



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

GB/T 24338.5-2018

**Railway applications -- Electromagnetic compatibility -- Part 4:
Emission and immunity of the signalling and
telecommunications apparatus**

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Foreword

GB/T 24338 "Railway applications - Electromagnetic compatibility" consists of the following parts.

- Part 1. General;
- Part 2. Emission of the whole railway system to the outside world;
- Part 3-1. Rolling stock - Train and complete vehicle;
- Part 3-2. Rolling stock - Apparatus;
- Part 4. Emission and immunity of the signalling and telecommunications apparatus;
- Part 5. Emission and immunity of fixed power supply apparatus and systems.

This Part is Part 4 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 24338.5-2009 "Railway applications - Electromagnetic compatibility - Part 4. Emission and immunity of the signalling and telecommunications apparatus". As compared with GB/T 24338.5-2009, the main technical changes are as follows.

- ADD description of inapplicability to faulty apparatus (SEE Chapter 1;

Chapter 1 of the 2009 version);

- DELETE the description of power port emission (SEE Chapter 1 of the 2009 version);
- ADD a normative reference of GB/T 4365;
- CHANGE enclosure-cabinet port in the "Terms and definitions" to enclosure port (SEE 3.2; 3.2 of the 2009 version);
- ADD definitions of "3 m zone" and "10 m zone" (SEE 3.3 and 3.4);
- ADD a normative reference of GB/T 24338.6 (SEE Chapter 1);
- ADD the description in Chapter 4 that frequency without specified requirements is not tested (SEE Chapter 4);
- DELETE instructions for executive standards for apparatus in non-railway (I) at the blank of the outer margin. The specific technical differences and their reasons are as follows.
- About normative references, this Part has made adjustments with technical differences, to adapt to the technical conditions of China. The adjustments are reflected in Chapter 2 "Normative references", as follows.
 - ? REPLACE IEC 61000-3-2 with GB 17625.1 identical to the international standard;
 - ? REPLACE IEC 61000-3-3 with GB 17625.2 identical to the international standard;
 - ? REPLACE IEC 61000-6-2 with GB/T 17799.2 identical to the international standard;
 - ? REPLACE IEC 61000-6-4 with GB/T 17799.4 identical to the international standard;
 - ? REPLACE IEC 61000-4-2 with GB/T 17626.2 identical to the international standard;
 - ? REPLACE IEC 61000-4-3 with GB/T 17626.3 identical to the international standard;

? REPLACE IEC 61000-4-4 with GB/T 17626.4 identical to the international standard;

? REPLACE IEC 61000-4-5 with GB/T 17626.5 identical to the international standard;

? REPLACE IEC 61000-4-6 with GB/T 17626.6 identical to the international standard;

? REPLACE IEC 61000-4-8 with GB/T 17626.8 identical to the international standard;

? REPLACE IEC 61000-4-9 with GB/T 17626.9 identical to the international standard;

? REPLACE IEC 62236-1 with GB/T 24338.1 which uses the international standard by modification;

? REPLACE IEC 62236-3-2 with GB/T 24338.4 which uses the international standard by modification;

? ADD reference to GB/T 4365;

Railway applications - Electromagnetic compatibility -

Part 4. Emission and immunity of the signalling and telecommunications apparatus

1 Scope

This Part of GB/T 24338 specifies the emission and immunity requirements and performance criteria of signalling and telecommunications apparatus (hereafter abbreviated as "apparatus") in the railway environment.

This Part applies to the apparatus included in GB/T 24338.4 being installed in the railway environment and working normally, and the telecommunications signalling data line and power line connected to the apparatus under test.

The emission and immunity requirements of on-board signalling and telecommunications apparatus are specified by GB/T 24338.4. The emission and immunity requirements of signalling and telecommunications apparatus

installed in the substation and connected to the substation are specified by GB/T 24338.6. The electromagnetic compatibility requirements of apparatus within the scope of GB 17625.1 or GB/T 17625.2 are specified by GB 17625.1 or GB/T 17625.2.

If the emission of the apparatus meets the emission limits specified in GB 17799.4, as long as the emission of any DC power port is less than the specified emission limits of AC power port, it also complies with the provisions of this Part. The immunity requirements specified in this Part apply to.

- Key apparatus, such as interlock system and signalling control system;
- Apparatus in 3 m zone;
- Apparatus in 10 m zone with ports connected to apparatus in 3 m zone;
- Apparatus in 10 m zone with more than 30 m of cable connected.

Apparatus not covered above shall comply with the provisions of GB/T 17799.2.

The immunity level specified for the apparatus in this Part allows the apparatus to operate properly in the railway environment in most cases. When the apparatus is directly exposed to interference, or the cable connected to it receives interference from the RF field of disturbance source or coupled techniques - Radiated, radio-frequency, electromagnetic field immunity test (GB/T 17626.3-2016, IEC 61000-4-3.2010, IDT)

GB/T 17626.4 Electromagnetic compatibility - Testing and measurement techniques - Electrical fast transient/burst immunity test (GB/T 17626.4-2008, IEC 61000-4-4.2004, IDT)

GB/T 17626.5 Electromagnetic compatibility - Testing and measurement techniques - Surge immunity test (GB/T 17626.5-2008, IEC 61000-4-5.2005, IDT)

GB/T 17626.6 Electromagnetic compatibility - Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields (GB/T 17626.6-2017, IEC 61000-4-6.2013, IDT)