



**SLOVENSKI STANDARD**  
**SIST R203-001:1999**

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**Interface for HDTV analogue signals**

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**Ta slovenski standard je istoveten z: R203-001:1996**

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CENELEC

R203-001

REPORT

January 1996

English version

## Interface for HDTV analogue signals

This CENELEC Report has been prepared by the Technical Committee CENELEC TC 203, Electronic entertainment and educational systems for household and similar use. It was approved by CENELEC on 1995-09-20.

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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 Technical report has been prepared by the Technical Committee CENELEC TC 203, Electronic entertainment and educational systems for household and similar use. It was approved for publication by the CENELEC Technical Board on 1995-09-20.

The following is a Report for an interface suitable for carrying 1250 line reconstituted HDTV analogue signals corresponding to the output from EUREKA 95 HDMAC Standard decoder or other HDTV analogue type or equipment requiring an analogue interface.

The purpose of this Report is to permit the connection of a consumer HDTV analogue output (e.g. from a HDTV decoder) to a High definition Monitor/receiver with a 16:9 aspect ratio screen size.

This analogue interface is based on the PERITELEVISION socket and plug connector as standardised within CENELEC EN 50049-1 (December 1989).

The Report retains the standard contact assignments for baseband audio and composite video inputs and outputs and RGB signals together with a Functional Switching as defined in EN 50049-1 (December 1989). The main difference to EN 50049-1 (December 1989) is the use of separate horizontal and vertical synchronization signals capable to reproduce 1250 line based RGB signals. The horizontal synchronization signals is still transported via contact 16 while the vertical synchronization signal is assigned to contact 12 which today is not permitted to connect.

Due to the identical contact assignment and the use of the same socket and plug connectors great care has been taken to ensure that if a 1250 line source is connected to a 625 line displaying equipment no problems shall occur. This assurance is reached by the following measures :

- a) In the Peritelevision standard EN 50049-1 (December 1989) the RGB synchronization signal is always provided on either the video input or output contacts. In this Report the video input and output signals are only 625 line based signals and therefore picture synchronization will occur as today. <https://standards.iteh.ai/catalog/standards/sist/1f65ecd9-e12d-4273-9cd6-bd2b9905225d/sist-r203-001-1999>
- b) The 1250 line RGB signals carries only those video information which is indistinguishable from 625 line RGB signals of 625 line based receivers.
- c) In EN 50049-1 (December 1989) the Fast Blanking signal on contact 16 provides either external RGB insertion or full screen video rate switching between external RGB and the TV internal picture source.  
This Report contact 16 is used for Horizontal Synchronization only.  
The synchronization levels have been defined such that compatibility with the present Fast Blanking input is assured and therefore the 1250 line Horizontal Synchronization signal acts as a fast blanking signal.
- d) In EN 50049-1 (December 1989) contact 12 is defined as "No connection permitted". In this Report contact 12 is used as a Vertical Synchronization signal.

The availability of a Vertical Synchronization signal on contact 12 can be used to distinguish between EN 50049-1 based signals and 1250 line based HDTV analogue signals.



1 Introduction1.1 Object

- 1.1.1 *This Report defines the interconnection characteristics of 1250 lines based analogue High Definition devices incorporating an analogue interface between themselves and with 16 : 9 aspect ratio wide-screen television receivers capable of displaying analogue High Definition sources.*
- 1.1.2 This Report lays down collectively the electrical matching characteristics (type of signals, voltage and matching values), dimensional, mechanical and electrical characteristics of the connectors, type and wiring of interconnecting cord-sets.
- 1.1.3 Attention is drawn to the fact that the interconnections covered by this Report shall in all circumstances meet the safety requirements specified in IEC Publication 65 (HD 195 S6 : 1989) and the electromagnetic compatibility requirements specified in the appropriate publications.

1.2 Field of application

- 1.2.1 *This Report applies to the European high definition socket and plug connector mounted on various devices that are components of domestic High Definition analogue audio-visual systems and their cord-sets. It includes the designation of contacts, the type of the interchanged signals and the matching values and related impedances.*

*This standard does not apply to :*

- equipment so small that its size is not compatible with the dimensions of the socket and/or plug connector
- 4 : 3 aspect ratio television receivers or
- 16 : 9 receivers only capable of displaying 625 line based systems.

- 1.2. This Report covers the interconnection cord-sets themselves (type of conductors, wiring, etc.).

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- 1.2.3 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 type of device.

- 1.2.4 The user should be informed about the possible applications that are provided by a device.

2 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 (see following pages)

