

Generic cabling systems — Specification for the testing of balanced communication cabling in accordance with EN 50173 —

Part 2: Patch cords and work area cords

The European Standard EN 61935-2:2003 has the status of a
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National foreword

This British Standard is the official English language version of EN 61935-2:2003. It is identical with IEC 61935-2:2003.

The UK participation in its preparation was entrusted by Technical Committee EPL/46, Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories, to Subcommittee EPL/46/1, Coaxial cables, which has the responsibility to:

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- monitor related international and European developments and promulgate them in the UK.

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**Generic cabling systems –
Specification for the testing of balanced communication cabling
in accordance with EN 50173
Part 2: Patch cords and work area cords
(IEC 61935-2:2003)**

Systèmes de câblage générique –
Spécification pour les essais de câblage
de télécommunications équilibrées
selon l'EN 50173
Partie 2: Cordons de brassage et
cordons de zone de travail
(CEI 61935-2:2003)

Anwendungsneutrale
Kommunikationskabelanlagen –
Spezifikation für die Prüfung der
symmetrischen Kommunikations-
verkabelung nach EN 50173
Teil 2: Rangierschnüre und
Geräteanschlussschnüre
(IEC 61935-2:2003)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 46A/532/FDIS, future edition 1 of IEC 61935-2, prepared by SC 46A, Coaxial cables, of 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 was approved by CENELEC as EN 61935-2 on 2003-07-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2004-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-07-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61935-2:2003 was approved by CENELEC as a European Standard without any modification.

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INTRODUCTION

Modular plug cords are constructed for connecting equipment using modular connecting hardware. It is known that connecting hardware performance is subject to influence by the properties of the modular plug termination and therefore modular plug cords should be tested to determine the quality of the assembly. Moreover, the performance of modular plug cords may differ due to the performances of the involved separate components depending upon the efficiency of the manufacturing procedure. Manufacturing procedures also impact on the reliability of these cords. Therefore, the object of this standard is to provide test methods to ensure compatibility of modular plug cords to be used in cabling according to EN 50173-1. Also, it provides test methods and associated requirements to demonstrate the performance and reliability of these cords during their operational lifetime.

GENERIC CABLING SYSTEMS – SPECIFICATION FOR THE TESTING OF BALANCED COMMUNICATION CABLING IN ACCORDANCE WITH ISO/IEC 11801 –

Part 2: Patch cords and work area cords

1 Scope

This part of IEC 61935 provides methods to ensure compatibility of modular plug cords to be used in cabling according to EN 50173 and also provides test methods and associated requirements to demonstrate the performance and reliability of these cords during their operational lifetime.

2 Normative references

The following referenced documents are indispensable for the application 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 60068-2-61:1991, *Environmental testing – Part 2-61: Test methods – Test Z/ABDM: Climatic sequence*

IEC 60603-7, *Connectors for frequencies below 3 MHz for use with printed boards*

IEC 60603-7-4, *Connectors for electronic equipment – Part 7-4: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz (CAT 6, unshielded)*¹

IEC 61156, *Multicore and symmetrical pair/quad cables for digital communications*

EN 61935-1:2000 + corrigendum February 2001, *Generic cabling systems – Specification for the testing of balanced communication cabling in accordance with EN 50173 – Part 1: Installed cabling* (IEC 61935-1:2000, modified)

EN 50173-1:2002, *Information technology – Generic cabling systems – Part 1: General requirements and office areas*

3 Definitions

For the purposes of this document, the definitions in EN 61935-1 apply

4 General requirements and test configuration

4.1 Cable and connector design

The design of the cables and connectors should conform to the applicable parts of IEC 61156 and IEC 60603 respectively as referred to into the EN 50173-1.

¹ To be published.

