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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 24338.3-2018

Railway applications -- Electromagnetic compatibility -- Part 3-1: Rolling stock -- Train and complete vehicle

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Foreword

GB/T 24338 "Tracking Electromagnetic Compatibility" consists of the following parts.

--- Part 1. General;

--- Part 2. The launch of the entire track system to the outside world;

--- Part 3-1. Locomotive trains and complete vehicles;

---Part 3-2. Locomotive and rolling stock equipment;

--- Part 4. Emission and immunity of signal and communication equipment;

--- Part 5. Emission and immunity of ground-based equipment and systems.

This part is part 3-1 of GB/T 24338.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 24338.3-2009 "Mechanical Compatibility of Rail Transit Part 3-1. Locomotive Trains and Complete Vehicles",

Compared with GB/T 24338.3-2009, the main technical changes are as follows.

--- Added normative references GB/T 4365, GB/T 24338.4 and GB/T 28807 (see Chapter 2);

--- Revised the scope of the content, clarified that the frequency without the limit requirements is not tested (see Chapter 1, Chapter 1 of the.2009 edition);

--- Increased the general requirements for electromagnetic compatibility, system electromagnetic compatibility requirements, electromagnetic compatibility of vehicle-mounted equipment and equipment working mode during testing

Seeking (see Chapter 1);

--- Increased the requirements for the working mode of the equipment during the test, and further improved and unified the test conditions (see Chapter 4);

--- Move the 9kHz~0.15MHz measurement requirements to Appendix C (see 6.1 of.2009 edition);

--- Removed the requirements for the test conditions and test sites specified in the contract, and removed the influence of other parts and the external environment on the measurement.

Requirements (see 6.1 of the.2009 edition);

---Modified requirements for other equipment (see 6.1, 6.1 of.2009 edition);

--- Added digital system xDSL that is not affected by electromagnetics (see 6.2.1);

--- Revised the requirements for interference on analog communication lines (see 6.2.2, 6.2.2 of the.2009 version);

--- Increased the same passenger car/truck measurement requirements and vehicle test requirements with energy storage system (see 6.3.2);

--- Revised the slow limit curve of electric drive diesel locomotive and internal combustion traction unit (see 6.3.3, 6.3.3 of.2009 edition);

--- Removed the limits for static and slow tests in the 9kHz~0.15MHz range (see Figure 1, Figure 2, Figure 1 of the.2009 version)

figure 2);

--- Increased the requirements for microprocessor-induced emissions above 1 GHz (see 6.3.3);

--- Revised the frequency range of the measurement method for electromagnetic noise of rolling stock (see B.1 of B.1,.2009 edition);

---Modified the requirements of measuring equipment (see B.2,.2009 edition B.2);

--- Removed the requirement for radiated electromagnetic disturbance test in the range of 9 kHz to 0.15 MHz (see Table B.1 of the.2009 edition).

This section uses the redrafting method to modify the use of IEC 62236-3-1.2008 "railway electromagnetic compatibility part 3-1. locomotive

Train and vehicle.

There are technical differences between this part and IEC 62236-3-1.2008. The terms involved in these differences have been passed on the outer side of the page.

The vertical single line (|) of the white position is marked. The specific technical differences and their causes are as follows.

---About the normative reference documents, this part has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory References", and the specific adjustments are as follows.

* Replace CISPR16-1-1 with GB/T 6113.101-2016 equivalent to the international standard;

* Replace IEC 62236-1 with GB/T 24338.1 modified to adopt international standards;

* Replace IEC 62236-2 with GB/T 24338.2 modified to adopt international standards;

* Replace IEC 62236-3-2 with GB/T 24338.4 modified to international standards;

* Replace IEC 62427 with GB/T 28807 equivalent to the international standard;

* Added reference to GB/T 4365.

--- Increased the requirements for the working mode of the equipment during the test, and further improved and unified the test conditions (see Chapter 4);

--- Removed the immunity level requirement of the vehicle in the frequency range of 0.15MHz~2GHz to adapt to the highest frequency to 6GHz

Requirements

--- Removed the limit requirements for the 9kHz~0.15MHz range emission and related test content to meet the test repeatability

Claim;

--- Removed the requirements for the test conditions and test sites specified in the contract, and removed the influence of other parts and the external environment on the measurement.

Claim;

--- Revised the requirements for other equipment, clearly not considering the impact of the external environment (see 6.1);

--- Increased the digital system xDSL that is not affected by electromagnetics to accommodate the development of digital systems (see 6.2.1);

--- Revised the requirements for interference on analog communication lines, moving the requirements to informative Appendix B (see 6.2.2);

--- Increased the same passenger car/truck measurement times and vehicle test requirements with energy storage system to improve the test method

(see 6.3.2);

--- Removed the limits for the static and slow tests in the 9kHz~0.15MHz range, and moved the contents to the informative Appendix C (see 6.3.3);

--- Revised the limit curve requirements for electric drive diesel locomotives and internal combustion traction units, canceling the frequency range of 9 kHz to 0.15 MHz

Test requirements (see 6.3.3);

--- Increased the requirements for microprocessor-induced launch above 1 GHz to accommodate the development of vehicle electronics (see 6.3.3);

--- Revised the part of the legend in Figure 1 and Figure 2 as the text, according to the actual situation in China, the bandwidth selection in Appendix B of this part is clear.

Seek (see 6.3.3);

--- Revised the frequency range of the measurement method of electromagnetic noise of rolling stock, and canceled the test of the frequency range of 9kHz~0.15MHz

Seeking (see B.1);

--- Modified the requirements of the measuring equipment to meet the requirements of GB/T 6113.101-2016 (see B.2).

This section also made the following editorial changes.

--- Revised the order of the appendix and adjusted it in the order in which the appendix appeared in the standard;

--- Added an overview of A.1 rail system current and communication line noise;

--- Added the A.5.1 "Overview" number to eliminate the suspended section;

--- Added references.

1 Scope

This part of GB/T 24338 specifies all types of rolling stock (including towed vehicles, trailers and city vehicles used in urban streets).

Vehicle) emission and immunity requirements.

This section applies to the frequency range from 0GHz to 400GHz. Bands without limit requirements do not need to be tested.

The range of equipment in this section is limited to rolling stock and each energy interface