

# INTERNATIONAL STANDARD

**Coaxial communication cables –  
Part 1-113: Electrical test methods – Test for attenuation constant**



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**Coaxial communication cables –  
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INTERNATIONAL  
ELECTROTECHNICAL  
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## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Attenuation constant.....	6
5 Test method .....	7
5.1 Equipment .....	7
5.2 Test specimen .....	7
5.3 Procedure.....	7
5.3.1 Calibration.....	7
5.3.2 Measurement.....	8
6 Expression of test results .....	8
6.1 Expression.....	8
6.2 Temperature correction.....	8
7 Form fitting .....	8
Bibliography.....	10

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**COAXIAL COMMUNICATION CABLES –****Part 1-113: Electrical test methods –  
Test for attenuation constant****FOREWORD**

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International Standard IEC 61196-1-113 has been prepared by subcommittee 46A: Coaxial cables, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories.

This second edition cancels and replaces the first edition published in 2009. This edition constitutes a technical revision.

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

- a) diverse form fitting equations are provided.

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

FDIS	Report on voting
46A/1350/FDIS	46A/1356/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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

A list of all parts in the IEC 61196 series, published under the general title *Coaxial communication cables*, 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 "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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- withdrawn,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

A bilingual version of this publication may be issued at a later date.

## INTRODUCTION

The attenuation curve may show ripples owing to impedance mismatch, instrument noise or local irregularities.

In this case, a form fitting may be applied to smoothe the curve. The values on the fitting curve may be used to assess the compliance with the requirements.

## COAXIAL COMMUNICATION CABLES –

### Part 1-113: Electrical test methods – Test for attenuation constant

#### 1 Scope

This part of IEC 61196 applies to coaxial communications cables. It specifies a test method for determining the attenuation constant of coaxial cables for use in communications systems. The test is applicable preferably at frequencies  $\geq 5$  MHz, but also for lower frequencies if the magnitude of the complex characteristic impedance is approximately equal to the nominal characteristic impedance of the specimen or if a form fitting function is applied.

#### 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 61196-1, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61196-1 apply.

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

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

#### 4 Attenuation constant

The attenuation constant is defined by:

$$\alpha = 10 \cdot \log \left( \frac{P_1}{P_2} \right) \cdot \frac{100}{l} \quad \text{in dB/100 m} \quad (1)$$

where

$\alpha$  is the attenuation constant in dB/100 m (frequency dependent);

$P_1$  is the input power of a receiver where the load impedance and the receiver impedance are equal and of the same value as the nominal value of the specimen;

$P_2$  is the output power of a source where the load impedance and the source impedance are equal and of the same value as the nominal value of the specimen;

$l$  is the physical length of the specimen in m.