

Railway applications — Electromagnetic compatibility —

Part 3-2: Rolling stock — Apparatus

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 16, an inside back cover and a back cover.

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**Railway applications - Electromagnetic compatibility -
Part 3-2: Rolling stock - Apparatus**

Applications ferroviaires -
Compatibilité électromagnétique
Partie 3-2: Matériel roulant -
Appareils

Bahnanwendungen -
Elektromagnetische Verträglichkeit
Teil 3-2: Bahnfahrzeuge -
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CENELEC

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

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Foreword

This European Standard was prepared by SC 9XB, Electromechanical material on board of rolling stock, of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways, in accordance with the decisions taken by TC 9X.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50121-3-2 on 2000-04-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2001-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2003-04-01

This European Standard is to be read in conjunction with EN 50121-1:2000.

This standard forms Part 3-2 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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Annexes "normative" are part of the body of the standard.

Annexes designated "informative" are given only for information.

In this standard, annexes A and B are informative.

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1 Scope

This European Standard applies to emission and immunity aspects of EMC for electrical and electronic apparatus intended for use on railway rolling stock.

The frequency range considered is from d.c. to 400 GHz. At present, testing is not defined for frequencies above 1 GHz.

The application of tests shall depend on the particular apparatus, its configuration, its ports, its technology and its operating conditions.

This standard takes into account the internal environment of the railway rolling stock and the external environment of the railway, and interference to the apparatus from equipment such as hand-held radio transmitters.

If a port is intended to transmit or receive for the purpose of radio communication then the emission and immunity limits in this standard at the communication frequency do not apply.

This standard does not apply to transient emissions when starting or stopping the apparatus.

The objective of this standard is to define limits and test methods for electromagnetic emissions and immunity test requirements in relation to conducted and radiated disturbances.

These limits and tests represent essential electromagnetic compatibility requirements.

Emission requirements have been selected so as to ensure that disturbances generated by the apparatus operated normally on railway rolling stock do not exceed a level which could prevent other apparatus from operating as intended.

Likewise, the immunity requirements have been selected so as to ensure an adequate level of immunity for rolling stock apparatus.

The levels do not however cover extreme cases which may occur with an extremely low probability of occurrence in any location. Specific requirements which deviate from this standard shall be specified.

Test requirements are specified for each port considered.

These specific provisions are additional to the general provisions in EN 50121-1.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 50121-1	Railway applications - Electromagnetic compatibility - Part 1: General.
EN 50121-3-1	Part 3-1: Rolling stock - Train and complete vehicle.
EN 50155	Railway applications - Electronic equipment used on rolling stock.
EN 55011	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment (CISPR 11, modified).
EN 55022	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement (CISPR 22, modified).