

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Radio frequency and coaxial cable assemblies –  
Part 2-2: Blank detail specification for flexible coaxial cable assemblies**

**Cordons coaxiaux et cordons pour fréquences radioélectriques –  
Partie 2-2: Spécification particulière-cadre pour cordons coaxiaux souples**

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La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –****Part 2-2: Blank detail specification for flexible coaxial cable assemblies**

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IEC 60966-2-2 has been prepared by IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This third edition cancels and replaces the second edition published in 2003. This edition constitutes a technical revision.

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

- a) added Clause 1 "Scope";
- b) added Clause 2 "Normative references";
- c) rewrote Clause 4 "Instructions";

- d) added "[6] Outline for flexible cable assemblies", "[7] The relative position dimensions of the interface";
- e) added "Corona extinction voltage";
- f) modified "[19] Value", "[20] Remark";
- g) added "Insertion loss difference";
- h) added "Shaking test";
- i) added "Impact test";
- j) changed "Vibrations, bumps and shocks test" to "Vibrations, shocks test".

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

Draft	Report on voting
46/967/FDIS	46/997/RVD

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

The language used for the development of this International Standard is English.

A list of all parts in the IEC 60966 series, published under the general title *Radio frequency and coaxial cable assemblies*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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- reconfirmed,
- withdrawn, or
- revised.

## RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

### Part 2-2: Blank detail specification for flexible coaxial cable assemblies

#### 1 Scope

This part of IEC 60966 is a blank detail specification that relates to flexible coaxial cable assemblies operating in the transverse electromagnetic mode (TEM).

The creation of a uniform layout and style of detail specifications is determined by the use of a blank detail specification pro forma. The detail specification may be prepared by a national organization, a manufacturer or a user.

#### 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 60068 (all parts), *Environmental testing*

IEC 60966-1:2019, *Radio frequency and coaxial cable assemblies – Part 1: Generic specification – General requirements and test methods*

IEC 60966-2-1:2024, *Radio frequency and coaxial cable assemblies – Part 2-1: Sectional specification for flexible coaxial cable assemblies – 2:2024*

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IEC 61196-1-126, *Coaxial communication cables – Part 1-126: Electrical test methods – Corona extinction voltage*

#### 3 Terms and definitions

No terms and definitions are listed in this document.

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

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

#### 4 Instructions

Instructions to complete a blank detail specification shall, as far as possible, be written in accordance with the pro forma which has:

- a) a front page with a general description and a drawing or isometric sketch of the cable assembly and its possible variants;
- b) ratings, characteristics and inspection requirements (those which are not required or specified shall be omitted).



The numbers shown in brackets on this and the following pages correspond to the following items of required information, which should be entered in the spaces provided.

- [1] Name and address of the organization that has prepared the document.
- [2] IEC document number, issue number and date of issue.
- [3] Address of the organization from which the document is available.
- [4] Related documents.
- [5] Any other reference to the cable assembly, national reference, trade name, etc.
- [6] A drawing of the cable assembly giving the outline and dimensions in millimeters.
- [7] The relative position dimensions of the interface.
- [8] Maximum diameter of flexible cable.
- [9] Minimum bending inside diameter.
- [10] Nominal characteristic impedance of the cable assembly.
- [11] Frequency range of use of the cable assembly.
- [12] Weight, function of the length of the cable assembly.
- [13] Climatic category of the cable assembly related to IEC 60068.
- [14] Description, if applicable, of the components used for the manufacture of the cable assembly.
- [15] Variants of the cable assembly can be listed in one detail specification. The variants may differ by colour, connector material, connector sex or type. (Inspection for quality conformance will be the same for all variants whereas the ratings and characteristics can change.).
- [16] Inspection values, ratings or characteristics of the cable assembly. The properties not specified shall be omitted.
- [17] Reference to the appropriate subclause in the generic specifications.
- [18] The requirements in the sectional specifications.
- [19] The value either guaranteed or used for the defined test.
- [20] All information required by the sectional specification and any remarks considered as important for understanding the test.



## 5 Detail specification

### RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES – Part 2-2: Blank detail specification for flexible coaxial cable assemblies

[1] Prepared by:		[2] Document no.:
		Issue:
		Date:
[3] Available from:	[4] Generic specification: IEC 60966-1 Sectional specification: IEC 60966-2-1 Blank detail specification: IEC 60966-2-2	
[5] Additional references:		
[6] Outline for flexible cable assemblies		
[7] The relative position dimensions of the interface		
		
<p>One end connector</p> <p>Other end connector</p> <p>NOTE</p> <p>A —The dimension of the inner conductor relative to the outer conductor, in mm.</p> <p>B —The dimension of the dielectric relative to the outer conductor, in mm.</p>		
[8] Maximum diameter of flexible cable:	[9] Minimum bending inside diameter For static bending: For dynamic bending:	
[10] Characteristic impedance: .....Ω	[11] Frequency range: .....to.....GHz	
[12] Weight: ..... g+.....g/m	[13] Climatic category: ... /... /... .	
[14] Description		
<p>a) Connector</p> <p>Reference number of the connectors:</p> <p>Type (series), style, sex of the connectors:</p> <p>b) Cable</p> <p>Reference number, type of the cable:</p> <p>c) Marking method:</p> <p>d) Marking text:</p>		
[15] Variants:		

[16]	[17]	[18]	[19]	[20]
Inspection values, ratings or characteristics	Test method IEC 60966-1:2019	Requirement IEC 60966-2-1:2024	Value	Remarks
<b>Electrical</b>				
Reflection properties (Return loss)	8.1	No.1 in Table 2		
Uniformity of impedance	8.2	No.2 in Table 2	..... Ω ±..... Ω	Rise time of pulse <..... ps
Insertion loss	8.3	No.3 in Table 2	≤..... dB	..... to .....GHz
Insertion loss stability <sup>a</sup>	8.4	No.4 in Table 2	≤..... dB	..... to .....GHz
Propagation time <sup>a</sup>	8.5	No.5 in Table 2	..... ns ±.....ns	Frequency or rise time
Stability of electrical length <sup>a</sup>	8.6	No.6 in Table 2		..... to ..... GHz Test method 1 or method 2 for bending test
Phase difference <sup>a</sup>	8.7	No.7 in Table 2	..... ±..... °	Frequency
Insertion loss difference <sup>a</sup>	8.7	No.8 in Table 2	≤.....dB	Frequency
Phase variation with temperature <sup>a</sup>	8.8	No.9 in Table 2	≤.....ppm (parts per million)	..... to ..... K ..... to ..... GHz
Screening effectiveness <sup>a</sup>	8.9	No.10 in Table 2	≤.....dB	..... to ..... GHz
Voltage proof	8.10	No.11 in Table 2	≥.....kV	AC or DC
Insulation resistance	8.11	No.12 in Table 2	≥.....MΩ	Test voltage ..... V
Inner and outer conductor continuity	8.12	No.13 in Table 2	Inner conductor and outer conductor shall be continuous	Test voltage ≤ 36 V DC
Power rating <sup>a</sup>	8.13	No.14 in Table 2	≥..... W	Inner conductor temperature: Test frequency:
PIM <sup>a</sup>	8.14	No.15 in Table 2	≤..... dBc	Test power: Test frequency:
Corona extinction voltage <sup>a</sup>	IEC 61196-1-126	No.16 in Table 2	≥..... kV	
Shaking test <sup>a</sup>	IEC 60966-2-1:2024, Annex B	No.17 in Table 2	Insertion loss change rate: ≤.....% Return loss change rate: ≤... Phase change rate: ≤ ±..... °	Test frequency: