

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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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

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

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Foreword

This document (EN 50121-2:2015) 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) 2016-01-05
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2018-01-05

This document supersedes EN 50121-2:2006.

EN 50121-2:2015 includes the following significant technical changes with respect to EN 50121-2:2006:

- clarification of scope (Clause 1);
- set dated normative references (Clause 2);
- combination of former Clause 5 and Annex A related to method of measurement for moving trains and railway substations; (5.1)
- moving emission values for radiated H-fields in the frequency range 9 kHz – 150 kHz into new Annex C due to the fact that:
 - there are very few outside world victims;
 - there is low reproducibility;
- clarification of acquisition method (5.2).

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

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This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

This standard forms Part 2 of the European Standard series EN 50121, published under the general title "*Railway applications - Electromagnetic compatibility*". The series consists of:

- 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 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 shall be considered individually.

These specific provisions are to be used in conjunction with the general provisions in EN 50121-1:2015.

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 build railway systems it is best practice to provide compliance to the emission limits given in this part of the standard (to be 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 50121-1:2015, *Railway applications - Electromagnetic compatibility - Part 1: General*

EN 55016-1-1:2010, *Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus (CISPR 16-1-1:2010)*

EN 55016-1-4:2010, *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 16-1-4:2010)*

IEC 60050-161, *International Electrotechnical Vocabulary (IEV)*

3 Terms, definitions and abbreviations

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

3.1 Terms and definitions

3.1.1

apparatus

an electric or electronic product with an intrinsic function intended for implementation into a fixed railway installation