SLOVENSKI STANDARD
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Domestic and similar electronic equipment interconnection requirements: AV.link -- Part 2-1: Signal quality matching and automatic selection of source devices

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Kennwerte für die Kleinsignalverbindung zwischen elektronischen Geräten für den Heimgebrauch und ähnliche Anwendungen: AV.link -- Teil 2-1: Qualitatives Anpassen von Signalen und automatisches Auswählen von Signalquellen

Spécification des interconnexions des équipements électroniques domestiques et à usage analogue: AV.link -- Partie 2-1: Adaptation de la qualité du signal et sélection automatique des équipements sources

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Descriptors: Television systems, peritelevision devices, appliance interconnections, audiovisual materials, characteristics, electrical properties, mechanical properties, signals, inspection, measurements

English version

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Kennwerte für die Kleinsignalverbindung zwischen elektronischen Geräten für den Heimgebrauch und ähnliche Anwendungen: AV.link Teil 2-1: Qualitatives Anpassen von Signalen und automatisches Auswählen von Signalquellen

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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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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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

This European Standard was prepared by the former Technical Committee CENELEC TC 203, Electronic entertainment and educational systems for household and similar use (in July 1998 TC 203 has become part of TC 206, Consumer equipment for entertainment and information and related sub-systems).

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50157-2-1 on 1998-08-01.

This European Standard supersedes EN 50157-2-1:1996.

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) 1999-08-01

- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1999-08-01

The structure of the AV. link chain concept, the way of introducing new socket and plug connectors and new cord-sets, the use of the logo, and the recommended application information and corresponding chain and device requirements are given in EN 50157-1, "Domestic and similar electronic equipment interconnection requirements : AV. link Part 1: General."

Specific types of AV. link are described in different parts 2 of the EN 50157 series. This part 2-1 contains items related to "Signal quality matching and automatic selection of sources devices".

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Introduction

Reasons for the establishment of this Part 2-1

Part 2-1 of the AV.link defines the basic structure of the AV.link standard.

Within this part a control signal line at contact 10 is introduced to have the possibility for automatic bi-directional signal quality matching of the AV signals and automatic selection of active source devices (see clauses 7 to 10).

This part describes the signals which are changed with respect to EN 50049-1 to have the capability to fulfil automatic signal quality matching and source selection in a bi-directional way.

By introducing automatic signal quality matching the need for better means of interconnection was established, therefore in EN 50157-1 the characteristics for a new plug and socket and a related cord-set are introduced. The backwards compatibility to existing connectors in accordance with EN 50049-1 has been maintained with he introduction of the new cord-set.

Further to be able to guarantee this quality to the user, recommended system and device requirements are defined which can be found in EN 50157-1 as well.

1 Scope

This standard specifies an extension ((with the possibility to start with only two devices as a point-to-point interconnection (only a Display unit combined with a low end VTR) and than building it up)) towards a chain configuration (serial interconnection of devices) with respect to the existing CENELEC standard EN 50049-1 which specifies only the characteristics of the point-to-point interconnection system for audiovisual equipment.

This standard defines the interconnection characteristics of peritelevision devices which are configured in the chain principle.

This standard makes use of a control signal at contact 10 which gives the possibility for automatic source de-selection and quality matching of AV-signals.

This standard describes the AVC-signals in line with EN 50049-1.

This standard gives system and device oriented requirements which have to be fulfilled if use is made of the logo related to this standard to ensure the customer a certain signal quality is achieved. The AV.link logo is defined in EN 50157-1.

This standard gives the possibility to have a bi-directional interconnection of Y"/C" signals.

This standard gives the possibility to have a bi-directional control of the aspect ratio of 16:9 and 4:3.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 50049-1	Domestic and similar electronic equipment interconnection requirements: Peritelevision connector
EN 50157-1	Domestic and similar electronic equipment interconnection requirements: AV.link Part 1: General

3 The chain principle

The chain configuration is characterized by :

1) Serial interconnection of devices (see Figure 1a). The simplest chain consists of two devices (see Figure 1b). For adding an AV device, only an extra cord-set is needed.
The customer has to be informed that the number of devices in one chain is limited due to a decreased quality level of the AV-signals, if too many devices (more than 6) are connected.

