

ICS 43.040
CCS T 41



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

GB/T 47031-2026

**Intelligent and connected vehicles - Performance requirements
and test methods for automated parking systems**

智能网联汽车 自动泊车系统性能要求与试验方法

Issued on: January 28, 2026

Implemented on: January 28, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1	Scope
2	Normative references
3	Terms and definitions
4	General requirements
4.1	System classification and requirements
4.2	Functional requirements...
4.2.4	System critical state transition requirements
4.3	Functional safety and SOTIF requirements...
4.4	Information security requirements...
4.5	Data recording requirements...
4.6	Instruction manual requirements...
5	Performance requirements
5.1	Parking requirements
5.1.1	Parking time Tested in accordance with
5.1.2	Unavailable parking slot identification Tested in accordance with
5.2	Cruise driving requirements...
5.3	Remote braking requirements...
5.4	Obstacle avoidance requirements...
5.5	Requirements for handling abnormal situations...
6	Test conditions...
6.1	General requirements...
6.2	Requirements for test conditions in closed test sites...
7	Test methods...
7.1	Requirements for test scenarios...
7.2	Tests in closed test sites...
7.3	Tests in public parking lots...
7.4	Simulation test...

1 Scope

GB/T 47031-2026 is the Chinese national standard covering automated parking - from the assisted manoeuvre with the driver aboard to the remote and valet parking where the car

moves with nobody in it, with the detection of obstacles and pedestrians, the speed limits, the abort conditions and the tests for each. At 31,000 words, first edition, issued and in force on 28 January 2026. It was issued on 28 January 2026 and has been in force since 28 January 2026, as a first edition. The document is under the responsibility of the Ministry of Industry and Information Technology. 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 general and performance requirements for automatic parking system and describes the corresponding test methods. This document applies to M1 category vehicles equipped with an automated parking system; other vehicle types may refer to it for implementation. This document applies to automatic parking systems for parking in parking lots and on- street parking slots.

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 5768.2, Road traffic signs and markings - Part

3 Terms and definitions

For the purposes of this document, the following terms and definitions, as well as those given in GB/T 44721-2024, apply. A management system for dispatching and remotely assisting vehicles equipped with automatic parking function via the vehicle manufacturer's platform or site-side intelligent infrastructure and its cloud service platform.

3.19 on-street parking slot An on-street parking area designated by traffic signs and markings for vehicle parking. [Source: GB/T 51149-2016, 2.0.7, modified]

3.20 remote braking When the automatic parking system receives a braking command from a user outside the vehicle or the parking management system, it shall bring the vehicle to a complete stop after ensuring safety.

4.1 System classification and requirements

4.1.1 System classification The system is classified into Class I and Class II systems, with the following requirements.

a) Class I system. 1) shall have the function of automatically parking into a parking slot and may have the function of automatically parking out of the parking slot; 2) shall meet the requirements other than 4.2.1.5, 5.2, 5.4.3~5.4.6.

b) Class II system. 1) shall have the function of automatically parking into a parking slot and cruising, and may have the function of automatically parking out of the parking slot; 2) shall meet all requirements of this document.

4.1.2 Requirements for system-supported parking slot types The system-supported parking slot types shall meet the requirements in Table 1.

h) The system shall at least have the function of parking the rear of the vehicle into the parking slot, and may also have the function of parking the front of the vehicle into the parking slot.

i) Parking-out (if any) shall at least have the function of parking the front of the vehicle out of the parking slot, and may also have the function of parking the rear of the vehicle out of the parking slot.

j) The system shall have the ability to detect and respond to obstacles, and control the vehicle to avoid collisions or physical contact with obstacles during driving. Types of obstacles include, but are not limited to. 1) Traffic cone; 2) Parking lock; 3) Passenger car and other four-wheeled vehicles; 4) Two-wheeled vehicles such as bicycle and motorcycle; 5) Pedestrian.

f) apply only if the relevant national laws and regulations allow in- vehicle unmanned operation.

4.2.1.5 In addition to meeting the requirements of 4.2.1.1~4.2.1.4, Class II systems shall also meet the following requirements.

a) When the vehicle is under cruise control, the maximum cruise speed shall not exceed 30 km/h;

b) Shall be able to control the vehicle to cruise along a planned route to the destination;

c) Shall be able to control the vehicle to cruise through straight roads, curves, intersections, speed bumps, etc., and cruise through other scenarios according to the design operational conditions declared by the manufacturer;

d) When the system is parking in on-street parking slots, the vehicle cruise control shall comply with the relevant provisions of national laws and regulations regarding motor vehicle road driving.

4.2.2 Human-computer interaction requirements Users can interact with the system via on-board or mobile terminals. In addition to meeting the requirements of Chapter 7 of GB/T 44721-2024, the system's human- computer interaction capabilities shall also meet the following requirements.

4.2.4 System critical state transition requirements

4.2.4.1 For a system to switch from a non-ready state to a ready state, at least the following

conditions shall be met. -- System self-inspection is passed; -- The design operational conditions declared for the automatic parking function are met.

4.2.4.2 The system shall switch from the ready state to the non-ready state when one of the following conditions is met. -- The system is diagnosed a fault affecting the normal operation of the automatic parking function; -- The design operational conditions declared for the automatic parking function are not met.

4.2.4.3 When the vehicle is started (powered on) (except for engine idle start-stop during cruise control), the system shall not directly enter the active state, and the system shall only be allowed to switch from the ready state to the active state after confirmation by the user or the parking management system.

4.2.4.4 After receiving a remote braking command, the system shall switch from executing the dynamic driving task of parking to executing the remote braking state.

4.2.4.5 When the system issues an intervention request, but the user or the parking management system does not respond to the intervention request within the specified time, the system shall switch from the active state to the state of executing the minimum risk manoeuvre.

4.2.4.6 The system shall allow switching from the state of executing the minimum risk manoeuvre to the minimum risk condition only when the vehicle is completely stationary.

4.2.4.7 After the system reaches the minimum risk condition, it shall meet at least the following conditions to re-enter the ready state. -- The design operational conditions declared for the automatic parking function are met; -- The user or the parking management system sends a confirmation message.

4.3 Functional safety and SOTIF requirements The functional safety and safety of the intended functionality of the system shall comply with the requirements of Appendix A of GB/T 44721-2024.

4.4 Information security requirements The information security of the system shall comply with the requirements of GB 44495.

4.5 Data recording requirements The system's data recording shall comply with the requirements of GB 44497.

4.6 Instruction manual requirements In addition to meeting the requirements of Chapter 8 of GB/T 44721-2024, the system's product manual shall also meet the following requirements.

- a) Specify the system type and the design operational conditions for the parking function;
- b) Specify the types of parking slots supported by the system;
- c) Specify the maximum design speed for driving into and out of the parking slot and during the cruise phase;