SLOVENSKI STANDARD
oSIST prEN IEC 62132-8:2025

01-maj-2025

Integrirana vezja - Meritve elektromagnetne odpornosti - 8. del: Meritev odpornosti proti sevanju - Metoda z IC na tračnem valovodu

Integrated circuits - Measurement of electromagnetic immunity - Part 8: Measurement of radiated immunity - IC stripline method

Integrierte Schaltungen - Messung der elektromagnetischen Störfestigkeit - Teil 8: Messung der Störfestigkeit bei Einstrahlungen - IC-Streifenleiterverfahren

Circuits intégrés - Mesure de l'immunité électromagnétique - Partie 8: Mesure de l'immunité rayonnée - Méthode de la ligne TEM à plaques pour circuit intégré

Ta slovenski standard je istoveten z: **prEN IEC 62132-8:2025**

ICS:

31.200	Integrirana vezja, mikroelektronika	Integrated circuits. Microelectronics

oSIST prEN IEC 62132-8:2025 **en**

47A/1182/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 62132-8 ED2**	
DATE OF CIRCULATION: **2025-03-07**	CLOSING DATE FOR VOTING: **2025-05-30**
SUPERSEDES DOCUMENTS: **47A/1167/CD, 47A/1176/CC**	

IEC SC 47A : INTEGRATED CIRCUITS	
SECRETARIAT: Japan	SECRETARY: Mr Yoshinori FUKUBA
OF INTEREST TO THE FOLLOWING COMMITTEES:	HORIZONTAL FUNCTION(S):
ASPECTS CONCERNED: Electromagnetic Compatibility	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING **Attention IEC-CENELEC parallel voting** The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

Integrated circuits - Measurement of electromagnetic immunity - Part 8: Measurement of radiated immunity - IC stripline method

PROPOSED STABILITY DATE: 2029

NOTE FROM TC/SC OFFICERS:

SC47A WG9 reviewed all CC of 47A/1167/CD and resolve all comments in 47A/1176/CC, SC47A decided next step to be CDV (47A/1177A/RM, Decision 47A-2024-07).

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTEGRATED CIRCUITS – MEASUREMENT OF ELECTROMAGNETIC IMMUNITY –

Part 8: Measurement of radiated immunity – IC stripline method

FOREWORD

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IEC 62132-8 has been prepared by subcommittee 47A: Integrated circuits, of IEC technical committee 47: Semiconductor devices. It is an International Standard.

This second edition cancels and replaces the first edition published in 2012. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) [short description of the main changes].

The text of this International Standard is based on the following documents:

Draft	Report on voting
47A/XX/FDIS	47A/XX/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English [change language if necessary].

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

This part of IEC 62132 is to be read in conjunction with IEC 62132–1.

A list of all the parts in the IEC 62132 series, published under the general title *Integrated circuits – Measurement of electromagnetic immunity*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTEGRATED CIRCUITS – MEASUREMENT OF ELECTROMAGNETIC IMMUNITY –

Part 8: Measurement of radiated immunity – IC stripline method

1 Scope

This part of IEC 62132 specifies a method for measuring the immunity of an integrated circuit (IC) to radio frequency (RF) radiated electromagnetic disturbances using an IC stripline.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050 (all parts), *International Electrotechnical Vocabulary (available at http://www.electropedia.org)*

IEC 61000–4–20, *Electromagnetic compatibility (EMC) – Part 4-20: Testing and measurement techniques – Emission and immunity testing in transverse electromagnetic (TEM) waveguides*

IEC 62132-1, *Integrated circuits - Measurement of electromagnetic immunity - Part 1: General conditions and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62132-1, IEC 60050-131, IEC 60050–161 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
transverse electromagnetic mode
TEM
waveguide mode in which the components of the electric and magnetic fields in the propagation direction are much less than the primary field components across any transverse cross-section

Note 1 to entry: This note only applies to the French language.

3.2
TEM waveguide
open or closed transmission line system, in which a wave is propagating in the transverse electromagnetic mode to produce a specified field for testing purposes

3.3
IC stripline
TEM waveguide, consisting of an active conductor placed on a defined spacing over an enlarged ground plane, connected to a port structure on each end and an optional shielded enclosure

Note 1 to entry: This arrangement guides a wave propagation in the transverse electromagnetic mode to produce a specific field for testing purposes between the active conductor and the enlarged ground plane. The ground plane of the standard EMC test board, according to IEC 62132-1, is used. An optional shielding enclosure may be used to shield the IC stripline. In contrast to the open version without a shielding enclosure, the shied leads to a closed version of the IC stripline. For further information, see Annex A.

