

# CONSOLIDATED VERSION

# VERSION CONSOLIDÉE



**Noise suppression sheet for digital devices and equipment –  
Part 2: Measuring methods**

**Plaque réduisant le bruit des dispositifs et appareils numériques –  
Partie 2: Méthodes de mesure**



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IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
Fax: +41 22 919 03 00  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

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**Noise suppression sheet for digital devices and equipment –  
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# CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references .....	6
3 General .....	6
4 Measuring methods .....	7
4.1 Intra-decoupling ratio: $R_{da}$ .....	7
4.2 Inter-decoupling ratio: $R_{de}$ .....	12
4.3 Transmission attenuation power ratio: $R_{tp}$ .....	15
4.4 Radiation suppression ratio: $R_{rs}$ .....	19
4.5 Line-decoupling ratio: $R_{dl}$ .....	23
Figure 1 – Schematic diagram of a pair of antennas and NSS under test .....	7
Figure 2 – A pair of antennas and NSS under test .....	8
Figure 3 – Frequency response of coupling between a pair of antennas.....	8
Figure 4 – Recommended examples of small loop antennas for the measurement .....	9
Figure 5 – Cross-sectional view of the measuring configuration .....	10
Figure 6 – Schematic diagram of the measuring configuration .....	11
Figure 7 – Schematic diagram of a pair of loop antennas and test sample .....	13
Figure 8 – Schematic diagram of a pair of antenna and test sample.....	13
Figure 9 – Schematic diagram of the measuring configuration .....	14
Figure 10 – Schematic diagram of the measuring method for transmission attenuation power ratio $R_{tp}$ .....	16
Figure 11 – Data examples of the measurement results.....	18
Figure 12 – Measurement system diagram of $R_{rs}$ .....	19
Figure 13 – Schematic diagram of test fixture .....	19
Figure 14 – Size and structure of test fixture.....	20
Figure 15 – Test sample attachment on test fixture .....	22
Figure 16 – Test fixture set-up on turntable.....	22
Figure 17 – Noise path.....	24
Figure 18 – A test fixture for line decoupling measurement.....	25
Figure 19 – Schematic diagram of MSL and loop antenna set-up.....	25
Figure 20 – NSS, loop antenna and magnetic flux configuration.....	26
Table 1 – Merits and limitations of the recommended antennas .....	10
Table 2 – Dimensions of loop antennas .....	10
Table 3 – Dimensions of test sample .....	11
Table 4 – Dimensions of loop antennas .....	14
Table 5 – Dimensions of test fixture .....	16
Table 6 – Dimensions of test sample .....	17
Table 7 – Dimensions of test fixture .....	20
Table 8 – Dimensions of test sample .....	21
Table 9 – Noise suppression effect classified as noise path and NSS position .....	24

Table 10 – Dimensions of the MSL ..... 26

Table 11 – Dimensions of loop antenna ..... 26

Table 12 – Dimensions of the test sample ..... 27

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**NOISE SUPPRESSION SHEET  
FOR DIGITAL DEVICES AND EQUIPMENT –****Part 2: Measuring methods**

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**This Consolidated version of IEC 62333-2 bears the edition number 1.1. It consists of the first edition (2006-05) [documents 51/853/FDIS and 51/861/RVD] and its amendment 1 (2015-08) [documents 51/1068/CDV and 51/1088/RVC]. The technical content is identical to the base edition and its amendment.**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions and deletions are displayed in red, with deletions being struck through. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 62333-2 has been prepared IEC technical committee 51: Magnetic components and ferrite materials.

This standard is to be used in conjunction with IEC 62333-1.

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

IEC 62333 consists of the following parts, under the general title *Noise suppression sheet for digital devices and equipment*:

Part 1: Definitions and general properties

Part 2: Measuring methods

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability 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

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# NOISE SUPPRESSION SHEET FOR DIGITAL DEVICES AND EQUIPMENT –

## Part 2: Measuring methods

### 1 Scope

This part of IEC 62333 specifies the methods for measuring the electromagnetic characteristics of a noise suppression sheet. Those methods are intended to provide useful and repeatable measurements to characterize the performance of the noise suppression sheets, so that manufacturers and their customers are able to obtain the same results.

### 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 amendment) applies.

IEC 62333-1, *Noise suppression sheet for digital devices and equipment – Part 1: Definitions and general properties*

CISPR 16-1, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1: Radio disturbance and immunity measuring apparatus*

CISPR 22, *Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement*

### 3 General

Electromagnetic interference between electronic devices, and emission of radiation from electronic devices are caused, in part, by RF current generated by active devices which are driven at high frequency. Printed-circuit board (PCB), devices mounted on the PCB, and all other connected circuits or cables can act as antennas to radiate the RF noise. Levels of the electromagnetic interference and the emission are proportional to the RF current, and are also affected significantly by PCB design, radiation efficiency of the antennas, and noise coupling coefficients between the devices and the antennas.

The noise suppression sheet (NSS) is used for decoupling of the noise path, suppressing RF noise current, and reducing radiation. The noise suppression effect of the NSS can be evaluated by four parameters. They are defined as intra-decoupling ratio ( $R_{da}$ ), inter-decoupling ratio ( $R_{de}$ ), transmission attenuation power ratio ( $R_{tp}$ ) and radiation suppression ratio ( $R_{rs}$ ).

A pair of antennas is held close to each other for the measuring intra-decoupling ratio ( $R_{da}$ ) and inter-decoupling ratio ( $R_{de}$ ). One antenna acts as a noise source and another one as a receiver. Both decoupling ratios are derived from comparison before and after the NSS is installed nearby the antennas. These measuring procedures represent practical configurations of the NSS. Practically, the NSS is installed near the noise source or the noise interfered part, inside of the electronic equipments.