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

GB 4824-2025

Replacing GB 4824-2019

**Industrial, scientific and medical equipment - Radio-frequency
disturbance characteristics - Limits and methods of
measurement**

工业、科学和医疗设备 射频骚扰特性 限值 and 测量方法

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part

1. Rules for the Structure and Drafting of Standardizing Documents. This Document replaced GB 4824-2019 Industrial, Scientific and Medical Equipment - Radio- Frequency Disturbance Characteristics - Limits and Methods of Measurement. Compared with GB 4824-2019, the major technical changes of this Document are as follows besides the structural adjustments and editorial modifications.

--- Change the Scope of the standard (see Clause 1 of this Edition; Clause 1 of the 2019 Edition);

13 Terms and Definitions, including "associated equipment", "equipment with radio functionality", "fundamental frequency", "highest internal frequency", "industrial robot", "medical robot", "power conversion equipment", "radio device", "radio module", "radio transmitter", "rated load", "robot", and "wired network port"; and add 29 abbreviated terms (see Clause 3 of this Edition);

--- The main changes in "

6.2 Group 1 equipment measured on a test site" are summarized as follows: - Change the type of equipment applicable to the specified limits of low-voltage DC power ports (see

6.2.1.1 of this Edition;

6.2.1.1 of the 2019 edition); - Add the Table of "Applicability of measurements at DC power port" (see Table 6 of this Edition); - Add the Table of "Limits for conducted disturbance measured on a test site (wired network port)" (see Table 7 of this Edition); - Add the requirements for radiated disturbance measurements in the 1GHz~18GHz frequency band (see

6.2.2.4 of this Edition); - Add the Table of "Required highest frequency for radiated measurement" (see Table 10 of this Edition); - Add the limit above 1GHz for Group 1 equipment "Electromagnetic radiation disturbance limits for Group 1 equipment measured

on a test site" (see Table 11 of this Edition);

--- Add "Measurement of robots" (see

7.5.4 of this Edition);

--- Add the Figure of "EUT boundary determination for radiated disturbance measurements of robots with extended/moving arm" (see Figure 5 of this Edition);

--- Add the Figure of "Example of a typical test setup for conducted disturbance measurement of a floor-standing robot system" (see Figure 6 of this Edition);

--- Add the Figure of "Example of a typical test setup for radiated disturbance measurement of a floor-standing robot system" (see Figure 7 of this Edition);

1 Scope

GB 4824 is the Chinese emission standard for industrial, scientific and medical equipment: everything that generates or uses radio frequency energy for a purpose other than communication, from induction heaters, welding equipment and plasma cutters through microwave ovens and RF dryers to MRI scanners, electrosurgical units and semiconductor process equipment. Such machines can put out more RF power than a broadcast transmitter, and the standard is what keeps them from taking out the radio spectrum around them. It is a mandatory national standard and it is the emissions half of the CCC and CE-equivalent assessment for this equipment. The document sets the classification into groups and classes according to whether the RF energy is intentionally generated and whether the equipment is for domestic or industrial environments, the conducted and radiated disturbance limits for each, the measurement methods, the test set-ups and the instrumentation, the interpretation of the results and the statistical treatment, and the requirements on the test report. The 2025 edition, effective 1 March 2026, replaces GB 4824-2019 and is aligned with the current CISPR 11.

This Document applies to industrial, scientific and medical electrical equipment operating in the frequency range

0 Hz to 400 GHz and to domestic and similar appliances designed to generate and/or use locally radio-frequency energy. This Document covers emission requirements related to radio-frequency (RF) disturbances in the frequency range of 9 kHz to 400 GHz.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 4365-2024 Electrotechnical terminology - Electromagnetic compatibility (IEC 60050-161.2021, MOD) NOTE. There are no technical differences between the quoted contents of

GB/T 4365-2024 and that of the IEC 60050-161.2021.

GB/T 6113.101-2021 Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-

1. Radio disturbance and immunity measuring apparatus - Measuring apparatus (CISPR 16-1-1.2019, IDT)

GB/T 6113.402-2022 Specification for radio disturbance and immunity measuring apparatus and methods - Part 4-

2. Uncertainties, statistics and limit modelling - Measurement instrumentation uncertainty (CISPR 16-4-2.2018, IDT)

3 Terms, Definitions and Abbreviated Terms

3.1 Terms and definitions For the purposes of this document, the terms and definitions given in GB/T 4365-2024 and the following apply. ISO and IEC maintain terminology databases for use in standardization at the following addresses.

3.1.1 AC mains power port Port used to connect to a public low voltage AC mains power distribution network or other low voltage AC mains installation.

3.1.2 Associated equipment; AE Apparatus that is not part of the system under test, but needed to help exercise the EUT. [Source: GB/T 6113.203-2020, 3.1.5]

4 Frequencies Designated for ISM Use

Certain frequencies are designated by the International Telecommunication Union (ITU) for use as fundamental frequencies for ISM RF applications (see also Definition 3.1.18). These frequencies are listed in Table 1.

5 Classification of Equipment

5.1 Separation into groups In order to simplify identification of the relevant limits, the equipment in the scope of this document is categorized into two groups, i.e. into group 1 and group 2.

5.2 Division into classes In accordance with the intended use of equipment in the electromagnetic environment, this document defines two classes of equipment, namely class A and class B.