



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

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**Performance Requirements and Testing Methods for Around
View Monitoring System of Vehicles**

汽车全景影像监测系统性能要求及试验方法

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents.

Please be noted that certain content of this document may involve patents. The institution issuing this document does not undertake the responsibility of identifying these patents.

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This document shall be under the jurisdiction of National Technical Committee of Auto Standardization (SAC/TC 114).

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1 Scope

This document specifies the general requirements and performance requirements for around view monitoring system when the vehicle is stationary and driving at a low speed and describes the test methods.

This document is applicable to Category-M and Category-N non-articulated vehicles equipped with the around view monitoring system. Other types of vehicles may take this as a reference.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. 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 Terms and Definitions

The terms and definitions defined in GB/T 39263, and the following are applicable to this document.

3.1 around view monitoring system; AVMS

A system that provides the driver with real-time image information of the environment within a 360° range around the vehicle.

3.2 blind spot of AVMS

Due to camera placement and vehicle structure limitations, the area around the vehicle that cannot be monitored by the AVMS.

3.3 single view image

3.4 splicing view plane

A plan view showing the surrounding environment information of the vehicle obtained by processing the images collected by various cameras.

3.5 splicing gap

3.6 splicing dislocation

l_1 is the side length of the checkerboard graphic card cells on the image.

3.7 splicing ghosting

3.8 splicing loss

4 General Requirements

4.1 Functions

4.2 Self-inspection

The AVMS shall perform self-inspection after power-on and at least have the following selfinspection functions:

- a) Inspect whether relevant electrical components are normally operating;
- b) Inspect whether relevant sensing elements are normally operating.

4.3 Fault Indication

The AVMS shall at least notify the driver of an AVMS fault by means of an optical signal, and the fault signal may share text, graphics or location with other systems.

4.4 Electromagnetic Compatibility

The electromagnetic compatibility of the AVMS shall comply with the requirements of GB 34660.

5 Performance Requirements

5.1 AVMS Response Time

In accordance with 6.4, carry out the test. The AVMS response time shall be not greater than 3 s.

5.2 Image Delay

In accordance with 6.5, carry out the test. The image delay of the AVMS output shall be not greater than 0.3 s.

5.3 Field of View of Single View Image

In accordance with 6.6, carry out the test. The field of view of each single view image of the AVMS shall satisfy the following requirements.

- a) Front and rear single view images: all markers at 1,500 mm and 4,00 mm from the front and rear outer edges of the vehicle body and 1,000 mm from the outside of the vehicle body can be completely observed, as shown in Figure 6 a) and Figure 6 b).
- b) Left and right single view images: all markers 1,500 mm from the corresponding side outside the vehicle body, on the front wheel axis and at a 1,000 mm longitudinal distance from the front wheel axis can be completely observed, as shown in Figure 6 c) and Figure 6 d).

5.4 Field of View of Splicing View Plane

5.5 Planar Splicing Effect

5.5.1 Overall requirements

5.5.2 Row / column distortion

In accordance with 6.8, carry out the test. In the splicing view plane, the cumulative width of the cells in the third row / column outside the vehicle body shall be not greater than 1.5 times the side length of the checkerboard cells in the view. As shown in Figure 8, the