Signal Destination	Matching values.	Contact Number	HDTV Test conditions and comments
AUDIO output A <sup>1)</sup> Mono Stereo channel left Independent channel A	Impedance $\leq 1 \text{ k}\Omega$ <sup>3)</sup> .  Voltage (r.m.s. value) : nominal 0,5 V * maximum 2,0 V**	3	Load impedance for compliance testing : 10 k $\Omega$  * for a transmitted nominal level. The nominal level corresponds to a level which is 12 dB below the "full scale" analogue sinewave signal of 400 Hz..  ** the "full scale" analogue level which is the sine-wave signal having a positive and negative peak values represented by the digital values of (7FFF)H and (8001)H in a 16 bit system.
AUDIO output B <sup>1)</sup> Mono Stereo channel right Independent channel B	Impedance $\leq 1 \text{ k}\Omega$ <sup>3)</sup> .  Voltage (r.m.s. value) : nominal 0,5 V * maximum 2,0 V**	1	Load impedance for compliance testing : 10 k $\Omega$  * for a transmitted nominal level. The nominal level corresponds to a level which is 12 dB below the "full scale" analogue sinewave signal of 400 Hz..  ** the "full scale" analogue level which is the sine-wave signal having a positive and negative peak values represented by the digital values of (7FFF)H and (8001)H in a 16 bit system
AUDIO output A <sup>1)</sup> Mono Stereo channel left Independent channel A	Impedance $\geq 10 \text{ k}\Omega$ <sup>2)</sup>  Voltage (r.m.s. value) : nominal 0,5 V minimum 0,2 V * maximum 2,0 V	6	Source impedance for compliance testing : 1 k $\Omega$  * for a nominal output value according to the equipment specification
AUDIO output B <sup>1)</sup> Mono Stereo channel right Independent channel B	Impedance $\geq 10 \text{ k}\Omega$ <sup>2)</sup>  Voltage (r.m.s. value) : nominal 0,5 V minimum 0,2 V * maximum 2,0 V	2	Source impedance for compliance testing : 1 k $\Omega$  * for a nominal output value according to the equipment specification
Audio common return		4	

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Signal Destination	Matching values.	Contact Number	HDTV Test conditions and comments
VIDEO output (625 line)	<p>Impedance 75 <math>\Omega</math> 6).</p> <p>Composite HD-(D2)MAC/packet signal 4) : Difference between black level and white level : 1 V (<math>\pm</math> 3 dB) 5). Superimposed frame locked 25 Hz component <math>\leq</math> 0,1 V peak to peak 7).</p> <p>Composite video signal : Difference between white level and synchronizing level : 1 V (<math>\pm</math> 3 dB).</p> <p>MAC signal : The amplitude between black level and white level is 1 V (<math>\pm</math> 3 dB) and if the superimposed energy dispersal signal is present, it can cause an amplitude contribution of maximum 0,3 V.</p> <p>Superimposed DC component within 0 V and +2 V.</p>	19	Positive going video
VIDEO output return (625 line)	<p>Impedance 75 <math>\Omega</math> 6).</p> <p>Composite HD-(D2)MAC/packet signal 4). Difference between black level and white level : 1 V (<math>\pm</math> 3 dB) 5). Superimposed frame locked 25 Hz component <math>\leq</math> 0,1 V peak to peak 7).</p> <p>Composite video signal : Difference between white level and synchronizing level : 1 V (<math>\pm</math> 3 dB).</p> <p>MAC signal : The amplitude between black level and white level is 1 V (<math>\pm</math> 3 dB) and if the superimposed energy dispersal signal is present, it can cause an amplitude contribution of maximum 0,3 V.</p> <p>Superimposed DC component within 0 V and +2 V.</p>	17	Positive going video
VIDEO input return		18	

Signal Destination	Matching values.	Contact Number	HDTV Test conditions and comments
RED primary colour signal (1250 line) Input or Output	Impedance : 75 $\Omega$ 6) Difference between the peak value and blanking level : 0,7 V $\pm$ 0,1 V 8) Superimposed d.c. component within 0 V and + 2 V	15	Positive going signal Bandwidth : 20 MHz The HD Active Video area is defined in figure 4
RED return		13	Positive going signal
GREEN primary colour signal (1250 line) Input or Output	Impedance : 75 $\Omega$ 6) Difference between the peak value and blanking level : 0,7 V $\pm$ 0,1 V 8) Superimposed d.c. component within 0 V and + 2 V	11	Positive going signal Bandwidth : 20 MHz The HD Active Video area is defined in figure 4
GREEN return		9	Positive going signal
BLUE primary colour signal (1250 line) Input or Output	Impedance : 75 $\Omega$ 6) Difference between the peak value and blanking level : 0,7 V $\pm$ 0,1 V 8) Superimposed d.c. component within 0 V and + 2 V	7	Positive going signal Bandwidth : 20 MHz The HD Active Video area is defined in figure 4
BLUE return		5	Positive going signal

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Signal Destination	Matching values.	Contact Number	HDTV Test conditions and comments
Horizontal Synchronization (rapid switching)	Impedance : 75 $\Omega$ (6.9) level "0" : 0 V to + 0,4 V level "1" : 1 V to + 3 V (9.10)	16	Positive going synchronization signal The horizontal synchronization signal shall be in accordance with figure 1 and figure 2
Input or Output Vertical Synchronization (rapid switching)	Impedance : 75 $\Omega$ (6.9)	12	Positive going synchronization signal The horizontal synchronization signal shall be in accordance with figure 1 and figure 3
Input or Output Horizontal and Vertical synchronization return	level "0" : 0 V to + 0,4 V level "1" : 1 V to + 3 V (9.10)	14	
FUNCTION SWITCHING 11)	Input resistance $\geq$ 10 k $\Omega$ Input capacitance $\leq$ 2 nF	8	Load resistance for compliance testing : 10 k $\Omega$ For a High Definition 16:9 Aspect Ratio television receiver the control voltage is an input signal delivered by the peripheral equipment.
HD-status Input or Output	level "0" : 0 V to + 2 V level "1" : + 9,5 V to + 12 V Rise time $\leq$ 5 ms		level "0" normal television operation (reproduction of the detector output), level "1" High Definition RGB signal available at input or the television (reproduction of an external source either VIDEO (625 line) or RGB (1250 line))
Common return	When contact 8 acts as an output : 300 $\Omega$ < output resistance < 1 k $\Omega$ .	21	Connected to reference potential and plug shield

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