

# INTERNATIONAL STANDARD

**Radio frequency and coaxial cable assemblies –  
Part 2-5: Detail specification for cable assemblies for radio and TV receivers –  
Frequency range 0 MHz to 1 000 MHz, IEC 61169-2 connectors**



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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

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International Standard IEC 60966-2-5 has been prepared by IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

This third edition cancels and replaces the second edition, and constitutes a technical revision.

Main changes with respect to the second edition are the updating of references as well as the requirement for screening attenuation.

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

FDIS	Report on voting
46/304/FDIS	46/316/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 maintenance result 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- withdrawn,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.

A bilingual version of this publication may be issued at a later date.

## INTRODUCTION

This detail specification applies to flexible coaxial cables described in IEC 60096-2. It relates to cable assemblies for radio and TV receivers, and in particular to the cable assemblies subfamily 9,52. (IEC 61169-2).

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 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 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 and described in the CM.

### Reference documents

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*


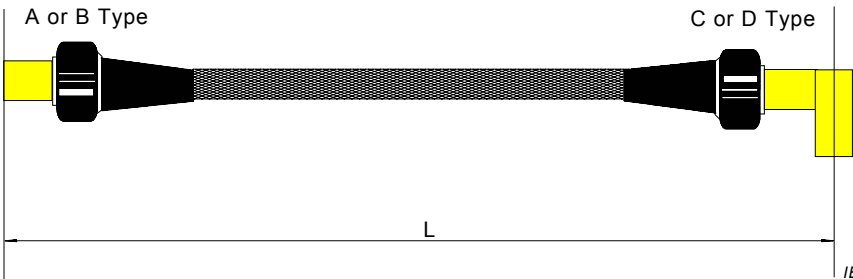
IEC 61169-2, *Radio-frequency connectors – Part 2: Sectional specification – Radio frequency coaxial connectors of type 9,52*

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

IEC 62153-4-3, *Metallic communication cable test methods – Part 4-3: Electromagnetic compatibility (EMC) – Surface transfer impedance – Triaxial method*

# RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

## Part 2-5: Detail specification for cable assemblies for radio and TV receivers – Frequency range 0 MHz to 1 000 MHz, IEC 61169-2 connectors

<b>[1] Prepared by</b> IEC TC 46				<b>[2] Document No.</b> 60966-2-5 Issue: Third Issue <b>Date:</b>	
<b>[3] Available from:</b> IEC 3 rue de Varembe Genève Suisse		<b>[4]</b> Generic specification: IEC 60966-1 Sectional specification: IEC 60966-2-1 Blank detail specification: IEC 60966-2-2			
<b>[5] Additional references:</b>					
<b>Detail specification for coaxial cable assemblies for radio and TV receivers</b>					
NOTE Example diagram, manufacturer to insert actual diagram					
<div><div><div>A or B Type</div><div>C or D Type</div></div><div>IEC 2299/08</div></div>					
<b>[6]</b> Maximum diameter < 16,6 mm					
<b>[7]</b> Characteristic impedance: 75 Ω		<b>[8]</b> Frequency range: 0 MHz to 1 000 MHz			
<b>[9]</b> Weight: 40 g/m + 50 g (typically)		<b>[10]</b> Minimum inside radius: for static bending: 25 mm for dynamic bending: 75 mm			
<b>[11]</b> Climatic category: 40/70/21		<b>[12]</b> Applicable test group: Ba, Eb, Eh, Ee, Mn			
<b>[13]</b> Connector type		A	B	C	D
		IEC 61169-2	IEC 61169-2	IEC 61169-2	IEC 61169-2
		Straight plug	Straight socket	Right angle plug	Right angle socket
Cable type		IEC 61196-6, IEC-75-yy or equivalent	IEC 61196-6, IEC-75-yy or equivalent	IEC 61196-6, IEC-75-yy or equivalent	IEC 61196-6, IEC-75-yy or equivalent
Marking		Optional	Optional	Optional	Optional
Taper sleeves: On both ends (colour optional)					
<b>[14]</b> Variants		1 A-A 2 A-B 3 A-C 4 A-D			<b>[15]</b> Page 1 of 3 pages

[16] Inspection values, ratings or characteristics	[17] Subclause <sup>a</sup>	[18] Value	[19] Remarks
<b>Electrical</b>			
Reflection properties	8.1	>23 dB >16 dB >15 dB	5 MHz to 400 MHz >400 MHz to 862 MHz >862 MHz to 1 000 MHz
Insertion loss	8.3	<0,08 dB + 0,4 dB/m	Up to 1 000 MHz
Screening effectiveness:	IEC 62153-4-3		
Transfer impedance Class A Class B		<5 mΩ/m <15 mΩ/m	5 MHz to 30 MHz 5 MHz to 30 MHz
Screening attenuation Class A Class B		8.9 >85 dB >75 dB	30 MHz to 1 000 MHz
Voltage proof	8.10	>1,0 kV	50 Hz to 65 Hz peak value
Insulation resistance	8.11	>10 <sup>5</sup> 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
<b>Mechanical</b>			
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
<sup>a</sup> The relevant standard could be the generic, the sectional or both of them.			



Recommended grouping of test			Recommended severity					
[20] Group	[21] Subclause <sup>a</sup>	Test	[22] Periodicity	[23] NC IL	[24] NQA AQL	[25] <i>n</i>	[26] <i>c</i>	[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			
	8.2	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	8.9	Screening attenuation Transfer impedance	1 year	I		1	0	
Mn	9.1 9.2 9.3 9.4	Tensile Flexure Flexing endurance Cable assembly crushing	3 years 3 years 3 years 3 years			3	0	On a CQC variant(e) 1 l = 300 mm
<sup>a</sup> The relevant standard could be the generic, the sectional or both of them.								





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