



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

GB/T 21437.2-2021

**Road vehicles - Test method of electrical disturbances from
conduction and coupling - Part 2: Electrical transient
conduction along supply lines only**

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020

"Directives for standardization - Part 1.Rules for the structure and drafting of standardizing documents".

This document is Part 2 of GB/T 21437 "Road vehicles - Test method of electrical disturbances from conduction and coupling". The following Parts of GB/T 21437 has been released.

- Part 1. Definitions and general considerations;
- Part 2. Electrical transient conduction along supply lines only;
- Part 3. Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines.

This document replaces GB/T 21437.2-2008 "Road vehicles - Electrical disturbances from conduction and coupling - Part 2. Electrical transient conduction along supply lines only". Compared with GB/T 21437.2-2008, except for structural adjustment and editorial changes, the main technical changes are as follows.

- CHANGE the "4.3 Voltage transient emission test" to "4.3.1 General provisions", "4.3.2 Arrangement for slow pulse test", "4.3.3 Arrangement for fast pulse test". CHANGE the Figure 1, dividing the "Test arrangement for fast pulse transient emission" into two cases (see 4.3; 4.3 of the 2008 edition);
- CHANGE the "4.4 Transient immunity test" to "4.4.1 DUT Location", "4.4.2 Power line location", "4.4.3 Load simulator location", "4.4.4 Test arrangement". DELETE the Figure 2c) -- Illustration on the 5b pulse (see 4.4; 4.4 of the 2008 edition);
- INTEGRATE and SIMPLIFY the measuring instrument in 5.5. DELETE the "Table

2 -- Voltage probe parameters" (see 5.5; 5.5 of the 2008 edition);

- ADD the title "5.6.1 General provisions" to the content of the suspension paragraph under 5.6; POSTPONE the subsequent clauses accordingly. CHANGE the Us parameters of test pulse 1, test pulse 2a and 2b, test pulse 3a and 3b in 5.6 (see 5.6;

5.6 of the 2008 edition);

- DELETE the relevant content of "5.6.4 Test pulse 4" and "5.6.5 Test pulse 5a and 5b" (see 5.6.4 and 5.6.5 of the 2008 edition);
- DELETE the content of the "Definition" column in Table C.1 (see Appendix B; Appendix C of the 2008 edition), which has been defined in GB/T 29259.

This document modifies and adopts ISO 7637-2:2011 "Road vehicles - Electrical disturbances from conduction and coupling - Part 2. Electrical transient conduction along supply lines only".

The technical differences, between this document and ISO 7637-2:2011, as well as the reasons, are as follows.

- In the introductory language of Chapter 3 -- Terms and definitions, USE "GB/T 21437.1" to replace "ISO 7637-1", to adapt to the technical conditions in China and increase operability;
- ADJUST the content of the suspension paragraph under 5.6 to "5.6.1 General provisions"; POSTPONE the subsequent clauses accordingly;
- DELETE 5.6.4 of ISO 7637-2:2011, because this clause has no actual content.

The following editorial changes have also been made to this document.

- COMBINE the descriptions of part a) and part b) of Figure 2; CHANGE the "2" in Figure 2a) to "2a", "4" to "4a"; CHANGE "2" in Figure 2b) to "2b", "4" to "4b";
- SIMPLIFY Table A.1 and Table A.2; DELETE the redundant footnotes;
- MODIFY Table A.3 with reference to GB/T 33014 (all parts); GIVE notes to "Category 1, Category 2, Category 3", to facilitate the unified understanding of the automotive electromagnetic immunity standard as a whole, for easy understanding and use;
- Because the A.2.1 of ISO 7637-2:2011 has no title, ADD the title "General provisions";
- ADD the title "C.2.1 General" to the content of the suspended paragraph under C.2; POSTPONE the subsequent clauses accordingly;
- Because ISO 7637-2:2011 lacks references to Table C.1, Table C.2, Table C.3, Table C.4, Table C.5, Table C.6, ADD the reference to these Tables, in C.2.1;
- In Appendix D, ADD the references to Figures D.1 and D.2.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

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

This document was first published in 2008. This is the first revision.

1 Scope

This document specifies the test equipment, test methods, requirements for electrical transient conducted emission and immunity tests of automotive electrical/electronic components, along power lines.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, for dated references, only the version corresponding to the date applies to this document; for undated references, the latest version (including all amendments) is applicable to this document.

GB/T 21437.1 Road vehicles - Test method of electrical disturbances from conduction and coupling - Part 1. Definitions and general considerations (GB/T 21437.1-2021, ISO 7637-1:2015, MOD)

3 Terms and definitions

The terms and definitions, which are defined in GB/T 21437.1, apply to this document.

4 Test procedures

The power line's transient emission and immunity tests, which are mentioned in this document, are carried out in the laboratory.

During the test, the ambient temperature shall be 23 °C +/- 5 °C.

5 Test equipment and requirements

The artificial network replaces the impedance of the vehicle wiring harness. It is used as a reference standard for impedance, in the laboratory, to determine the performance of equipment and electrical/electronic devices.

The parallel resistor RS simulates the equivalent resistor of other electrical devices of the vehicle, which are connected in parallel with the DUT.

Switch S shall be installed in the position. In vehicle's practical applications, if the line, between the switch and the load, is long, a slow pulse arrangement shall be