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CCS L06



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

GB/T 17626.12-2023

**Electromagnetic compatibility - Testing and measurement
techniques - Part 12: Ring wave immunity test**

电磁兼容 试验和测量技术 第12部分：振铃波抗扰度试验

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Foreword

This document is drafted in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents": This document is part 12 of GB/T 17626 "Electromagnetic Compatibility Testing and Measurement Techniques": GB/T 17626 has released the following parts:

---GB/T 17626:1-2006 Electromagnetic Compatibility Test and Measurement Technology Immunity Test General;

---GB/T 17626:2-2018 Electromagnetic Compatibility Test and Measurement Technology Electrostatic Discharge Immunity Test;

---GB/T 17626:3-2016 Electromagnetic Compatibility Test and Measurement Technology Radio Frequency Electromagnetic Field Radiation Immunity Test;

---GB/T 17626:4-2018 Electromagnetic Compatibility Test and Measurement Technology Electrical Fast Transient Burst Immunity Test;

---GB/T 17626:5-2019 Electromagnetic compatibility test and measurement technology surge (shock) immunity test;

---GB/T 17626:6-2017 Electromagnetic Compatibility Test and Measurement Technology Conducted Disturbance Immunity of Radio Frequency Field Induction;

---GB/T 17626:7-2017 Electromagnetic Compatibility Test and Measurement Technology Power Supply System and Connected Equipment Harmonics and Interharmonics Measurement and Measurement Instrument Guidelines;

- GB/T 17626:8-2006 Electromagnetic Compatibility Test and Measurement Technology Power Frequency Magnetic Field Immunity Test;
- GB/T 17626:9-2011 Electromagnetic Compatibility Test and Measurement Technology Pulse Magnetic Field Immunity Test;
- GB/T 17626:10-2017 Electromagnetic Compatibility Test and Measurement Technology Damped Oscillating Magnetic Field Immunity Test;
- GB/T 17626:11-2008 Electromagnetic compatibility test and measurement technology Immunity test for voltage dips, short interruptions and voltage changes;
- GB/T 17626:13-2006 Electromagnetic compatibility test and measurement technology AC power port harmonics, interharmonics and low-frequency immunity test of grid signals;
- GB/T 17626:14-2005 Electromagnetic Compatibility Test and Measurement Technology Voltage Fluctuation Immunity Test;

1 Scope

GB/T 17626.12-2023 specifies the ring wave immunity test. It reproduces a disturbance that is common and easy to overlook: when a switch operates or a capacitor bank is energised somewhere on a low-voltage network, the step it creates rings against the inductance and capacitance of the wiring, producing a damped oscillation at tens or hundreds of kilohertz that propagates along power, control and signal lines. It is not the single steep surge that lightning tests apply, and equipment that passes the surge test can still fail this, because the repeated oscillation at a frequency the input filter was not designed for penetrates further into the circuit. This part specifies the immunity requirements and test methods for ring waves on low-voltage power, control and signal lines of electrical and electronic equipment in service, on public and non-public networks. It sits within the GB/T 17626 series, the EMC testing techniques standards used across product certification. Under ICS 33.100.20 and CCS L06, it is written for EMC testing laboratories, for the designers of equipment connected to low-voltage networks, and for the certification bodies applying immunity requirements.

This document describes the effects of electrical and electronic equipment in operation on low-voltage power, control and signal lines in public or non-public networks: Immunity requirements and test methods for ringing waves: The purpose of this document is to establish a common benchmark for evaluating the immunity of electrical and electronic equipment to ringing waves: Test methods specified in this document Describes a consistent method for assessing the immunity of equipment or systems to defined phenomena:

Note: According to the description of IEC GUIDE107, this document is the basic EMC publication used by the product standardization technical committee: As IEC GUIDE107

Statement, the product standardization technical committee is responsible for determining whether to adopt this immunity standard, if adopted, they are responsible for determining the appropriate test level and performance criteria: The National Electromagnetic Compatibility Standardization Technical Committee and its sub-committees are willing to cooperate with the Product Standardization Technical Committee to evaluate its products special immunity requirements of the product: This document specifies:

- Test voltage and current waveforms;
- Range of test grades;
- test equipment;
- Test arrangement;
- Test procedure:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references, Only the version corresponding to the date applies to this document; for undated references, the latest version (including all amendments) applies to this document:

3 Terms, Definitions and Abbreviations 3: