artificial mains networks

The network shall have an impedance of magnitude (150 ± 20) ohm with a phase angle not exceeding 20° , both between the equipment terminals and between the two equipment terminals joined together and the reference ground.

For the measurement of the symmetric voltage, a screened and balanced transformer is

5 Current and voltage probes

The current probe shall be constructed so as to enable the measurement of the current without disconnecting the lead under measurement.

6 Coupling units for conducted current immunity measurement

The insertion loss V_G/V_B of two identical coupling units measured according to the setup of Figure 9 should be within 9.6 dB and 12.6 dB in the frequency range 30 MHz ~ 150 MHz; V_G is the reading of the receiver when the generator and receiver are directly connected together; V_B is the reading obtained from the measuring receiver after inserting the coupling unit.

7 Coupling devices for measuring signal lines

AANs are used to measure (or inject) asymmetric (common mode) voltages on unshielded symmetric signal (e.g., telecommunication) lines while rejecting the symmetric (differential mode) signal.

8 The artificial hand and series RC element the artificial hand consists of a (strip of) metal foil of specified dimensions, which is placed on or wrapped around that part of the equipment normally touched by the user's hand, in a specific configuration, described as follows.

The lead length between the RC element and the metal foil shall be 1 m. If the test set-up requires a longer lead length, the total inductance of the lead shall be less than 1.4 μH if the frequency of measurement is near 30 MHz.

9 CDNE for measurement of disturbance voltage in frequency range 30 MHz ~ 300 MHz