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NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 43.020

T 04

GB/T 29259-2012

Road vehicle-
Electromagnetic compatibility terminology

道路车辆 电磁兼容术语

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Issued on: December 31, 2012

Implemented on: June 1, 2013

Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;

Standardization Administration of the People's Republic of China.

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Foreword

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

This Standard is under the jurisdiction of National Technical Committee on Automotive of Standardization Administration of China (SAC/TC 114).

Drafting organizations of this Standard: China Automotive Technology Research Center, Suzhou 3C Test Electronic Technology Co., Ltd., Shanghai Volkswagen Automobile Co., Ltd., Shenzhen Hangsheng Electronics Co., Ltd.

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Road vehicle – Electromagnetic compatibility terminology

1 Scope

This Standard specifies terms and definitions related to electromagnetic compatibility of road vehicles.

This Standard applies to M, N, O, L vehicles and electrical and electronic systems/components, other motor vehicles may also refer to this Standard.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this document. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 4365-2003 Electrotechnical terminology - Electromagnetic compatibility

3 Terms and definitions

3.1

vehicle electromagnetic environment

The totality of electromagnetic phenomena presenting inside and outside the vehicle.

3.2

vehicle electromagnetic compatibility (EMC)

The ability of a vehicle and electrical and electronic system/component to function satisfactorily in its electromagnetic environment without affecting other vehicles and electrical and electronic systems/components in that environment.

3.3

electromagnetic disturbance

Any electromagnetic phenomenon which degrades the performance of a device, equipment or system, or adversely affects living or non-living matter.

presence of an electromagnetic disturbance.

[GB/T 4365-2003, definition 161-01-20]

3.10

immunity level

The maximum level of a given electromagnetic disturbance incident on a particular device, equipment or system for which it remains capable of operating at a required degree of performance.

[GB/T 4365-2003, definition 161-03-14]

3.11

electrostatic discharge (ESD)

A transfer of electric charge between bodies of different electrostatic potential in proximity or through direct contact.

[GB/T 4365-2003, definition 161-01-22]

3.12

human ESD model

A model using the capacitance and resistance to characterize the human body as the electrostatic charge source in the vehicle environment.

3.13

ESD simulator

A test device for simulating a human ESD model.

3.14

conduction

The electromagnetic phenomenon which transfer energy through one or more than one conductors.

3.15

coupling

The electromagnetic phenomenon by which electrical circuits interact with each other,

source.

3.21

narrowband emission

An electromagnetic emission which has a bandwidth less than that of a particular measuring apparatus or receiver. If the pulse repetition frequency of the signal is greater than the measuring bandwidth of the instrument, it is also regarded as narrowband emission.

3.22

broadband emission

An electromagnetic emission which has a bandwidth greater than that of a particular measuring apparatus or receiver. If the pulse repetition frequency of the signal is less than the measuring bandwidth of the instrument, it is also regarded as broadband emission.

3.23

continuous conducted emissions

Noise voltage/current presents in the power line or other leads.

3.24

impulsive ignition noise

Electromagnetic emission which is produced within the ignition system of the vehicle, unwanted and mainly of pulse nature.

3.25

ignition noise suppressor

A device used to limit impulsive ignition noise in a high voltage ignition line.

3.26

frequency sub-band

A certain part of frequency band specified for the measurement of frequency range, to count and evaluate the data of frequency sweep measurement test.

3.27

absorber lined shielded enclosure

The screened room with the internal top surface and the wall being installed with radio frequency absorbing material. The screened room usually uses metal flooring, but the frequency absorbing material can also be installed on the floor.

3.51

ground (reference) plane

A metal plane or conductive plane used as the common reference potential of the tested equipment and test equipment.

3.52

artificial network (AN)

A device inserted in the supply mains lead of apparatus to be tested which provides, in a given frequency range, a specified load impedance for the measurement of disturbance voltages and which may isolate the apparatus from the supply mains in that frequency range.

3.53

broadband artificial network

An artificial network inserted in the supply mains lead, signal line, control line and support system of apparatus to be tested, which provides a controllable impedance in all frequency ranges of a particular transmission.

3.54

peak detector

A detector, the output voltage of which is the peak value of an applied signal.

[GB/T 4365-2003, definition 161-04-24]

3.55

quasi-peak detector

A detector having specified electrical time constants which, when regularly repeated identical pulses are applied to it, delivers an output voltage which is a fraction of the peak value of the pulses, the fraction increasing towards 1 as the pulse repetition rate is increased.

[GB/T 4365-2003, definition 161-04-21]

The electromagnetic wave propagation mode of which the longitudinal component of electric field and magnetic field strength is zero.

3.63

TEM cell

An enclosed system (often a rectangular coaxial line), in which a wave is propagated in the transverse electromagnetic mode to produce a specified field for testing purposes.

3.64

strip line

A terminated transmission line consisting of two parallel plates between which a wave is propagated in the transverse electromagnetic mode to produce a specified field for testing purpose.

[GB/T 4365-2003, definition 161-04-31]

3.65

antenna factor

The ratio of the field strength of the receiving point to the generated voltage at the antenna output.

3.66

antenna matching unit

A device that forms/implements impedance matching in the antenna measurement frequency range with a measuring meter with an impedance of 50 Ω .

3.67

polarization

The directional characteristic of a sinusoidal electromagnetic wave or field vector determined by an electric field vector or any other specified field vector at a fixed point.

3.68

compression point

The signal level when the system output value is about to deviate from the theoretical value of the ideal linear system, and the measurement system begins to become the

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