SLOVENSKI STANDARD
SIST EN 50157-1:1999

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Domestic and similar electronic equipment interconnection requirements: AV.link -- Part 1: General

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Kennwerte für die Kleinsignalverbindung zwischen elektronischen Geräten für den Heimgebrauch und ähnliche Anwendungen: AV.link -- Teil 1: Allgemeines

Spécification des interconnexions des équipements électroniques domestiques et à usage analogue: AV.link -- Partie 1: Généralités

Ta slovenski standard je istoveten z: **EN 50157-1:1998**

ICS:

33.160.40 Video sistemi Video systems

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EUROPEAN STANDARD

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EN 50157-1

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

English version

Domestic and similar electronic equipment interconnection requirements: AV.link Part 1: General

Spécification des interconnexions des équipements électroniques domestiques et à usage analogue: AV.link
Partie 1: Généralités

Kennwerte für die Kleinsignalverbindung zwischen elektronischen Geräten für den Heimgebrauch und ähnliche Anwendungen: AV. link
Teil 1: Allgemeines

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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 Technical Committee CENELEC TC 203, Electronic entertainment and educational systems for household and similar use.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50157-1 on 1996-07-02.

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- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1999-01-01

This part 1 of EN 50157 includes :

- the general standardization document structure of the AV.link chain concept,
- the way of introduction 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.

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Introduction

Reasons for the establishment of this standard

Customer behaviour with respect to buying Audio Video (AV) equipment is such that devices are purchased from different manufacturers, in different combinations, at different moments within a long time period.
This requires an interconnection system that is extendable and suited for the interconnection of existing types as well as new types of equipment (device).

The present interconnection system according to EN 50049-1 specifies possible point-to-point connections between two AV (Audio-Video) devices or between an AV device and the Display Unit (TV receiver or monitor).
When more than two types of equipment had to be connected, a star interconnection configuration had to be created by means of a switch-box with as many connectors as the number of devices to be connected.

The switch-box can be a separate unit or a built-in function in one of the devices of the star configuration.
In practice this switch-box is mostly part of the TV receiver.
However, to keep the cost-price of the TV receiver at an affordable level, the number of peritel connectors is restricted and not all of the extra connectors are completely wired.
This makes the existing applied star configuration conflicting with the requirement of extendability and flexibility.

To provide better means for the customer to add AV devices to an audiovisual system and to be more user-friendly with respect to the control of the system, a chain configuration with simple automatic control is specified and described in this standard.
The AV.link logo identifies the type of devices and cord-sets fulfilling this standard.

This standard is complementary to EN 50049-1.
Products complying with this standard are backwards compatible with products that comply with EN 50049-1. The compatibility with respect to the devices in accordance with EN 50049-1 is based on the use of the cord-set defined in this standard and the matching values based on the signals described in EN 50049-1. The main difference of the signals is the use of Y"/C" signals in a bi-directional way and the possibility to control the signal quality in a bi-directional way also.
To overcome interconnection problems and to guarantee a minimum signal quality if more devices are interconnected, system and device requirements are recommended as well as a new cord-set and corresponding connectors.

1 Scope

1.1 Standardisation structure of the AV.link.

Within the AV.link chain concept (see EN 50157-2-1) a control signal line at contact 10 of the PERITELEVISION connector is defined.

Within this control signal line a bit-structure is defined introducing different modes of operation which introduces the following operation capabilities :

- basic capability for automatic selection of devices and automatic signal quality matching with respect to the delivered and received signals (such as e.g. R, G, B; Y"/C" and CVBS whereby R,G,B has the highest picture quality, Y"/C" is the next one and CVBS is the lowest), this part, described in EN 50157-2-1, is the base for the interconnection principle (chain concept) and is mandatory for all products implementing the parts of this standard.

- basic AV-system oriented commands which are meant for easy use of an AV-system with respect to the interconnection and inter-operability (EN 50157-2-2),

- system applications (EN 50157-2-3)

- future extensions.