2) Independent simultaneous actions on the up-stream and the down-stream path, e.g the possibility of simultaneous display of one AV device acting as a source and the recording of another AV device acting as a second source.

3) Availability of simple control signals, among others to match the signal quality level of AV devices acting as a source and AV devices acting as a destination.

4) Bi-directional interconnection of Y"/C" signals.

   Simultaneous use of RGB and Y"/C" is not possible.

5) Bi-directional interconnection of Aspect Ratio information (16:9 and 4:3).

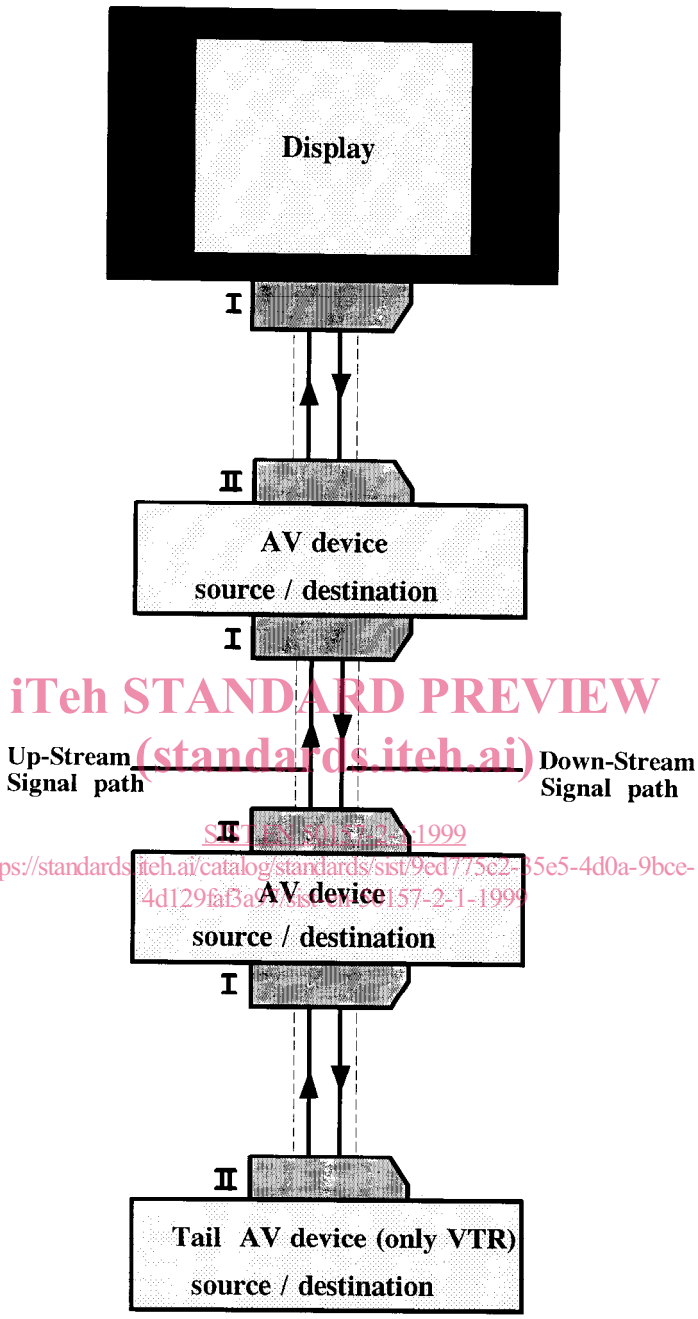
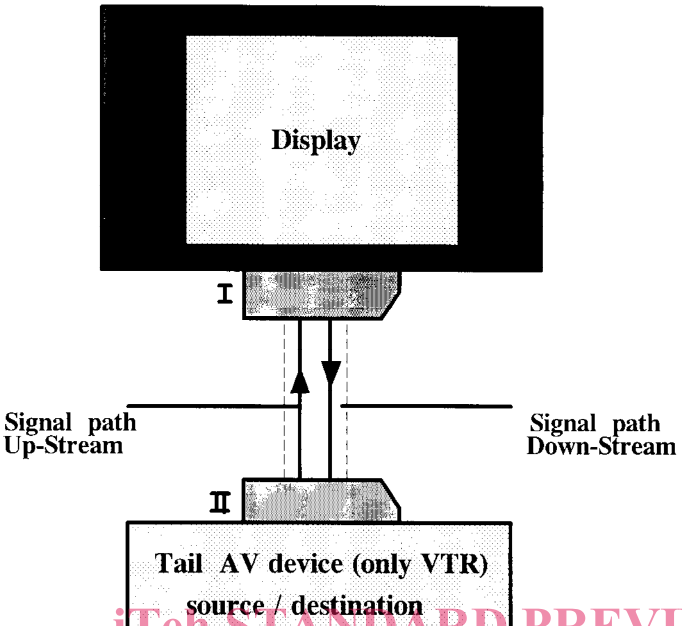


