IEC 60966-2-8

Edition 1.0 2022-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Radio frequency and coaxial cable assemblies – Part 2-8: Detail specification for cable assemblies for radio and TV receivers – Frequency range up to 3 000 MHz, Screening class A++, IEC 61169-47 connectors

Cordons coaxiaux et cordons pour fréquences radioélectriques – Partie 2-8: Spécification particulière pour cordons de connexion de récepteurs radio ou TV – Plage de fréquences jusqu'à 3000 MHz, Classe d'écrantage A++, connecteurs IEC 61169-47

IEC 60966-2-8:2022-06(en-fr)

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CONTENTS

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RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

Part 2-8: Detail specification for cable assemblies for radio and TV receivers – Frequency range up to 3 000 MHz, Screening class A++, IEC 61169-47 connectors

FOREWORD

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

Draft	Report on voting
46/890/FDIS	46/896/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.

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.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under 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- withdrawn,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.

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INTRODUCTION

This part of IEC 60966 is a detail specification that applies to cable assemblies with F-Quick connectors (see IEC 61169-47) and requires quad-shield screening class A++ (see IEC 61196-6-5).

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

The qualification will be conducted in accordance with IEC 60966-2-1. Once one variant obtains qualification approval, the other variant can obtain qualification approval by conducting tests whose results could depend on the variants, for example reflection properties, insertion loss, etc.

RADIO FREQUENCY AND COAXIAL CABLE ASSEMBLIES –

Part 2-8: Detail specification for cable assemblies for radio and TV receivers – Frequency range up to 3 000 MHz, Screening class A++, IEC 61169-47 connectors

1 Scope

This part of IEC 60966 is a detail specification that applies to cable assemblies with F-Quick connectors (see IEC 61169-47) and requires quad-shield screening class A++ (see IEC 61196-6-5). This detail specification applies to the cable assemblies for radio and TV receivers.

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

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

IEC 60966-2-2, *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 61196-6-5:2020, *Coaxial communication cables – Part 6-5: Detail specification for Type A quad-shield CATV drop cables with screening class A++*

IEC 61196-1-101, *Coaxial communication cables – Part 1-101: Electrical test methods – Test for conductor d.c. resistance of cable*

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

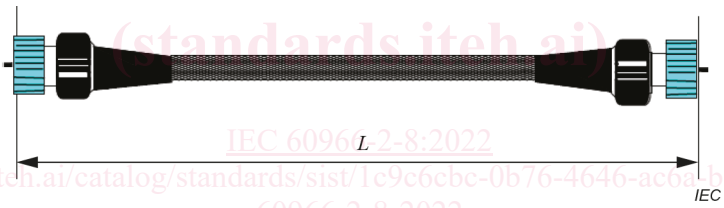
3 Terms and definitions

No terms and definitions are listed in this document.

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

4 Detail specification

[1]	**Prepared by:** IEC TC 46		**[2]** **Document No.:** IEC 60966-2-8 **Issue:** First issue **Date:**
[3]	**Available from:** IEC	**[4]**	**Generic specification:** IEC 60966-1 **Sectional specification:** IEC 60966-2-1 **Blank detail specification:** IEC 60966-2-2
[5]	**Additional references:**		
Outline for coaxial cable assemblies for radio and TV receivers			
 **[6]** Maximum diameter < 16,6 mm			
[7]	Nominal impedance: 75 Ω	**[8]**	Frequency range: up to 3 000 MHz
[9]	Typical weight: 100 g/m + 50 g	**[10]**	Climatic category: 40/70/21
[11]	Applicable test group: Ba, Eb, Eh, Ee, Mn		
[12]			
	Connector type		Type F (IEC 61169-47), Straight or right angled, male or female
	Cable type		IEC 61196-6-5, 75-X
	Marking		Marking of the assembly shall be applied to the sheath of the cable. The marking shall consist at least of the IEC assembly type name, screening class, IEC standard number and manufacturers ID (see Clause A.2)
	Taper sleeves		On both ends (colour optional)
[13]	Type name and variants: See Annex A.		

[14] Inspection values, ratings or characteristics	[15] IEC 60966-1:2019 Subclause	[16] Value	[17] Remarks
Electrical			
Reflection properties (Return loss)	8.1	1) With straight connector: ≥ 23 dB (up to 1 000 MHz) ≥ 20 dB (> 1 000 MHz to 2 000 MHz) ≥ 18 dB (> 2 000 MHz to 3 000 MHz) 2) With right angled connector: ≥ 20 dB (up 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	1) With straight connector: $\leq 0,01 \times a_f \times L + 2 \times 0,10\sqrt{f}$ 2) With right angled connector: $\leq 0,01 \times a_f \times L + 2 \times 0,15\sqrt{f}$ where a_f is the insertion loss of cable, in dB/100 m, see IEC 61196-6-5:2020, Annex B; L is the length, in m; f is the frequency, in GHz.	Up to 3 000 MHz
Screening effectiveness: Transfer impedance Screening attenuation	 IEC 62153-4-7 IEC 62153-4-7	Screening class A++: ≤ 0,9 mΩ/m (5 MHz to 30 MHz) Screening class A++: ≥ 105 dB (30 MHz to 1 000 MHz) ≥ 95 dB (> 1 000 MHz to 2 000 MHz) ≥ 85 dB (> 2 000 MHz to 3 000 MHz)	
Voltage proof	8.10	1,0 kV	AC,1 min
Insulation resistance	8.11	> 10^5 MΩ	Test voltage 500 V DC
Inner and outer conductor continuity	8.12	Inner conductor and outer conductor shall be continuous	Test voltage ≤ 36 V DC
Loop resistance	IEC 61196-1-101	1) The maximum loop resistance: ≤ 2 × 0,007 5 + $R_c \times l$ where R_c is the loop resistance of cable, in Ω/m; l is the length of cable, in m; 2) The maximum DC loop resistance shall be less than 1 Ω/m.	

[14] Inspection values, ratings or characteristics	[15] IEC 60966-1:2019 Subclause	[16] Value	[17] Remarks
Mechanical			
Tensile	9.1	1) Inner contact and insulator positions shall be in accordance with interface dimensions 2) No visual evidence of the movement of the cable relative to the connector 3) Inner conductor and outer conductor shall be continuous	Force > 45 N Duration 1 min Test 8.12
Flexure	9.2	1) No visual damage in cable assembly 2) Screening attenuation shall be ≥ 95 dB from 30 MHz to 1 000 MHz	500 cycles min Force 5 N, 20/min Test 8.9
Flexing endurance	9.3	1) No visual damage in cable assembly 2) Inner conductor and outer conductor shall be continuous 3) Screening attenuation shall be ≥ 95 dB from 30 MHz to 1 000 MHz	20 cycles min Test 8.12 and 8.9
Cable assembly crushing	9.4	1) No visual damage in cable assembly 2) Insertion loss shall meet 8.3	700 N min Test 8.3