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

GB/T 18487.2-2026

Replacing GB/T 18487.2-2017

**Electric vehicle conductive charging system - Part 2: EMC
requirements for off-board electric vehicle supply equipment**

电动汽车传导充电系统 第2部分：非车载传导供电设备电磁兼容要求

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1 Scope

GB/T 18487.2-2026 is the Chinese national standard covering the electromagnetic compatibility of a charging station - a high-power switching converter connected to the grid at one end and to a vehicle at the other, which has to neither emit interference nor be disturbed by it. It replaces GB/T 18487.2-2017. It was issued on 30 April 2026 and takes effect on 1 November 2026, replacing GB/T 18487.2-2017. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself,

delivered in full with the English translation.

This document specifies the electromagnetic compatibility (EMC) requirements for electric vehicle supply equipment (hereinafter referred to as "supply equipment") used for off-board conductive charging of electric vehicles. The rated grid voltage of the supply equipment shall not exceed 1 000 V AC or 1 500 V DC, and the maximum rated output voltage shall not exceed 1 000 V AC or 1 500 V DC. This document applies to supply equipment of charging modes 2, 3, and 4 as specified in GB/T 18487.1-2023. This document applies to electric vehicle supply equipment that obtains energy from field energy storage systems (such as buffer battery packs). This document does not apply to any on-board supply equipment, nor to components and equipment of the supply system of electric vehicles. This document does not apply to supply equipment intended to supply power to or charge electric vehicles by means of wireless power transfer (WPT). This document does not apply to supply equipment for trolleybuses, rail vehicles, industrial trucks, or vehicles primarily intended for off-road use. The emission requirements specified in this document do not apply to intentional emissions generated by radio transmitters as defined by the International Telecommunication Union (ITU), nor to spurious emissions associated with such intentional emissions.

Note. Cables without electronic components or switches (except manual switches) in this document are passive and do not require electromagnetic compatibility testing.

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

3 Terms, definitions and abbreviations

3.1 Terms and definitions For the purposes of this document, the following terms and definitions, as well as those given in GB/T 4365, GB 4824-2025, GB/T 18487.1-2023, GB/T 19596 and GB/T 29317, apply.

3.1.1 auxiliary equipment; AE Equipment that provides the signals required for the normal operation of the equipment under test (EUT) and equipment used to verify the performance of the EUT. [Source: GB/T 17626.6-2017, 3.2]

2 While electric vehicle is connected to supply network (power supply), standard plug/socket-outlet, as well as phase line, neutral line and grounding protection conductor, is applied at the power supply side. Besides, in-cable control and protection device (IC-CPD) is applied for charging connection. [Source: GB/T 18487.1-2023, 3.1.4.2]

3 While electric vehicle is connected to supply network (power supply), special supply equipment is used to connect electric vehicle directly with AC network and a control pilot device is installed onto the special supply equipment. [Source: GB/T 18487.1-2023, 3.1.4.3]

4 While electric vehicle is connected to supply network (power supply), DC supply equipment with control pilot function is used. [Source: GB/T 18487.1-2023, 3.1.4.4]

3.1.5 DC voltage below 60 V. Note

1. For example, the nominal voltage is 12 V, 24 V or 48 V. Note

2. The term "low voltage" may be defined as a different voltage range in other standards.

3.2 Abbreviations For the purposes of this document, the following abbreviated terms apply.
 AAN. Asymmetric Artificial Network AE. Auxiliary Equipment AMN. Artificial Mains Network
 AN. Artificial Network CAN. Controller Area Network CDN. Coupling/Decoupling Network
 CPT. Conductive Power Transfer port EMC. Electromagnetic Compatibility EUT. Equipment
 Under Test ISDN. Integrated Services Digital Network LAN. Local Area Network PSTN.
 Public Switched Telephone Network RBW. Resolution Bandwidth RCD. Residual Current
 operated protective Devices xDSL. x Digital Subscriber Line

4 Supply equipment configuration

4.1 Conductive power transfer (CPT) equipment All tests shall use typical supply equipment and communication cables (at the CPT port) provided by the manufacturer. If the supply equipment is not provided with cables, the tests shall be conducted with the typical cable length. The test setup diagram for conducted disturbance measurements at the CPT port for off-board DC supply equipment is shown in Appendix A. Specific test setups shall be performed in accordance with GB 4824-2025 and GB/T 6113.201. In-cable control and protection device (IC-CPD), other portable equipment, and charging mode 2 equipment shall be tested according to the tabletop equipment configuration.

4.2 EUT termination requirements during testing In conducted disturbance testing, all ports of the EUT shall be terminated with AN/AAN or CDN as appropriate. Power input ports, signal control ports, and wired network ports shall conform to the requirements of Appendix B. The EUT's CPT port shall be connected to the AE, covering AN and/or AAN, forming a vehicle simulator according to Appendix B, and connected to an appropriate load. The signal/control lines of the CPT port shall communicate via their respective simulators in accordance with Appendix B and shall be powered via suitable coupling devices.

5 Test load conditions for supply equipment

5.1 General requirements Communication lines for supply equipment with communication capabilities (between the supply equipment and the vehicle) shall be terminated according to Appendix B. Communication signals shall be provided by their respective simulators and

fed in via suitable coupling devices. If the charging equipment has a large number of similar CPT ports, a sufficient number of ports shall be selected to simulate actual operating conditions, such as 20% of all ports or at least four ports. For ports with discrepancies, individual testing is required.

Note. It shall be noted that this does not always represent actual use, as power will decrease as the battery gradually charges.

5.2 CPT supply equipment for electric vehicles The CPT port of the supply equipment shall be connected to the AE, which includes a vehicle simulator formed by AN and/or AAN, and connected to an adjustable resistive load.

6 Operating conditions during testing

6.1 General requirements The test shall be conducted under the modes specified in this document. The test shall be conducted under the load conditions specified in Chapter 5. The test plan shall specify the configuration and operating mode of the EUT, and the test report shall accurately record the actual conditions during the test. The following two operating modes shall be evaluated.

- a) Standby mode. the supply equipment shall be configured to simulate normal power supply operation with the vehicle connector inserted into the vehicle inlet, while the supply equipment is in a non-charging state (e.g., when the vehicle battery is fully charged or charging is awaiting a decision by the power grid);
- b) Charging mode. during the test, the output current of the supply equipment shall be at the power level that produces the highest emissions.

Note. Evaluation is unnecessary when there is no load connection, as this has been adequately considered in standby mode. Where communication between the supply equipment and the vehicle (e.g., charging control) is implemented using means other than the control pilot or by other signaling methods, the test shall be performed under the worst-case signaling conditions, for example, using the signal corresponding to the maximum communication rate specified by the manufacturer. Unless otherwise specified in the relevant basic standard, the tests shall be performed over the operating range specified for the supply equipment and at its rated input voltage. In-cable control and protection devices (IC-CPDs) shall be tested in accordance with mode 3 charging.

6.2 Test conditions The supply equipment shall comply with the immunity requirements and emission requirements specified in this document. The requirements for supply equipment covered by this document are given on a port- by-port basis. The immunity tests shall comply with the requirements of Tables 1 ~ 4, and the emission tests shall comply with the requirements of Tables 5 ~ 12. All tests specified in this document may be performed in any order. The resistive load shall be adjusted such that the supply equipment is tested under the following operating modes.