Figure 1a : Signal path interconnection chain principle



Note :
For a VTR with only one connector II (see Part 1 subclause 5.3) it is allowed to leave out this connector and connect the cable (with one plug) itself to the device. The signals on the plug have to correspond to connector II.
If manufacturing in this way care has to be taken that the device inclusive the fixed cable has to fulfil the standard to be able to use the logo.

Figure 1b : Signal path interconnection - Chain principle, minimum configuration

6) Backwards compatibility with a type of equipment which fulfils EN 50049-1 with respect to Audio, CVBS, RGB display signals and Function Switching (slow switching) Voltage with an eventual superimposed remote control signal.

7) Backwards compatibility with a type of equipment which fulfils EN 50049-1 with respect to the C"-signal (of Y"/C") on contact 15 and the Aspect Ratio control signal on contact 8.

8) Easy interconnection between any of two devices in the chain, e.g. to copy from VCR 1 to VCR 2.

9) The possibility to connect a Display Unit which fulfils EN 50049-1 at the top of the chain and a type of equipment (AV device) which fulfils EN 50049-1 at the tail of the chain.

In this case the automatic control functions do not work.

In the introduction phase of products in accordance with the EN 50157-1 it is allowed to start with connectors and the cord-set marked type U in accordance with EN 50049-1. Backwards compatibility in the chain with AV devices which fulfils EN 50049-1 is only possible with improved quality cables. In future the use of cables in accordance with EN 50049-1 will be prevented by mechanical means (under consideration).

10) The possibility to connect at the tail of the chain one "tail AV device", which is provided with the control signal but only has one connector and no loop-through switching.

It only is possible to connect one "EN 50049-1" or "tail AV.link" AV device to the bottom of the chain.

4 Field of application

4.1 This standard applies to the connector sockets type I and type II, mounted on the Display Unit (only connecor type I) and on the AV devices connected to the chain-type audiovisual system. It includes the designation of contacts, the type of signals and the electrical matching values.

4.2 This standard applies to the plugs fitted to both ends of the cord-set.

4.3 It covers the interconnection cord-set itself (type of conductors, wiring). This cord-set incorporates all the interconnections covered by this standard.

The applied cord-set shall meet the performance requirements specified in EN 50157-1.

4.4 Permanent interconnection of all devices connected to the chain is ensured by means of looping-through of the signals.

