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BASIC EMC PUBLICATION

Electromagnetic compatibility (EMC) –

**Part 4-6:
Testing and measurement techniques –
Immunity to conducted disturbances,
induced by radio-frequency fields**

WITH WHICH

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CONTENTS

FOREWORD	7
INTRODUCTION	11
1 Scope and object	13
2 Normative references	13
3 Definitions	13
4 General	17
5 Test levels	19
6 Test equipment	19
6.1 Test generator	19
6.2 Coupling and decoupling devices	21
6.3 Verification of the common mode impedance at the EUT port of coupling and decoupling devices	27
6.4 Setting of the test generator	29
7 Test set-up for table-top and floor-standing equipment	31
7.1 Rules for selecting injection methods and test points	31
7.2 Procedure for CDN injection application	35
7.3 Procedure for clamp injection when the common-mode impedance requirements can be met	35
7.4 Procedure for clamp injection when the common-mode impedance requirements cannot be met	37
7.5 Procedure for direct injection	37
7.6 EUT comprising a single unit	39
7.7 EUT comprising several units	39
8 Test procedure	39
9 Evaluation of the test results	41
10 Test report	43
Annex A (normative) Additional information regarding clamp injection	67
Annex B (informative) Selection criteria for the frequency range of application	77
Annex C (informative) Guide for selecting test levels	81
Annex D (informative) Information on coupling and decoupling networks	83
Annex E (informative) Information for the test generator specification	91
Annex F (informative) Test set-up for large EUTs	93
Bibliography	99
Figure 1 – Rules for selecting the injection method	33
Figure 2 – Immunity test to RF conducted disturbances	47
Figure 3 – Test generator set-up	49
Figure 4 – Definition of the wave shapes occurring at the output of the EUT port of a coupling device (e.m.f. of test level 1)	49
Figure 5 – Principle of coupling and decoupling	55

Figure 6 – Principle of coupling and decoupling according to the clamp injection method	55
Figure 7 – Details of set-ups and components to verify the essential characteristics of coupling and decoupling devices and the 150 Ω to 50 Ω adapters	59
Figure 8 – Set-up for level setting (see 6.4.1)	61
Figure 9 – Example of test set-up with a single unit system.....	63
Figure 10 – Example of a test set-up with a multi-unit system	65
Figure A.1 – Circuit for level setting set-up in a 50 Ω test Jig	69
Figure A.2 – The 50 Ω test jig construction	69
Figure A.3 – Construction details of the EM clamp	71
Figure A.4 – Concept of the EM clamp (electromagnetic clamp).....	73
Figure A.5 – Coupling factor of the EM clamp	73
Figure A.6 – General principle of a test set-up using Injection clamps.....	75
Figure A.7 – Example of the test unit locations on the ground plane when using injection clamps (top view)	75
Figure B.1 – Start frequency as function of cable length and equipment size.....	79
Figure D.1 – Example of a simplified diagram for the circuit of CDN-S1 used with screened cables (see 6.2.1).....	85
Figure D.2 – Example of simplified diagram for the circuit of CDN-M1/-M2/-M3 used with unscreened supply (mains) lines (see 6.2.2.1).....	85
Figure D.3 – Example of a simplified diagram for the circuit of CDN-AF2 used with unscreened non-balanced lines (see 6.2.2.3)	87
Figure D.4 – Example of a simplified diagram for the circuit of a CDN-T2, used with an unscreened balanced pair (see 6.2.2.2).....	87
Figure D.5 – Example of a simplified diagram of the circuit of a CDN-T4 used with unscreened balanced pairs (see 6.2.2.2).....	89
Figure D.6 – Example of a simplified diagram of the circuit of a CDN-T8 used with unscreened balanced pairs (see 6.2.2.2).....	89
Figure F.1 – Example of large EUT test set-up with elevated horizontal ground reference plane	95
Figure F.2 – Example of large EUT test set-up with vertical ground reference plane.....	97
Table 1 – Test levels	19
Table 2 – Characteristics of the test generator.....	21
Table 3 – Main parameter of the combination of the coupling and decoupling device.....	21
Table B.1 – Main parameter of the combination of the coupling and decoupling device when the frequency range of test is extended above 80 MHz	77
Table E.1 – Required power amplifier output power to obtain a test level of 10 V	91

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields

FOREWORD

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International Standard IEC 61000-4-6 has been prepared by subcommittee 77B: High-frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

This standard forms part 4-6 of IEC 61000. It has the status of a basic EMC publication in accordance with IEC Guide 107, *Electromagnetic compatibility – Guide to the drafting of electromagnetic compatibility publications*.

This consolidated version of IEC 61000-4-6 consists of the second edition (2003) [documents 77B/377/FDIS and 77B/384/RVD], its amendment 1 (2004) [documents 77B/426/FDIS and 77B/431/RVD] and its amendment 2 (2006) [documents 77B/492/FDIS and 77B/502/RVD].

The technical content is therefore identical to the base edition and its amendments and has been prepared for user convenience.

It bears the edition number 2.2.

A vertical line in the margin shows where the base publication has been modified by amendments 1 and 2.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

Withdrawn

INTRODUCTION

IEC 61000 is published in separate parts according to the following structure:

Part 1: General

- General considerations (introduction, fundamental principles)
- Definitions, terminology

Part 2: Environment

- Description of the environment
- Classification of the environment
- Compatibility levels

Part 3: Limits

- Emission limits
- Immunity limits (in so far as they do not fall under the responsibility of the product committees)

Part 4: Testing and measurement techniques

- Measurement techniques
- Testing techniques

Part 5: Installation and mitigation guidelines

- Installation guidelines
- Mitigation methods and devices

Part 6: Generic standards

Part 9: Miscellaneous

Each part is further subdivided into several parts, published either as international standards or as technical specifications or technical reports, some of which have already been published as sections. Others will be published with the part number followed by a dash and a second number identifying the subdivision (example : 61000-6-1).

This part is an international standard which gives immunity requirements and test procedure related to conducted disturbances induced by radio-frequency fields.

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields

1 Scope and object

This part of IEC 61000-4 relates to the conducted immunity requirements of electrical and electronic equipment to electromagnetic disturbances coming from intended radio-frequency (RF) transmitters in the frequency range 9 kHz up to 80 MHz. Equipment not having at least one conducting cable (such as mains supply, signal line or earth connection) which can couple the equipment to the disturbing RF fields is excluded.

NOTE 1 Test methods are defined in this part for measuring the effect that conducted disturbing signals, induced by electromagnetic radiation, have on the equipment concerned. The simulation and measurement of these conducted disturbances are not adequately exact for the quantitative determination of effects. The test methods defined are structured for the primary objective of establishing adequate repeatability of results at various facilities for quantitative analysis of effects.

The object of this standard is to establish a common reference for evaluating the functional immunity of electrical and electronic equipment when subjected to conducted disturbances induced by radio-frequency fields. The test method documented in this part of IEC 61000 describes a consistent method to assess the immunity of an equipment or system against a defined phenomenon.

NOTE 2 As described in IEC Guide 107, this is a basic EMC publication for use by product committees of the IEC. As also stated in Guide 107, the IEC product committees are responsible for determining whether this immunity test standard should be applied or not, and if applied, they are responsible for determining the appropriate test levels and performance criteria. TC 77 and its sub-committees are prepared to co-operate with product committees in the evaluation of the value of particular immunity tests for their products.

2 Normative references

The following referenced documents are indispensable for the application 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(161), *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*