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BS EN 50121-2:2017



BSI Standards Publication

Railway applications — Electromagnetic compatibility

Part 2: Emission of the whole railway
system to the outside world

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This British Standard is the UK implementation of EN 50121-2:2017. It supersedes BS EN 50121-2:2015 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/9, Railway Electrotechnical Applications.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Railway applications - Electromagnetic compatibility - Part 2: Emission of the whole railway system to the outside world

Applications ferroviaires - Compatibilité électromagnétique -
Partie 2: Emission du système ferroviaire dans son
ensemble vers le monde extérieur

Bahnwendungen - Elektromagnetische Verträglichkeit -
Teil 2: Störaussendungen des gesamten Bahnsystems in
die Außenwelt

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Contents	Page
European foreword.....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms, definitions and abbreviations	5
3.1 Terms and definitions.....	5
3.2 Abbreviations	6
4 Emission limits	6
4.1 Emission from the open railway system during train operation	6
4.2 Radio frequency emission from railway substations	6
5 Method of measurement of emission from moving rolling stock and substations	7
5.1 General and specific measurement parameters	7
5.1.1 General measurement parameters.....	7
5.1.2 Measurement parameter for moving trains.....	9
5.1.3 Measurement parameter for railway substations	10
5.2 Acquisition methods.....	10
5.2.1 General.....	10
5.2.2 Fixed frequency method	11
5.2.3 Frequency sweeping method	11
5.3 Transients	11
5.4 Measuring conditions	11
5.4.1 Weather conditions.....	11
5.4.2 Railway system operating modes	12
5.4.3 Multiple sources from remote trains.....	12
5.5 Test report	12
Annex A (informative) Background to the method of measurement.....	18
A.1 Introduction	18
A.2 Requirement for a special method of measurement	18
A.3 Justification for a special method of measurement	18
A.4 Frequency range	19
A.5 Antenna positions	19
A.6 Conversion of results if not measured at 10 m.....	19
A.7 Measuring scales	19
A.8 Repeatability of results.....	19
A.9 Railway system conditions	20
A.9.1 Weather.....	20

This is a preview of "BS EN 50121-2:2017". [Click here to purchase the full version from the ANSI store.](#)

A.9.2	Speed, traction power	20
A.9.3	Multiple sources from remote trains.....	20
A.10	Number of traction vehicles per train.....	20
Annex B (informative)	Cartography — Electric and Magnetic fields at traction frequencies	21
Annex C (informative)	Emission values for lower frequency range.....	22
Bibliography	25

European foreword

This document (EN 50121-2:2017) has been prepared by CLC/TC 9X, "Electrical and electronic applications for railways".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) [2017-11-07]
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) [2019-11-07]

This document supersedes EN 50121-2:2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

EN 50121-2:2016 includes the following significant technical change with respect to EN 50121-2:2015:

- a) deletion of Annex ZZ.

This European Standard will be read in conjunction with EN 50121-1.

EN 50121, *Railway applications — Electromagnetic compatibility*, consists of the following parts:

- *Part 1: General;*
- *Part 2: Emission of the whole railway system to the outside world [the present document];*
- *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 installations and apparatus.*

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1 Scope

This European Standard is intended to define the electromagnetic environment of the whole railway system including urban mass transit and light rail system. It describes the measurement method to verify the emissions, and gives the cartography values of the fields most frequently encountered.

This European Standard specifies the emission limits of the whole railway system to the outside world.

The emission parameters refer to the particular measuring points defined in Clause 5. These emissions should be assumed to exist at all points in the vertical planes which are 10 m from the centre lines of the outer electrified railway tracks, or 10 m from the fence of the substations.

Also, the zones above and below the railway system may be affected by electromagnetic emissions and particular cases need to be considered individually.

These specific provisions need to be used in conjunction with the general provisions in EN 50121-1.

For existing railway lines, it is assumed that compliance with the emission requirements of EN 50121-3-1, EN 50121-3-2, EN 50121-4 and EN 50121-5 will ensure the compliance with the emission values given in this part.

For newly built railway systems it is best practice to provide compliance to the emission limits given in this part of the standard (as defined in the EMC plan according to EN 50121-1).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 55016-1-1, *Specification for radio disturbance and immunity measuring apparatus and methods — Part 1-1: Radio disturbance and immunity measuring apparatus — Measuring apparatus (CISPR 16-1-1)*

EN 55016-1-4, *Specification for radio disturbance and immunity measuring apparatus and methods — Part 1-4: Radio disturbance and immunity measuring apparatus — Antennas and test sites for radiated disturbance measurements (CISPR 16-1-4)*

IEC 60050-161, *International Electrotechnical Vocabulary. Chapter 161: Electromagnetic compatibility*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purpose of this document, the terms and definitions given in IEC 60050-161 and the following apply.

3.1.1

apparatus

device or assembly of devices which can be used as an independent unit for specific functions

[SOURCE: IEC 60050-151:2001, 151-11-22]

3.1.2

environment

surroundings in which a product or system exists, including air, water, land, natural resources, flora, fauna, humans and their interrelation

[SOURCE: IEC Guide 109:2012, 3.3]