Depending on the “start sequence” bit structure the following related standards are defined or under consideration :

Table 1 : Structure of the standard

Mode	“start sequence” bit structure	Related standardisation document	Description of the document	Implementation validity
		EN 50157-1	AV.link Part 1, 'General'	
1	"0"	EN 50157-2-1	AV.link Part 2-1, 'Signal quality matching and automatic selection of source devices'	Mandatory
2	"10"	EN 50157-2-2	AV.link Part 2-2, 'Basic system oriented commands'	Optional
3	"110"	EN 50157-2-3	AV.link Part 2-3, 'System oriented application'	Optional
4	"1110"	EN 50157-2-4	AV.link Part 2-4, For future extension.	To be defined
..			etc.	
..				
8	"11111110"	EN 50157-2-8	AV.link Part 2-8 For future extension	To be defined

NOTE : The bit-format is fixed, but the number of bits depends on the 'Mode'.

1.2 Rules for the implementation of the parts of EN 50157 with respect to the use of :

a) connectors,
b) cord-sets,
c) recommended requirements,
d) methods of measurement.

This Part 1 of EN 50157 includes the clauses with respect to

- the 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.

Introduction of products based on the implementation of the related parts of EN 50157 in the market needs a realistic and fare solution towards the use and introduction of the new proposed, socket, plug connectors, cord-sets, recommended requirements and methods of measurements.

The situation today within Consumer Electronic manufacturing does not allow investments based on new proposed standards which introduces higher performances, none backwards compatible connectors and their related cord-sets.
Therefore a certain introduction period is needed to establish whether these proposed standards will be generally accepted by the market and manufacturers.

Although standards EN 50157-2-X are based on the new proposed socket and plug connectors, cord-sets and recommended requirements, a transition period is allowed whereby products implementing part(s) of EN 50157 may start with the use of existing :

- socket and plug connectors in accordance with EN 50049-1,
- cord-sets marked type U as described in EN 50049-1,
- devices which, in the loop-through situation, introduce as low as possible performance degradation if products are connected in accordance with EN 50157-1 and EN 50157-2-X. (This loop-through facility is only needed within 'in between' products which need two connectors Type I and Type II as explained in EN 50157-2-1, subclause 5.1)

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 50157-2-1 Domestic and similar electronic equipment interconnection requirements: AV.link -- Part 2-1: Signal quality matching and automatic selection of source devices

EN 50157-2-2[1)] Part 2-2: Basic system oriented commands

EN 50157-2-3[1)] Part 2-3: System oriented application

IEC 60268-1 Sound system equipment -- Part 1: General
(HD 483.1 S2:1989 = IEC 60268-1:1985 + A1:1988)

IEC 60268-3 Sound system equipment -- Part 3: Amplifiers
(HD 483.3 S2:1992 = IEC 60268-3:1988 + A1:1990 + A2:1991)

IEC 60807-9 Rectangular connectors for frequencies below 3 MHz -- Part 9: Detail specification for a range of peritelevision connectors

3 Characteristics of the interconnections

See table 1 of EN 50049-1 and clause 6 of EN 50157-2-1.

4 Description of the socket and plug connector

4.1 Basic description

See EN 50049-1.

4.2 Mechanical characteristics

See EN 50049-1, except as follows:

4.2.1 *Socket*

The socket is basically described in EN 50049-1. The AV.link socket is provided with a locking element which together with the mechanical locking mechanism of the plug forms a closed locking of both plug and socket.

The AV.link socket is also provided with a blocking element which together with the slot arrangement in the shield of the plug forms a special solution to fulfil this standard.

4.2.2 *Plug*

The plug is basically described in EN 50049-1. The shield of the AV.link plug is provided with a slot arrangement which fits onto the blocking element of the socket to be exclusive for this standard.

The AV.link plug is provided with a mechanical locking mechanism to prevent the plug from being loosened from the socket.

1) in preparation

Having the slot the shield of the plug and fulfilling this standard allows manufacturers to make use of a logo which has to be requested by the EACEM or representative organization within their country.

4.3 Mechanical requirements

See IEC 60807-9.

Insertion force for the locking mechanism : < 10 N

Extraction force perpendicular to the interface plane and with the locking mechanism active : 50 N < Force < (tbf) N

CABLES WHICH COMPLY WITH TYPE U DESCRIBED IN EN 50049-1 DO NOT FIT INTO THE CONNECTORS ACCORDING TO THIS STANDARD (but see 1.2).

NEW CABLES ACCORDING TO THIS STANDARD FIT INTO THE CONNECTORS ACCORDING TO EN 50049-1.

