BS EN 60966-2-7:2016

BSI Standards Publication

Radio frequency and coaxial cable assemblies

Part 2-7: Detail specification for cable assemblies for radio and TV receivers — Frequency range 0 MHz to 3 000 MHz, IEC 61169-47 connectors

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National foreword

This British Standard is the UK implementation of EN 60966-2-7:2016. It is identical to IEC 60966-2-7:2015.

The UK participation in its preparation was entrusted to Technical Committee EPL/46, Cables, wires and waveguides, radio frequency connectors and accessories for communication and signalling.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60966-2-7

January 2016

ICS 33.120.10

English Version

Radio frequency and coaxial cable assemblies - Part 2-7: Detail specification for cable assemblies for radio and TV receivers - Frequency range 0 MHz to 3 000 MHz, IEC 61169-47 connectors (IEC 60966-2-7:2015)

Ensembles de cordons coaxiaux et de cordons pour fréquences radioélectriques - Partie 2-7: Spécification particulière pour cordons de connexion de récepteurs radio ou TV - Bande de fréquences de 0 MHz à 3 000 MHz, connecteurs IEC 61169-47 (IEC 60966-2-7:2015)

Konfektionierte Koaxial- und Hochfrequenzkabel - Teil 2-7: Bauartspezifikation für konfektionierte Kabel für Ton- und Fernsehrundfunkempfänger - Frequenzbereich 0 MHz bis 3 000 MHz, Steckverbinder nach IEC 61169-47 (IEC 60966-2-7:2015)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

The text of document 46/530/FDIS, future edition 1 of IEC 60966-2-7, prepared by IEC/TC 46 "Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60966-2-7:2016.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2016-07-22
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2019-01-22

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Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60966-1	1999	Radio frequency and coaxial cable assemblies -- Part 1: Generic specification - General requirements and test methods	EN 60966-1	1999
IEC 60966-2-1	2008	Radio frequency and coaxial cable assemblies -- Part 2-1: Sectional specification for flexible coaxial cable assemblies	EN 60966-2-1	2009
IEC 60966-2-2	2003	Radio frequency and coaxial cable assemblies -- Part 2-2: Blank detail specification for flexible coaxial cable assemblies	EN 60966-2-2	2003
IEC 61169-47	-	RADIO-FREQUENCY CONNECTORS - part 47: Sectional specification for radio-frequency coaxial connectors with clamp coupling, typically for use in 75 Ω cable networks (type F-Quick)	EN 61169-47	-
IEC 61196-6	-	Coaxial communication cables - Part 6: Sectional specification for CATV drop cables	-	-
IEC 61196-7	-	Coaxial communication cables - Part 7: Sectional specification for cables for BCT cabling in accordance with ISO/IEC 15018 - Indoor drop cables for systems operating at 5 MHz - 3 000 MHz	-	-
IEC 62153-4-7	-	Metallic communication cable test methods -- Part 4-7: Electromagnetic compatibility (EMC) - Test method for measuring the transfer impedance and the screening - or coupling attenuation - Tube in tube method	EN 62153-4-7	-

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

Part 2-7: Detail specification for cable assemblies for radio and TV receivers – Frequency range 0 MHz to 3 000 MHz, IEC 61169-47 connectors

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International Standard IEC 60966-2-7 has been prepared by IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

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

FDIS	Report on voting
46/530/FDIS	46/568/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 detail specification is to be read with IEC 60966-1:1999, with IEC 60966-2-1:2008 and with IEC 60966-2-2:2003.

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

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

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This detail specification applies to flexible coaxial cables described in IEC 61196-6 and IEC 61196-7. It relates to cable assemblies for radio and TV receivers, and in particular to the cable assemblies subfamily F (IEC 61169-47).

This detail specification gives subfamily requirements and severities which shall be applied.

Under qualification approval, the qualification will be conducted in accordance with 12.2 of IEC 60966-2-1:2008 taking into account the specified variants. Only the tests whose results might depend on the variants will be repeated.

Under capability approval, the qualification will be conducted on the relating CQCs as defined in 12.3 of IEC 60966-2-1:2008 and described in the CM. 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 12.3 of IEC 60966-2-1:2008 and described in the CM.

Normative references

IEC 60966-1:1999, *Radio frequency and coaxial cable assemblies – Part 1: Generic specification – General requirements and test methods*

IEC 60966-2-1:2008, *Radio frequency and coaxial cable assemblies – Part 2-1: Sectional specification for flexible coaxial cable assemblies*

IEC 60966-2-2:2003, *Radio frequency and coaxial cable assemblies – Part 2-2: Blank detail specification for flexible coaxial cable assemblies*

IEC 61169-47, *Radio-frequency connectors – Part 47: Sectional specification for radio-frequency coaxial connectors with clamp coupling, typically for use in 75 Ω cable networks (type F-Quick)*

IEC 61196-6, *Coaxial communication cables – Part 6: Sectional specification for CATV drop cables*

IEC 61196-7, *Coaxial communication cables – Part 7: Sectional specification for cables for BCT cabling in accordance with ISO/IEC 15018 – Indoor drop cables for systems operating at 5 MHz – 3 000 MHz*