3.4
two-port TEM waveguide
TEM waveguide with input/output measurement ports at both ends

3.5
characteristic impedance
magnitude of the ratio of the voltage between the active conductor and the corresponding ground plane to the current on either conductor for any constant phase wave-front

Note 1 to entry: The characteristic impedance is independent of the voltage/current magnitudes and depends only on the cross sectional geometry of the transmission line. TEM waveguides are typically designed to have a 50 Ω characteristic impedance. For further information and equation to stripline arrangements, see Annex A.

3.6
primary field component
primary component
electric field component aligned with the intended test polarization

Note 1 to entry: For example, in IC stripline, the active conductor is parallel to the horizontal floor, and the primary mode electric field vector is vertical at the transverse centre of the IC stripline.

4 General

An IC to be evaluated for EMC performance is referred to as a device under test (DUT). The DUT should be mounted on an EMC test board according to IEC 62132–1. The EMC test board is provided with the appropriate measurement or monitoring points at which the DUT response parameters can be measured. It controls the geometry and orientation of the DUT relative to the active conductor and eliminates in the case of a closed version of the IC stripline any connecting leads within the housing (these are on the backside of the board, which is outside the housing).

For the IC stripline, one of the 50 Ω ports is terminated with a 50 Ω load. The other 50 Ω port is connected to the output of an RF disturbance generator. The injected RF disturbance signal exposes the DUT to an electromagnetic field determined by the injected power, the typical impedance and the distance between the ground plane of the EMC test board and the active conductor of the IC stripline. The relation is given in Annex A.

Rotating the EMC test board in the four possible orientations in the aperture to accept EMC test board of the IC stripline will affect the sensitivity of the DUT. Dependent upon the DUT, the response parameters of the DUT may vary (e.g. a change of current consumption, deterioration in function performance, waveform jitter). The intent of this test method is to provide a quantitative measure of the RF immunity of DUTs for comparison or other purposes.

For further information, see Annex A.

5 Test conditions

5.1 General

The test conditions shall meet the requirements as described in IEC 62132-1. In addition, the following test conditions shall apply.

5.2 Supply voltage

The supply voltage shall be as specified by the IC manufacturer. If the users of this procedure agree to other values, they shall be documented in the test report.

5.3 Frequency range

The effective frequency range of this radiated immunity procedure is 150 kHz to 6 GHz in combination with the VSWR characteristic ≤ 1,25 for f ≤ 3 GHz and ≤ 1,4 for f > 3 GHz. The upper frequency can be extended if the IC stripline does not exhibit significant higher order modes over the frequency range being measured.

NOTE 1 The given VSWR value of 1,4 is based on evolving technical solutions for IC striplines. For accuracy reasons the VSWR value is targeted as low as possible (e.g. 1,3).

NOTE 2 Higher-order modes can affect the VSWR of the IC Striplines by interfering with the TEM mode and perturb the desired field distribution.

6 Test equipment

6.1 General

The test equipment shall meet the requirements described in IEC 62132-1. In addition, the following test equipment requirements shall apply.

6.2 Cables

Double shielded or semi-rigid coaxial cable, of 50 Ω characteristic impedance, may be required to interface with the IC stripline.

6.3 Shielding

Testing in a shielded room is only necessary for the open IC stripline version. The closed version of the IC stripline is shielded by its housing.

6.4 RF disturbance generator

An RF disturbance generator with sufficient power handling capabilities shall be used. The RF disturbance generator may comprise of an RF signal generator with a modulation function, an RF power amplifier and an optional attenuater. The voltage standing wave ratio (VSWR) at the output of the RF disturbance generator shall be less than 1,5 over the frequency range being measured.

6.5 IC stripline

The IC stripline (open or closed version) used for this test procedure shall be fitted with an aperture to mate with the EMC test board.

For further information as to field strength determination, IC stripline designs and the limitation of geometrical dimensions of closed version, see Annex A, Annex B and Annex C.

6.6 50 Ω termination

A 50 Ω termination with a VSWR ≤ 1,1 for f ≤ 3 GHz and ≤ 1,2 for f > 3 GHz up to the maximum used frequency and sufficient power handling capabilities over the frequency range of measurement is recommended for the IC stripline 50 Ω port not connected to the RF disturbance generator.

6.7 DUT monitor

The performance of the DUT shall be monitored for indications of performance degradation. The monitoring equipment shall not be adversely affected by the injected RF disturbance signal.

7 Test setup

7.1 General

A test setup shall meet the requirements described in IEC 62132-1. In addition, the following test setup requirements shall apply.