4.5 Application of this standard is mandatory for devices carrying the chain label (logo) specified in EN 50157-1.

5 Rules of conformity to the chain

AV equipment to be connected to the chain which fulfils this standard shall be in accordance with the following rules of conformity :

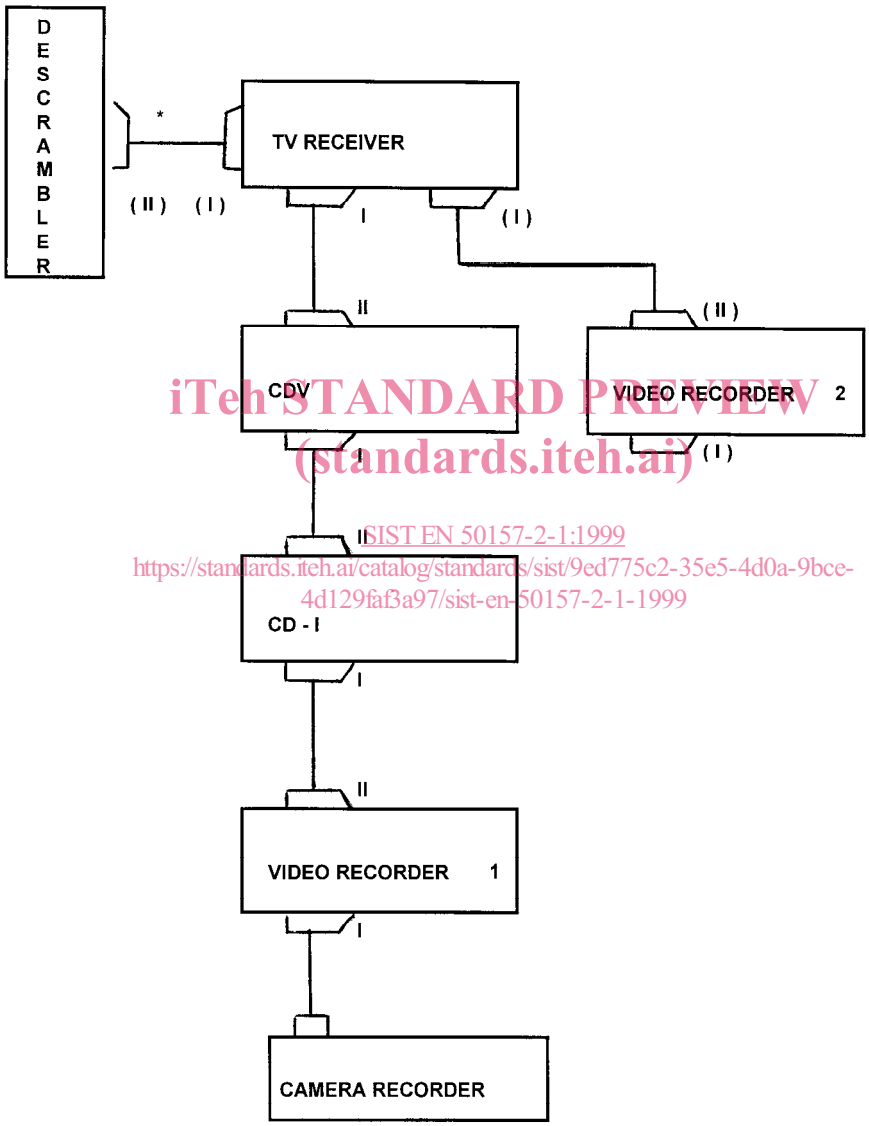
5.1 Each AV device shall be provided with one of each two differently wired sockets (see Figure 1b), defined in EN 50157-1 :

- Connector type II: To connect devices in the direction towards the display (upwards).
- Connector type I : To connect devices in the direction away from the display (downwards).

For a Display Unit a connector type II is not allowed.

More than one connectors type I are allowed (see figure 2) which gives the possibility for independent multi chain configurations. If the audio signals have to be connected to an external audio amplifier, this can be executed by means of a separate standardised connection.

AV devices with only one connector, according to either EN 50049-1 or the connector type II of this standard, can be connected to the chain at the tail position. Only with a connector type II can the functions related to the control signal be fulfilled.



Note :* = Descrambler connection not forming a part of the chain.

Figure 2 : Example of multi chain configuration

A Display unit (TV receiver) can have more PERITELEVISION connectors either according to EN 50049-1 or to the connector type I of this standard. In this case the device connected to the other connectors will not be a part of the chain which is connected to one of the connectors type I.

It is not allowed to interconnect contact 10 of each connector type I with a wire only.