



SLOVENSKI STANDARD

SIST EN 50049-1:1999

01-april-1999

Domestic and similar electronic equipment interconnection requirements: Peritelevision connector

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Kennwerte für die Kleinsignalverbindung zwischen elektronischen Geräten für den
Heimgebrauch und ähnliche Anwendungen: Peritelevision Verbindung

Prescriptions d'interconnexion des appareils électroniques grand public et analogues:
Connecteur de péritélévision

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Ta slovenski standard je istoveten z: EN 50049-1:1997

ICS:

31.220.10	Vtiči in vtičnice, konektorji	Plug-and-socket devices. Connectors
33.160.40	Video sistemi	Video systems

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en

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EUROPEAN STANDARD

EN 50049-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 1997

UDC 621.397.7:621.316.541:621.315.2/.3
ICS 33.160.40

Supersedes EN 50049-1:1989 and its amendments

Descriptors: Communication equipment, electronic equipment, household electrical appliance, television set, appliances interconnection, data terminal equipment, peritelevision devices, designation, electrical characteristics, mechanical characteristics, dimensions, sockets, electrical connector, screen (display), peritelevision system, videography

English version

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analogues: Connecteur de péritélévision

Kennwerte für die Kleinsignalverbindung
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Verbindung

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This European Standard was approved by CENELEC on 1997-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 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 50049-1 on 1997-07-01.

This European Standard supersedes EN 50049-1:1989, which was approved by CENELEC on 1988-09-13.

Since this date the evolution of services is such that several amendments were approved. Also the application implies the introduction in the European Standard of some general rules independent of the interconnection architecture. Due to this a new edition has become necessary.

Significant technical differences are:

- a) addition : contents of amendments A1, A2, A3, A4
- b) deletion : connector characteristics which are contained in IEC 60807-9.
- c) addition : clause 6 Essential/optional signal types for various applications

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) 1998-06-01
- latest date by which national standards conflicting with the EN have to be withdrawn (dow) 1998-06-01

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1 Introduction

1.1 Object

This standard defines the interconnection characteristics of peritelevision devices, both between themselves and with television receivers (monochrome or colour).

The interconnections covered by this standard are at baseband (video and audio) or digital signals.

For the purpose of defining conformance, this standard specifies the types and related groups of signals, composite video, audio, primary colour and control that shall be present on the connectors. The levels and impedances together with the tolerances on these values are also specified.

The manner in which the signals on the connector are processed within the products incorporating the connectors and the presentation of the results of such processing to the user is outside the scope of this standard. These details depend upon the system involved, e.g. PAL or SECAM and the specification of the product.

This standard lays down collectively the electrical matching characteristics (type of signals, voltage and impedance values), dimensional, mechanical and electrical characteristics of the connectors, type and wiring of interconnection cordsets.

Attention is drawn to the fact that the interconnection covered by this standard shall in any circumstances meet the safety requirements specified in EN 60065:1993 and the electromagnetic compatibility requirements specified in the appropriate publications.

1.2 Field of application

This standard applies to the connector socket mounted on various devices that are components of domestic audio-visual systems, and includes the designation of contacts, the type of interchanged signals and the matching values of voltage and impedance. This standard does not apply to equipment so small that its size is not compatible with the dimensions of the socket.

It applies also to the plug fitted to the end of interconnection cordsets.

It covers the interconnection cordsets themselves (type of conductors, wiring).

Permanent connection of several pieces of equipment which may be used simultaneously or otherwise is ensured :

- either by fitting each piece of equipment with a suitable number of connectors ;
- or by a single connector on each piece of equipment linked to a central interconnection and switching device.

The user shall be informed about the possible applications that are provided by a device.

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 (including amendments).

