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**Cable assemblies, cables, connectors
and passive microwave components -
Screening attenuation measurement by
the reverberation chamber method.**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 61726:2002 sisaldab Euroopa standardi EN 61726:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.12.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 61726:2002 consists of the English text of the European standard EN 61726:2000.</p> <p>This document is endorsed on 18.12.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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English version

**Cable assemblies, cables, connectors and passive microwave components
Screening attenuation measurement by the reverberation chamber method
(IEC 61726:1999)**

Câbles, cordons, connecteurs et
composants hyperfréquence passifs
Mesure de l'atténuation d'écran par la
méthode de la chambre réverbérante
(CEI 61726:1999)

Konfektionierte Kabel, Kabel,
Steckverbinder und passive
Mikrowellenbauteile - Messung der
Schirmdämpfung mit dem
Strahlungskammerverfahren
(IEC 61726:1999)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 46A/356/FDIS, future edition 1 of IEC 61726, prepared by SC 46A "Coaxial cables" des IEC TC 46 "Cables, wires, waveguides, r.f. connectors, and accessories for communication and signalling", was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61726 on 2000-01-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2000-10-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2003-01-01

Annexes designated "informative" are given for information only. In this standard, annexes A, B, C and D are informative.

Endorsement notice

The text of the International Standard IEC 61726:1999 was approved by CENELEC as a European Standard without any modification.

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INTERNATIONAL STANDARD

IEC
61726

Second edition
1999-11

**Cable assemblies, cables, connectors
and passive microwave components –
Screening attenuation measurement
by the reverberation chamber method**

*Câbles, cordons, connecteurs et composants
hyperfréquence passifs –
Mesure de l'atténuation d'écran par la méthode
de la chambre réverbérante*



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* See web site address on title page.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CABLE ASSEMBLIES, CABLES, CONNECTORS
AND PASSIVE MICROWAVE COMPONENTS –
SCREENING ATTENUATION MEASUREMENT
BY THE REVERBERATION CHAMBER METHOD**

FOREWORD

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International Standard IEC 61726 has been prepared by subcommittee 46A: Coaxial cables, of IEC technical committee 46: Cables, wires, waveguides, r.f. connectors and accessories for communication and signalling.

This second edition cancels and replaces the first edition, which was issued as a type 3 technical report in 1995. It constitutes a technical revision and now has the status of an International Standard.

The text of this standard is based on the following documents:

FDIS	Report on voting
46A/356/FDIS	46A/359/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annexes A, B, C and D are for information only.

The committee has decided that this publication remains valid until 2005. At this date, in accordance with the committee's decision, the publication will be

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

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INTRODUCTION

The requirements of modern electronic equipment have indicated a demand for a method of testing screening attenuation of microwave components over their whole frequency range. Convenient test methods exist for low frequencies and components of regular shape and these test methods are described in the relevant product specifications.

For higher frequencies and for components of irregular shape a new test method has become necessary and such a test method is described in this International Standard.

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CABLE ASSEMBLIES, CABLES, CONNECTORS AND PASSIVE MICROWAVE COMPONENTS – SCREENING ATTENUATION MEASUREMENT BY THE REVERBERATION CHAMBER METHOD

1 Scope

This International Standard describes the measurement of screening attenuation by the reverberation chamber test method, sometimes named mode stirred chamber, suitable for virtually any type of microwave component and having no theoretical upper frequency limit. It is only limited toward low frequencies due to the size of the test equipment, which is frequency dependent and is only one of several methods of measuring screening attenuation.

For the purpose of this standard, examples of microwave components are waveguides, phase shifters, diplexers/multiplexers, power dividers/combiners etc.

2 Basic description of the reverberation chamber method

The reverberation chamber method for measurement of the screening attenuation of microwave components consists of exposing the device under test (DUT) to an almost homogeneous and isotropic electromagnetic field and then measuring the signal level induced into the device.

These conditions are achieved by the use of a shielded enclosure, which acts as an oversized cavity (in terms of wavelength), with a high quality factor. Its boundary conditions are continuously agitated by a rotating reflective surface (mode stirrer), mounted within the chamber, which enables the field to approach homogeneous and isotropic conditions during one revolution.

Electromagnetic power is fed to the chamber by means of an input or transmitting antenna.

The strength of the field inside the chamber is measured through a reference antenna. The ratio of the injected power (input antenna) to the received power (reference antenna) is the insertion loss of the cavity. The insertion loss is strongly frequency dependent and is also dependent on the quality factor of the cavity.

It has been shown that, due to the isotropic field, any antenna placed inside the cavity behaves as if its gain was unity [1]¹⁾, therefore no directional effect is to be expected. If the device under test is electrically short, its screening attenuation will be directly related to usual transfer parameters (Z_t and Z_r). If the device under test is not electrically short the screening attenuation may still be related to Z_t and Z_r in some simple cases (evenly distributed leakage, periodically distributed leakage) using summing functions derived from antenna network theory.

1) Figures in square brackets refer to the Bibliography.