IEC 60966-3-4

Edition 1.0 2023-03

INTERNATIONAL STANDARD

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colour inside

Radio frequency and coaxial cable assemblies – Part 3-4: Detail specification for semi-flexible cable assemblies (Jumper) – Frequency range up to 6 GHz, Type 50-141 semi-flexible coaxial cable

Cordons coaxiaux et cordons pour fréquences radioélectriques – Partie 3-4: Spécification particulière relative aux cordons semi-flexibles (câble de liaison), plage de fréquences jusqu'à 6 GHz, câble coaxial semi flexible de type 50-141

IEC 60966-3-4:2023-03(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

Part 3-4: Detail specification for semi-flexible cable assemblies (Jumper) – Frequency range up to 6 GHz, Type 50-141 semi-flexible coaxial cable

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IEC 60966-3-4 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.

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

Draft	Report on voting
46/928/FDIS	46/932/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.

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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. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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.

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- replaced by a revised edition, or
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RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

Part 3-4: Detail specification for semi-flexible cable assemblies (Jumper) – Frequency range up to 6 GHz, Type 50-141 semi-flexible coaxial cable

1 Scope

This part of IEC 60966 is a detail specification that relates to semi-flexible cable assemblies composed of type 50-141 semi-flexible coaxial cables with polytetrafluoroethylene (PTFE) dielectric (IEC 61196-8-4) and connectors such as type 7-16 (IEC 61169-4), type 4,1-9,5 (IEC 61169-11), type S7-16 (IEC 61169-53), type 4,3-10 (IEC 61169-54). It gives subfamily detail requirements and severities which are to be applied.

These cable assemblies are mainly used in the field of mobile communication base station antenna system, terrestrial microwave communication and radar systems. The operating frequency is up to 6 000 MHz.

The qualification will be conducted in accordance with IEC 60966-3. Once one variant obtains the qualification approval, the other variant with the same cable and connection type can obtain the qualification approval by conducting tests whose results might depend on the variants.

Under capability approval, the qualification will be conducted on the relating CQCs (capability qualifying components) as defined in IEC 60966-3 and described in the CM (capability manual). Unless otherwise specified in the CM, only lot-by-lot tests from groups Ba and Eb will be conducted on delivered products, all other tests will be performed on CQCs as defined in IEC 60966-3 and described in the CM.

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 60068-2-11, *Environmental testing – Part 2-11: Tests – Test Ka: Salt mist*

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

IEC 60966-3, *Radio frequency and coaxial cable assemblies – Part 3: Sectional specification for semi-flexible coaxial cable assemblies*

IEC 60966-3-1, *Radio frequency and coaxial cable assemblies – Part 3-1: Blank detail specification for semi-flexible coaxial cable assemblies*

IEC 61169-4, *Radio-frequency connectors – Part 4: RF coaxial connectors with inner diameter of outer conductor 16 mm (0,63 in) with screw lock – Characteristic impedance 50 Ω (type 7-16)*

IEC 61169-11, *Radio-frequency connectors – Part 11: Sectional specification for RF coaxial connectors with inner diameter of outer conductor 9,5 mm with threaded coupling – characteristic impedance 50 Ω (Type 4,1-9,5)*

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IEC 61169-53, *Radio-frequency connectors – Part 53: Sectional specification for RF coaxial connectors with inner diameter of outer conductor 16 mm with screw lock – Characteristic impedance 50 Ω (Type S7-16)*

IEC 61169-54, *Radio frequency connectors – Part 54: Sectional specification for coaxial connectors with 10 mm inner diameter of outer conductor, nominal characteristic impedance 50 Ω, Series 4,3-10*

IEC 61196-8-4, *Coaxial communication cables – Part 8-4: Detail specification for 50-141 type semi-flexible cables with solid polytetrafluoroethylene (PTFE) insulation*

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

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:

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4 Detail specification

RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

Part 3-4: Detail specification for semi-flexible cable assemblies (Jumper), frequency range up to 6 GHz, Type 50-141 semi-flexible coaxial cable

[1]	**Prepared by:** IEC TC 46	**[2]**	**Document No.:** IEC 60966-3-4 **Issue:** First issue **Date:**
[3]	**Available from:** IEC	**[4]**	**Generic specification:** IEC 60966-1 **Sectional specification:** IEC 60966-3 **Blank detail specification:** IEC 60966-3-1
[5]	**Additional references:**		

Outline for semi-rigid coaxial cable assemblies

NOTE Example diagram, see Figure 1 and Figure 2, manufacturer to insert actual diagram

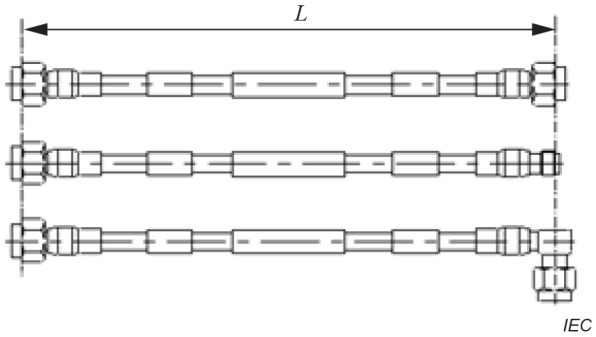

Figure 1 – Length definition of cable assemblies

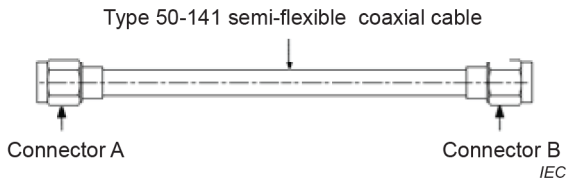

Figure 2 – Semi-flexible cable assemblies with type 50-141 semi-flexible coaxial cable

[6]	Maximum diameter of type 50-141 semi-flexible coaxial cable < 4,7 mm		
[7]	**Characteristic impedance:** 50 Ω	**[8]**	**Frequency:** up to 6 000 MHz
[9]	**Typical weight:** Cable: 50 g/m Connector: Type 7-16: 120 g Type S7-16: 25 g Type 4.1-9.5: 85 g Type 4,3-10: 56 g	**[10]**	**Minimum inside radius:** For static bending: 10 mm For dynamic bending: 40 mm
[11]	**Climatic category:** 40/70/21	**[12]**	**Applicable test group:** Ba, Eh, Eb, Ez, Ep, Ee, Et, Mn, Vv, Vc, Vt, Vf
[13]	**Connector reference number:**		IEC 61169-4 (type 7-16), IEC 61169-53 (type S7-16) IEC 61169-11 (type 4,1-9,5) IEC 61169-54 (type 4,3-10)
	Type (series), style, sex of the connector		Type 7-16, straight or right angled, male or female Type 4,1-9,5, straight or right angled, male or female Type S7-16, straight or right angled, male or female Type 4,3-10, straight or right angled, male or female
	Reference no, type of the cable		IEC 61196-8-4, IEC-50-141 or equivalent (IEC 61196-8-4).
	Marking method		Marking of the assembly shall be applied to the sheath of the cable.
	Marking text		The marking shall consist at least of the IEC cable assembly type and IEC standard number. (See Clause A.2).
[14]	**Variants:** See Clause A.1	**[15]**	Page 1 of 7 pages

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