- EN 60065 Safety requirements for mains operated electronic and related apparatus for household and similar general use (IEC 60065, modified)
- IEC 60268-15 Sound system equipment -- Part 15: Preferred matching values for the interconnection of sound system components (harmonized as HD 483.15 S4:1992)
- IEC 60608 Interconnections between video-tape recorders and television receivers for 50 Hz-625 lines
- NOTE: IEC 60608 is restricted to a specific system, whereas this standard relates to an interconnection system intended to cover a substantially wider scope. Thus in particular, the interconnection as defined in IEC 60608 does not provide for simultaneous conveyance, on separate pins, of receiver input and output (audio and video) signals in order to be processed by a peripheral device.
- IEC 60807-9 Rectangular connectors for frequencies below 3 MHz / Part 9: Detail specification for a range of peritelevision connectors
(standards.iteh.ai)
- IEC 60933-1 21 pin-connector for video systems (Application No. 1 and Amendment 1)
SIST EN 50049-1:1999
- Recommendation ITU-R draft (11 A/XE "Enhanced wide-screen PAL TV transmission system").
<https://standards.iteh.ai/catalog/standards/sist/c356768-e797-42a8-9219-a1464a1c7117/sist-en-50049-1-1999>

3 Characteristics of the interconnections (see table 1)

General remarks :

All input and output signals may be present simultaneously.

All input and output signals are defined and measured taking into account the appropriate CCIR and IEC Publications.

Table 1

Signal designation	Matching value	contact number	Test conditions and comments
audio output A 1) mono stereo channel left independent channel A	300 Ω \leq impedance \leq 1 k Ω 2) Voltage (r.m.s. value) nominal 0,5 V* \pm 3 dB maximum 5,65 V _{pp}	3	Load impedance for compliance testing: 10 k Ω * for a modulation factor by a sinusoidal signal at 1 kHz at the transmitter of 54 % in A.M and F.M. type of modulation with a vision carrier level of 70 dB (μ V). for a level at the transmitter corresponding in digital system to: -11,2 dB FS for the NICAM B G and L -15,8 dB FS for the NICAM I -11,2 dB FS for the D2 MAC Note: FS= Full Scale if a MAC coded signal is present at pin 19 the connected equipment shall ignore the signal at this contact
AUDIO output B 1) mono stereo channel right independent channel B		1	
AUDIO input A 1) mono stereo channel left independent channel A	Impedance \geq 10 k Ω 2) Electromotive force (r.m.s. value) nominal 0,5 V minimum 0,2 V * maximum 5,65 V _{pp}	6	Source impedance for compliance testing : 1 k Ω * for a nominal output value according to the equipment specifications
AUDIO input B 1) mono stereo channel right independent channel B		2	
AUDIO common return		4	

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Table 1 (continuation)

Signal designation	Matching value	contact number	Test conditions and comments
VIDEO output	Impedance: 75Ω 4) Composite video signal or Y": Difference between white level and synchronizing level: $1 V (\pm 3 \text{ dB})$ 3)	19	Positive going Video Y" signal is the blanked luminance signal plus the synchronization signal plus data signals (when present). In case of satellite reception the residual energy dispersal signal component shall be $\leq 17 \text{ mV p.t.p.}$
	When the signal on this terminal is exclusively a synchronization signal, the peak to peak voltage is $0,3 V (-3 \text{ dB}, +10 \text{ dB})$ MAC signal: The amplitude between black level and white level is $1 V (\pm 3 \text{ dB})$ and if the superimposed energy dispersal is present, it can cause an additional amplitude of maximum $0,3 V_{pp}$		Negative going signal If the equipment is designed to deliver a MAC coded signal, the MAC signal at this contact shall be free of linear pre-emphasis in case of satellite reception, but it may or may not contain the energy dispersal signal.
VIDEO output return	In both cases: Superimposed d.c. component within $0 V$ and $+ 2 V$	17	

Table 1 (continuation)

