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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 44937.3-2025

**Integrated circuits - Measurement of electromagnetic emissions
- Part 3: Measurement of radiated emissions - Surface scan
method**

集成电路 电磁发射测量 第3部分：辐射发射测量 表面扫描法
(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 3 of GB/T 44937 "Electromagnetic Emission Measurement of Integrated Circuits". GB/T 44937 has the following publications.

part.

- Part 1: General Conditions and Definitions;
- Part 2: Radiation Emission Measurement TEM Cell and Broadband TEM Cell Method;
- Part 3: Surface Scanning Method for Radiation Emission Measurement;
- Part 4: Conducted emission measurement using the 1ohm/150ohm direct coupling method;
- Part 5: Conducted Emission Measurement Stand Faraday Cage Method;
- Part 6: Conducted Emission Measurement Magnetic Field Probe Method;
- Part 8: Radiated Emission Measurement IC Stripline Method this document is equivalent to IEC TS61967-3:2014 "Measurement of electromagnetic emission from integrated circuits - Part 3: Measurement of radiated emission".

The document type for "Surface Scanning Method" has been changed from an IEC technical specification to a Chinese national standard.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

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

This document is under the jurisdiction of the National Integrated Circuit Standardization Technical Committee (SAC/TC599).

Introduction

To standardize electromagnetic emission measurement for integrated circuits, and to provide different electromagnetic emission measurement methods for integrated circuit manufacturers and testing institutions.

GB/T 44937, "Measurement of Electromagnetic Emissions of Integrated Circuits," specifies the general conditions, definitions, and different measurement methods for electromagnetic emission measurements of integrated circuits.

The experimental procedures and requirements for quantitative methods are proposed to consist of nine parts.

---Part 1: General Conditions and Definitions. The purpose is to define the general conditions and definitions for electromagnetic emission measurements of integrated circuits.

---Part 1-1. General Conditions and Definitions of Near-Field Scanning Data Exchange Format. The purpose is to specify the near-field scanning data exchange format.
Format.

---Part 2: Radiation Emission Measurement using TEM Cells and Broadband TEM Cells. The aim is to define the TEM cell and broadband TEM cell methods.

Test procedures and requirements for the TEM chamber method.

---Part 3: Surface Scanning Method for Radiation Emission Measurement. The purpose is to specify the test procedures and requirements for the surface scanning method.

---Part 4: Conducted Emission Measurement - 1ohm/150ohm Direct Coupling Method. The purpose is to define the 1ohm/150ohm direct coupling method.

Test procedures and test requirements.

---Part 4-1.Application Guidelines for Conducted Emission Measurements using the 1ohm/150ohm Direct Coupling Method. The aim is to provide guidance on the application of the 1ohm/150ohm direct coupling method.

Application guidelines for the coupling method.

---Part 5: Conducted Emission Measurement Stand Faraday Cage Method. The purpose is to define the test procedures for the stand Faraday cage method.

and testing requirements.

---Part 6: Conducted Emission Measurement Using Magnetic Field Probes. The purpose is to specify the test procedures and requirements for the magnetic field probe method.

---Part 8: Radiated Emission Measurement - IC Stripline Method. The purpose is to specify the test procedures and requirements for the IC stripline method.

Electromagnetic emission measurement of integrated circuits Part 3: Surface Scanning Method for Radiation Emission Measurement

1 Scope

This document describes a measurement method for evaluating near-field electric, near-field magnetic, or near-field electromagnetic components on or near the surface of an integrated circuit (IC).

This measurement method is designed for IC architecture analysis, such as planar planning and power distribution optimization. It is also applicable to measuring the reliability of scanning probes.

This method can scan not only the IC itself, but also its surrounding environment, in close proximity to any circuit board.

To compare the surface scan emission of different ICs, it is advisable to use the standard test board specified in IEC 61967-1.

This measurement method provides a near-field emission map of the electric or magnetic