

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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**Radio-frequency connectors –  
Part 1-2: Electrical test methods – Insertion loss**

**Connecteurs pour fréquences radioélectriques –  
Partie 1-2: Méthodes d'essai électrique – Perte d'insertion**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RADIO-FREQUENCY CONNECTORS –****Part 1-2: Electrical test methods – Insertion loss**

## FOREWORD

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International Standard IEC 61169-1-2 has been prepared by subcommittee 46F: RF and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories.

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

FDIS	Report on voting
46F/466/FDIS	46F/480/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 of the IEC 61169 series, under the general title *Radio-frequency connectors*, 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- withdrawn,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.

## RADIO-FREQUENCY CONNECTORS –

### Part 1-2: Electrical test methods – Insertion loss

#### 1 Scope

This part of IEC 61169 provides test methods for the insertion loss of radio-frequency (RF) connectors.

This document is applicable to cable RF connectors, microstrip RF connectors and RF connector adapters. It is also applicable to RF channels in multi-RF channel connectors and hybrid connectors which contain any combination of coaxial contact, optical fibres contact, and current-carrying electrical contact element.

#### 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 61169-1, *Radio frequency connectors – Part 1: Generic specification – General requirements and measuring methods*

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61169-1 and the following 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>

##### 3.1

##### **insertion loss**

loss of power resulting from the insertion of a connector or similar device into a transmission line, expressed by formula (1), in decibels:

$$IL = -10 \lg \left( \frac{P_2}{P_1} \right) \quad (1)$$

where

$IL$  is the insertion loss, in dB;

$P_1$  is the input power into the RF connector, transmitted by the signal source;

$P_2$  is the output power from the RF connector to the load, transmitted by the signal source.