IEC 62153-4-7, *Metallic communication cable test methods – Part 4-7: Electromagnetic compatibility (EMC) – Test method for measuring the transfer impedance and the screening – or the coupling attenuation – Tube in tube method*

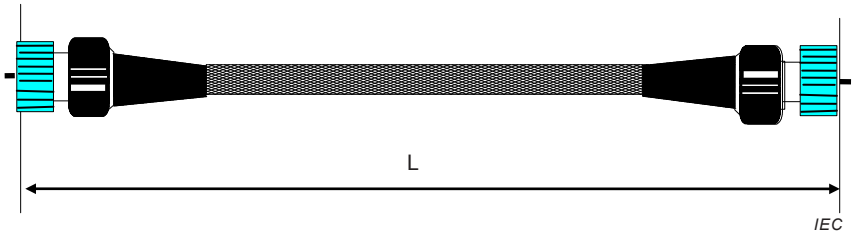
RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

Part 2-7: Detail specification for cable assemblies for radio and TV receivers – Frequency range 0 MHz to 3 000 MHz, IEC 61169-47 connectors

[1]	**Prepared by** IEC TC 46		**[2]** **Document No. 60966-2-7** Issue: First issue Date:
[3]	Available from: IEC 3 rue de Varembé Genève Suisse	**[4]**	Generic specification: IEC 60966-1 Sectional specification: IEC 60966-2-1 Blank detail specification: IEC 60966-2-2
[5]	Additional references:		

Detail specification for coaxial cable assemblies for radio and TV receivers

NOTE Example diagram, manufacturer to insert actual diagram.



[6]	Maximum diameter < 16,6 mm		
[7]	Characteristic impedance: 75 Ω	**[8]**	Frequency range: 0 MHz to 3 000 MHz
[9]	Weight: 40 g/m + 50 g (typically)	**[10]**	Minimum inside radius: for static bending 25 mm for dynamic bending 75 mm
[11]	Climatic category: 40/70/21	**[12]**	Applicable test group: Ba, Eb, Eh, Ee, Mn

[13]	A
Connector type:	IEC 61169-47 (F)
	Straight plug
Cable type:	IEC 61196-6, or equivalent [a]
Marking:	Optional
Taper sleeves: On both ends (colour optional)	

[14] Variants	**[15]** Page 1 of 3 pages

[16] Inspection values, ratings or characteristics	[17] Subclause [b]	[18] Value	[19] Remarks
Electrical			
Reflection properties	8.1	≥ 20 dB	5 MHz to 1 000 MHz
		≥ 18 dB	1 000 MHz to 2 000 MHz
		≥ 16 dB	2 000 MHz to 3 000 MHz
Insertion loss	8.3	< 0,08 dB + 0,4 dB/m	Up to 3 000 MHz
Screening effectiveness:			
Transfer impedance			
Class A	IEC 62153-4-7	< 5 mΩ/m	5 MHz to 30 MHz
Class B		< 15 mΩ/m	5 MHz to 30 MHz
Screening attenuation			
Class A	IEC 62153-4-7	> 85 dB	> 30 MHz to 1 000 MHz
		> 75 dB	> 1 000 MHz to 2 000 MHz
		> 65 dB	> 2 000 MHz to 3 000 MHz
Class B		> 75 dB	> 30 MHz to 1 000 MHz
		> 65 dB	> 1 000 MHz to 2 000 MHz
		> 55 dB	> 2 000 MHz to 3 000 MHz
Voltage proof	8.10	> 1,0 kV	50 Hz to 65 Hz peak value
Insulation resistance	8.11	> 10^5 MΩ	Test voltage 500 V
Inner conductor continuity	8.12	OK	Low voltage DC
Outer conductor continuity	8.12	≤10 mΩ	After tensile test 9.1
Mechanical			
Tensile	9.1	> 45 N	Interface OK Duration 1 min Test 8.12
Flexure	9.2	> 500 cycles	Force 5 N 20/min Test 8.9
Flexing endurance	9.3	> 20 cycles	Test 8.12 and 8.9
Cable assembly crushing	9.4	> 700 N	Test 8.3

Recommended grouping of test			Recommended severity					
[20] Group	[21] Subclause[b]	Test	[22] Periodicity	[23] IL	[24] AQL	[25] *n*	[26] c	[27] Length of specimen
Ba	7.2	Visual inspection	lot by lot	S3	4.0			
	7.3	Dimensional inspection	lot by lot	S3	4.0			
Eh	8.1	Reflection properties	lot by lot	II	1.0			
	8.3	Insertion loss	lot by lot	II	1.0			
Eb	8.10	Voltage proof	lot by lot	II	1.0			
	8.11	Insulation resistance	lot by lot	II	1.0			
	8.12	Inner and outer conductor continuity	lot by lot	III	1.0			
Ee	IEC 62153-4-7	Transfer impedance	1 year	I		1	0	
	IEC 62153-4-7	Screening attenuation	1 year	I		1	0	
Mn	9.1	Tensile	3 years			3	0	On a CQC variant(e) 1
	9.2	Flexure	3 years					l = 300 mm
	9.3	Flexing endurance	3 years					
	9.4	Cable assembly crushing	3 years					

[a] Flexible cables for CATV applications are under discussion.

[b] The relevant standard could be the generic, the sectional or both of them or the standard stated.

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