



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

GB/T 2423.35-2019

**Environmental testing - Part 2: Tests and guidance - Combined
climatic (temperature / humidity) and dynamic (vibration /
shock) tests**

Issued on: June 4, 2019

Implemented on: January 1, 2020

Issued by: SAMR; SAC

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Foreword

In accordance with test methods, GB/T 2423 Environmental Testing - Part 2. Test

Methods is divided into several parts.

This is the 35th part of GB/T 2423.

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

This Part serves as a replacement of GB/T 2423.35-2005 Environmental Testing for Electric and Electronic Products - Part 2. Test Methods - Test Z/AFc. Combined Cold/vibration (sinusoidal) Tests for Both Heat-dissipating and Non-heat-dissipating Specimens; GB/T 2423.36-2005 Environmental Testing for Electric and Electronic Products - Part 2. Test Methods - Test Z/BFc. Combined Dry Heat/vibration (sinusoidal) Tests for Both Heat-dissipating and Non-heat-dissipating Specimens; GB/T 2424.22-

1986 Basic Environmental Testing Procedures for Electric and Electronic Products -

Guidance for Combined Temperature (cold and heat) Vibration (sinusoidal) Tests. This Part integrates the content in GB/T 2423.35-2005, GB/T 2423.36-2005 and GB/T 2424.22-1986. In comparison with these standards, the main technical changes are as follows.

---The scope of application of tests is extended. combined tests may be conducted under different vibrational excitations (sinusoidal, random, mixed mode or shock) and different climatic conditions (cold, dry heat, temperature variation, cyclic or constant damp heat).

---The previous standard's specific details of test requirements are not specifically described in this Part.

This Part adopts translation method and equivalently adopts IEC 60068-2-53.2010 Environmental Testing - Part 2-53.Tests and Guidance - Combined Climatic (temperature/humidity)] and Dynamic (vibration/shock) Tests.

Chinese documents that have consistent correspondence with the international documents that are normative references in this Part are as follows.

---GB/T 2421.1-2008 Environmental Testing for Electric and Electronic Products - General and Guidance (IEC 60068-1.1988, IDT);

---GB/T 2423.1-2008 Environmental Testing for Electric and Electronic Products - Part 2.Test Methods - Tests A. Cold (IEC 60068-2-1.2007, IDT);

---GB/T 2423.2-2008 Environmental Testing for Electric and Electronic Products - Part 2.Test Methods - Tests B. Dry Heat (IEC 60068-2-2.2007, IDT);

---GB/T 2423.3-2016 Environmental Testing - Part 2.Testing Method - Test Cab. Damp Heat, Steady State (IEC 60068-2-78.2012, IDT);

---GB/T 2423.4-2008 Environmental Testing for Electric and Electronic Products - Part 2.Test Method - Tests Db. Damp Heat, Cyclic (12 h + 12 h cycle) (IEC 60068-2-30.2005, IDT);

---GB/T 2423.5-2019 Environmental Testing - Part 2.Test Methods - Test Ea and Guidance. Shock (IEC 60068-2-27.2008, IDT);

---GB/T 2423.10-2019 Environmental Testing - Part 2.Tests Methods - Test Fc. Vibration (sinusoidal) (IEC 60068-2-6.2007, IDT);

---GB/T 2423.22-2012 Environmental Testing - Part 2.Test Methods - Test N. Change of Temperature (IEC 60068-2-14.2009, IDT);

---GB/T 2423.56-2018 Environmental Testing - Part 2. Test Methods - Test Fh.

Vibration, Broadband Random and Guidance (IEC 60068-2-64.2008, IDT);

---GB/T 2423.58-2008 Environmental Testing for Electric and Electronic Products
- Part 2. Test Methods - Test Fi. Vibration - Mixed Mode (IEC 60068-2-80.2005,
IDT).

In order to make it convenient to be used, this Part makes the following editorial
modifications.

---The title of the Standard is modified.

---In Table 1, "sqrt" is used to replace "?".

This Part was proposed by and shall be under the jurisdiction of National Technical
Committee 8 on Environmental Conditions of Electric and Electronic Products and
Environmental Test of Standardization Administration of China (SAC/TC 8).

The drafting organizations of this Part. CEPREI; Shanghai Institute of Quality
Inspection and Technical Research; BEIHANG University.

1 Scope

This Part of GB/T 2423 provides a description of test methods and guidance for testing
equipment or components under combined climatic and dynamic conditions.

The purpose of combined testing is to investigate to what extent the equipment or
components are affected by combined climatic and dynamic tests.

2 Normative References

The following documents are indispensable to the application of this document. In
terms of references with a specified date, only versions with a specified date are
applicable to this document. In terms of references without a specified date, the latest
version (including all the modifications) is applicable to this document.

3 Testing

The combinations of environmental conditions should be selected to ensure that
electrical and mechanical performances of the specimen are satisfactory under

storage, transportation and operational conditions.

Certain combinations of possible tests shown in Table 1 may not be practicable.

Examples of these include the following.

4 Final Measurements

The specimen shall be submitted to the visual, dimensional and functional checks prescribed by the relevant specification.

5 Information to be Given in the Relevant Specification

The relevant specification shall contain the following details as far as they are applicable.

6 Information to be Given in the Test Report

When this test included in the relevant specification, the following details shall be given where applicable.

Annex A

(Informative)

Examples of Test Sequences

Figures A.1 to A.4 represent examples of a test sequence combination of climatic conditions (temperature and/or humidity), dynamic conditions (vibration or shock) and electric loads conditions.

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