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

GB/T 44937.2-2025

**Integrated circuits - Measurement of electromagnetic emissions
- Part 2: Measurement of radiated emissions - TEM cell and
wideband TEM cell method**

集成电路 电磁发射测量 第2部分：辐射发射测量 TEM小室和宽带TEM小室法
(English Translation)

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Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative References	
3 Terms and Definitions	
4 Overview	
5 Test conditions	
5.1 General Rules	
5.2 Power Supply Voltage	
5.3 Frequency Range	
6 Test equipment	
6.1 General Rules	
6.2 Shielding	
6.3 Radio Frequency Measurement Instruments	
6.4 Preamplifier	
6.5 TEM chamber	
6.6 Broadband TEM (GTEM) Cell	
6.7 50ohm terminal	
6.8 System Gain	
7 Test Setup	
7.1 General Rules	
7.2 Test Configuration	
7.3 Test PCB	
8 Experimental Procedure	
8.1 General Rules	
8.2 Measuring ambient noise	
8.3 Check the DUT's operating status	
8.4 Measuring DUT Emissions	
9 Test Report	
9.1 General Rules	
9.2 Measurement Conditions	
10 IC transmit reference level	

Appendix A (Informative) Example 7 of Calibration and Setup Verification

Appendix B (Informative) Description of TEM Cells and Broadband TEM Cells

B.1 TEM chamber

B.2 Broadband TEM Cell

Appendix C (Informative) Calculation of Dipole Moment Based on Measured Data

C.1 Overview

C.2 Calculation of Dipole Moment

Appendix D (Informative) Launch Data Specification

D.1 Overview

D.2 Transmit Level Specification

D.3 Result Presentation Methods

D.4 Example

References

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 2 of GB/T 44937 "Measurement of Electromagnetic Emissions of Integrated Circuits". GB/T 44937 has been published as follows.

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 Using Magnetic Field Probes;

---Part 8: Radiated Emission Measurement IC Stripline Method this document is equivalent to IEC 61967-2:2005 "Measurement of electromagnetic emissions from integrated circuits 150 kHz to 1 GHz - Part 2: Radiation".

Emission measurement TEM cell and broadband TEM cell methods.

The following minimal editorial changes have been made to this document.

---To align with existing standards, the standard title has been changed to "Measurement of Electromagnetic Emissions of Integrated Circuits - Part 2: Measurement of Radiated Emissions".

TEM cell and broadband TEM cell method.

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 2: Radiation Emission Measurement TEM Chamber and Broadband TEM small cell method

1 Scope

This document describes a method for measuring electromagnetic radiation from integrated circuits (ICs). The IC under test must be mounted on an IC test printed circuit board.

The PCB is fixed to the top or bottom of a transverse electromagnetic wave (TEM) cell or a gigahertz transverse electromagnetic wave (GTEM) cell.

It is located on a mating port (called the housing port). Unlike typical use where it is located inside the chamber, this PCB is integrated as part of the chamber wall.

This method applies to any modified TEM or GTEM cell with added housing ports (see Appendix B). However, the radio frequency being measured...

(RF) voltage is affected by many factors. The main factors affecting the measured RF voltage are the core board and the IC test PCB (chamber housing).

The distance between them.

This method uses a 1GHz TEM cell (the distance between the core board and the ground plane is 45mm) and a GTEM cell (the distance between the core board and the mating port area).

The experiment was conducted with an average ground-level distance of 45 mm. Other cells may not need to produce the same spectral output, but only require similar frequency and sensitivity.

Its characteristics allow it to also be used for comparative measurements. This is applicable