4.4 Compatibility matrix

yes ≡ fit

no ≡ don't fit

Table 2 : Connector compatibility

		Connector (female)		
		EN 50049-1 (non AV.link)	AV.link connector II	AV.link connector I
Plug (male) cord-set	EN 50049-1 (non AV.link)	yes	no [1)]	no [1)]
	AV.link side II	yes	yes	yes
	AV.link side I	yes	yes	yes
1) See also 1.2.				

5 Cord-sets

5.1 Nature of the conductors

5.1.1 The conductors conveying video signals or equivalent, namely those connected to the pairs of contacts (19, 17), (20, 18) (15, 13), (11, 9), (7, 5), (16, 14), (12, 21), are of the coaxial type 75 Ohm (characteristic impedance).

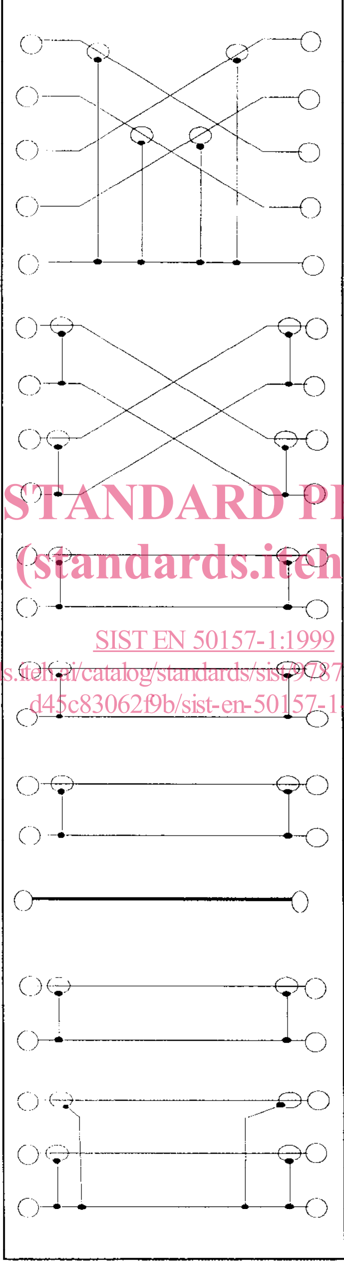
5.1.2 The conductors conveying audio signals each are of the screened cable type for audio frequencies, namely those connected to the pairs of contacts (3, 4), (1, 4), (6, 4), (2, 4).

5.1.3 The digital data for the control signal line (contacts 10, 21) may be conveyed by a screened cable type as for the audio signals or for the video signals.

5.1.4 The connection corresponding to contact 8 is by means of a single insulated wire.

5.2 Table of interconnections

UP-STREAM (towards Display unit) ➔
🡐 DOWN STREAM (away from Display unit)

CONNECTOR II		CORD-SET		CONNECTOR I
AUDIO A up (out)	3		3	AUDIO A down (out)
AUDIO B up (out)	1		1	AUDIO B down (out)
AUDIO A down (in)	6		6	AUDIO A up (in)
AUDIO B down (in)	2		2	AUDIO B up (in)
AUDIO COMMON return	4		4	AUDIO COMMON return
CVBS up or (out) Y" up (out)	19		19	CVBS down or (out) Y" down (out)
Return contact 19	17		17	Return contact 19
CVBS down or (in) Y" down (in)	20		20	CVBS up or (in) Y" up (in)
Return contact 20	18		18	Return contact 20
RED up or (out) C" up (out)	15		15	RED up or (in) C" up (in)
Return contact 15	13		13	Return contact 15
GREEN up (out)	11		11	GREEN up (in)
Return contact 11	9		9	Return contact 11
BLUE up or (out) C" down (in)	7		7	BLUE up or (in) C" down (out)
Return contact 7	5		5	Return contact 7
STATUS and (out) ASPECT RATIO up	8		8	STATUS and (in) ASPECT RATIO up
BLANKING up (out)	16		16	BLANKING up (in)
Return contact 16	14		14	Return contact 16
CONTROL (bi-directional)	10		10	CONTROL (bi-directional)
FUTURE USE (reserved)	12		12	FUTURE USE (reserved)
COMMON RETURN of contact 8, 10 and 12	21		21	COMMON RETURN of contact 8, 10 and 12