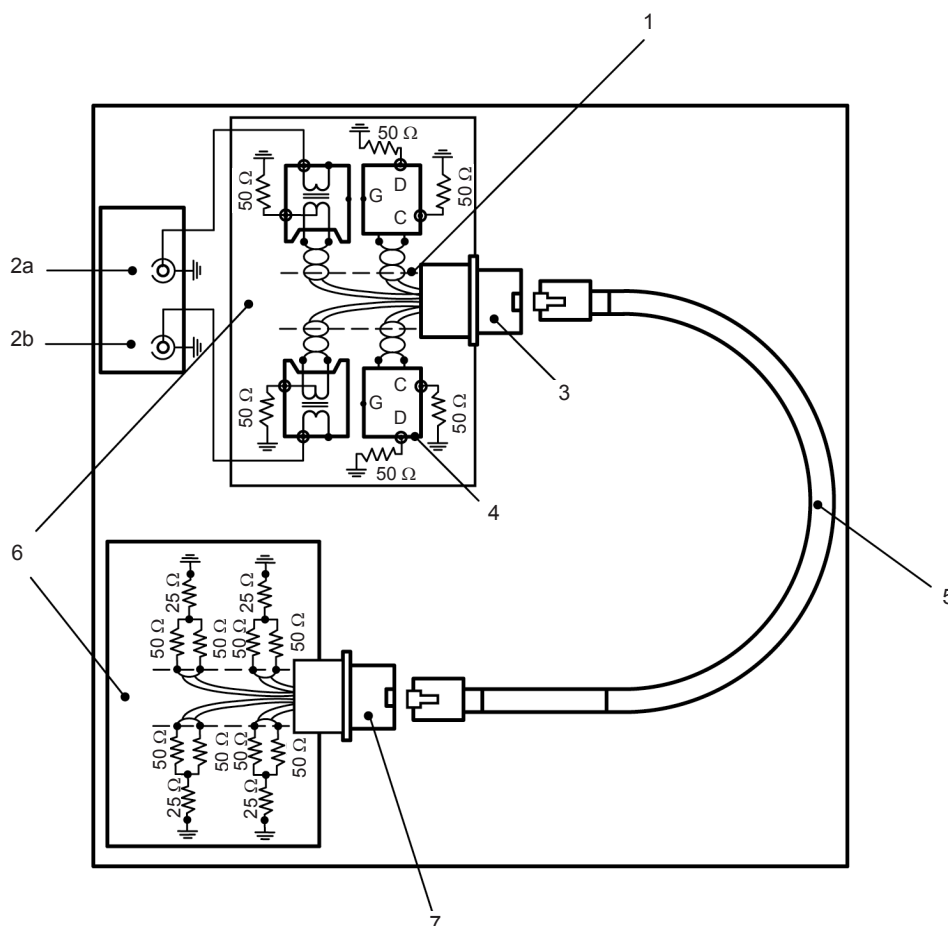
4.2 Cable and connector tests

Cables and connectors used in cable assemblies should be tested separately in accordance with IEC 61156-1 and 60603-7 respectively, even if they are not described in the IEC 61156-1 or the IEC 60603-7 series. These component tests do not need to be repeated on the cable assembly.

4.3 Test configuration and equipment

The reference measurement procedures that are described in this standard require the use of a network analyzer, r.f. transformers (baluns), twisted pair (TP) test leads and impedance matching terminations. Refer to EN 61935-1 for requirements of test equipment. The nominal impedance for the test set-up and the terminations is 100 Ω . The same tests may be used for 120 Ω and 150 Ω patch cords, but the measurement methods have not been evaluated for these nominal impedance values.

The test configuration includes terminating test heads at each end of the patch cord as shown in Figure 1. The terminals on the test heads interface with the test equipment. Refer to EN 61935-1 for detailed connection diagrams. All wire pairs shall be terminated with differential and common mode terminations per EN 61935-1. Resistive type terminations are preferred.



IEC 1248/03

Key

- | | |
|---------------------------|---------------------------|
| 1 Test interface | 5 Modular cord under test |
| 2a Network analyzer - IN | 6 Ground plane |
| 2b Network analyzer - OUT | 7 Far end test head |
| 3 Near end test head | |
| 4 Balun | |

Figure 1 – Transmission performance test configuration for patch cords