Signal designation	Matching value	contact number	Test conditions and comments
VIDEO input	<p>Impedance: 75 Ω 4)</p> <p><u>Composite video signal or Y_c</u>: Difference between white level and synchronizing level: 1 V (± 3 dB) 3)</p> <p>When the signal on this terminal is exclusively a synchronization signal, the peak to peak voltage is 0,3 V (-3 dB, +10 dB)</p> <p><u>MAC signal</u>: The amplitude between black level and white level is 1 V (± 3 dB) and if the superimposed energy dispersal is present, it can cause an amplitude contribution of maximum 0,3 V</p> <p><i>In both cases:</i> Superimposed d. c. component within 0 V and + 2 V</p>	20	<p>Positive going Video</p> <p>Y_c signal is the blanked luminance signal plus the synchronization signal plus data signals (when present).</p> <p>In case of satellite reception the residual energy dispersal signal component shall be ≤ 17 mV. p.t.p.</p> <p>Negative going signal</p> <p>If the equipment is designed to receive a MAC coded signal, the MAC signal at this contact shall be free of linear pre-emphasis in case of satellite reception, but it may or may not contain the energy dispersal signal.</p>
VIDEO input return FUNCTION SWITCHING 6) (slow switching) Input or output	<p>Level 0: 0 V to + 2 V</p> <p>Level 1A*: +4,5 V to +7 V</p> <p>Level 1B: +9,5 V to +12 V</p> <p>input resistance ≤ 10 kΩ</p> <p>input capacitance ≤ 2 nF</p> <p>Output source resistance when contact 8 acts as an output: 300Ω \leq output source resistance ≤ 1 kΩ</p>	18 8	<p>Load resistance for compliance testing: 10 kΩ</p> <p>For a television receiver, the control voltage is an input signal delivered by the peripheral equipment.</p> <p>Level 0: television broadcast reproduction</p> <p>Level 1B: peritelevision reproduction</p> <p>Level 1A: reproduction of an external source with aspect ratio 16:9, if the equipment is designed to display in this aspect ratio.</p> <p>Note : the maximum rise time of switching from 0 to 1B shall not exceed 5 ms.</p>

Table 1 (continuation)

Signal designation	Matching value	contact number	Test conditions and comments
RED primary colour signal input or output or (Optional) C" signal ⁹⁾ input or output	Impedance: 75 Ω ⁴⁾ Difference between the peak value and blanking level: 0,7 V ($\pm 0,1$ V) ⁵⁾⁸⁾ Superimposed d.c. component within 0 V and +2 V standard chrominance level ± 3 dB at 1V _{pp} of Y" input signal (see CCIR Report 624-3) modulated Helper signal with 0,3V _{pp} amplitude	15	Positive going signal The C" signal is the chrominance signal plus the PAL burst. In case of PAL + transmission C" signal includes the Helper The complementary application of C" signal on pin 15 can use the same contact as RED, with appropriate switching.
RED return		13	
GREEN primary colour signal input or output	Impedance: 75 Ω ⁴⁾ Difference between the peak value and blanking level: 0,7 V ($\pm 0,1$ V) ⁵⁾⁸⁾ Super imposed d.c. component within 0 V and +2 V	11	Positive going signal
GREEN return		9	
BLUE primary colour signal input or output or (Optional) C"-signal ⁹⁾ (only used in case of "down stream", coming from TV in a chain concept) input or output	Impedance: 75 Ω ⁴⁾ Difference between the peak value and blanking level: 0,7 V ($\pm 0,1$ V) ⁵⁾⁸⁾ Super imposed d.c. component within 0 V and +2 V Standard chrominance level ± 3 dB at 1 V _{pp} of Y" input signal (see CCIR report 624-3) modulated helper signal with 0,3 V _{pp} amplitude.	7	Positive going signal The C" signal is the chrominance signal plus the PAL burst. In case of PAL + transmission C" signal includes the Helper. The complementary application of C" signal on pin 7 can use the same contact as BLUE, with appropriate switching.
BLUE return		5	

Table 1 (continuation)

Signal designation	Matching value	contact number	Test conditions and comments
BLANKING 7) (Rapid switching) Input or output	0 V to 0,4 V logical "0" +1 V to +3 V logical "1" Impedance : 75 Ω	16	Bandwidth and time delay shall be matched to those of the RGB primary colour signals
BLANKING return under consideration	No connection permitted (future use under consideration)	14	
Control signal line bi-directional (Optional)*	All measurements are with a power supply of + 5,0 V unless otherwise stated, the control signal is a pulse shaped burst with a burst time of maximum 500 ms. The time between the first falling edge and the next falling edge within the pulse-shaped burst is maximum 10 ms. The time gap between two pulse-shaped bursts is minimum 15 ms 1 Maximum voltage slew rate measured with external circuit both open circuit and also with external test circuit connected to contact 10 consisting of a 3900 $\Omega \pm 5\%$ resistor connected to + 5,0 V power supply : Maximum slope $dv/dt = 0,2 \text{ V}/\mu\text{s}$. 2 Voltage of the control signal with the device in logical "0" state and external test circuit connected to contact 10 consisting of a resistor of worst case value 3900 ohms - 5 % connected to + 5,5 V power supply : Maximum voltage = 600 mV	12 10	* Optional means : if the signal is not in accordance with the listed values, then pin 10 shall not be connected