# SLOVENSKI STANDARD

# SIST EN 62315-1:2004

september 2004

DTV-profili za nekomprimirane digitalne video vmesnike - 1. del: Splošno (IEC 62315-1:2003)

DTV profiles for uncompressed digital video interfaces - Part 1: General (IEC 62315-1:2003)

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<u>SIST EN 62315-1:2004</u> https://standards.iteh.ai/catalog/standards/sist/1081710b-bba7-422e-b7b8e63647dfa459/sist-en-62315-1-2004

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### EUROPEAN STANDARD

## EN 62315-1

### NORME EUROPÉENNE

### EUROPÄISCHE NORM

December 2003

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English version

### DTV profiles for uncompressed digital video interfaces Part 1: General

(IEC 62315-1:2003)

Profils DTV (Télévision Numérique) des interfaces vidéo numériques non comprimées Partie 1 : Généralités (CEI 62315-1:2003) DTV-Profile für nicht komprimierte digitale Videoschnittstellen Teil 1: Allgemeines (IEC 62315-1:2003)

### iTeh STANDARD PREVIEW

This European Standard was approved by CENELEC on 2003-12-01. 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 ba7-422c-b7b8-

e63647dfa459/sist-en-62315-1-2004

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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

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### Foreword

The text of the International Standard IEC 62315-1:2003, prepared by technical area 4, Digital systems interfaces, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the formal vote and was approved by CENELEC as EN 62315-1 on 2003-12-01 without any modification.

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) 2004-12-01
-	latest date by which the national standards conflicting with the EN have to be withdrawn	(dow) 2006-12-01

### **Endorsement notice**

The text of the International Standard IEC 62315-1:2003 was approved by CENELEC as a European Standard without any modification.

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### Annex ZA

### (normative)

# Normative references to international publications with their corresponding European publications

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).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	<u>EN/HD</u>	<u>Year</u>
ITU-R BT.601-5	1995	Studio encoding parameters of digital television for standard 4:3 and wide- screen 16:9 aspect ratios	-	-
ITU-R BT.709-5	2002	Parameter values for the HDTV standards for production and international programme exchange V	-	-
VESA E-EDID TM Standard	2000	VESA Enhanced Extended Display Identification Data Standard, Release A	-	-
VESA E-DDC TM Standard	1999 https://star	VESA Enhanced Display Data Channel Standards/sist/1081/100-bba7-42 e63647dfa459/sist-en-62315-1-2004	2 <mark>2</mark> e-b7b8-	-

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# INTERNATIONAL STANDARD



First edition 2003-03

# DTV profiles for uncompressed digital video interfaces –

### Part 1: General iTeh STANDARD PREVIEW (standards.iteh.ai)

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International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale International Electrotechnical Commission Международная Электротехническая Комиссия



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### INTERNATIONAL ELECTROTECHNICAL COMMISSION

### DTV PROFILES FOR UNCOMPRESSED DIGITAL VIDEO INTERFACES –

### Part 1: General

### FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense che STANDARD PREVIEW
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- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
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- 6) Attention is drawn to the possibility that some of the elements of this (International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62315-1 has been prepared by technical area 4, Digital systems interfaces, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this standard is based on the following documents:

CDV	Report on voting
100/507/CDV	100/608/RVC

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

### DTV PROFILES FOR UNCOMPRESSED DIGITAL VIDEO INTERFACES –

### Part 1: General

### 1 Scope

This part of IEC 62315 specifies requirements for digital television (DTV) monitors that use an uncompressed, baseband, digital video interface. These requirements apply to baseband, digital, video interfaces that use the VESA E-EDID<sup>™</sup> Standard for the discovery of supported video formats.

This standard also specifies the video formats to be supported by a DTV monitor. The timing requirements for 14 video formats are specified along with requirements for video format discovery. A mechanism allowing a video source to discover the preferred format of a DTV monitor is also described.

A digital video interface is not specified in this part; however, it is envisaged that such interfaces will appear in future parts of IEC 62315.

NOTE 1 It is recommended that devices using the DTV profiles defined in this document, incorporate a digital content protection system on such interfaces in order to ensure interoperability between devices.

### 2 Normative references (standards.iteh.ai)

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.

ITU-R BT.601-5: 1995, Studio encoding parameters of digital television for standard 4:3 and wide-screen 16:9 aspect ratios

ITU-R BT.709-5: 2002, Parameter values for the HDTV standards for production and international programme exchange

VESA E-EDID<sup>™</sup> Standard, *VESA Enhanced Extended Display Identification Data Standard*, Release A, Revision 1, February 9, 2000.

VESA E-DDC<sup>™</sup> Standard, VESA Enhanced Display Data Channel Standard, Version 1, September 2, 1999.

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**3.1 aspect ratio** ratio of width to height of a picture or display screen

3.2 aspect ratio, display aspect ratio of the DTV monitor

### 3.3

### aspect ratio, picture

aspect ratio of the picture, which is made up of the active pixels in the video format

NOTE The pixels are not necessarily square. The video image may be smaller than the active pixel region, with background data filling the rest of the region.

### 3.4

#### digital television (DTV)

device that receives, decodes, and presents audio and video material that has been transmitted in a compressed form

NOTE The device may be a single unit or it may be constructed from individual components (e.g. a digital terrestrial set top box and an analogue television).

### 3.5

#### digital video interface

cable between a video source and DTV monitor that transfers uncompressed digital video information

### 3.6

### monitor

device capable of displaying video

### 3.7

monitor, DTV EDTV, HDTV or SDTV monitor, or any combination of these three EW

### 3.8

### (standards.iteh.ai)

monitor, EDTV

device capable of displaying 640x480pr and 2either20720x576p or 720x480p in 16:9 or 4:3 aspect ratios https://standards.iteh.ai/catalog/standards/sist/1081710b-bba7-422e-b7b8-e63647dfa459/sist-en-62315-1-2004

### 3.9

monitor, HDTV

EDTV monitor, with a 16:9 screen, capable of displaying 1920x1080i or 1280x720p video

### 3.10

### monitor, SDTV

device capable of displaying 720x480i video in 16:9 or 4:3 aspect ratios

### 3.11

tuner

video source that decodes a digital video transmission and outputs this transmission as video

### 3.12

### tuner, EDTV

tuner capable of converting signals into 640x480p and either 720x576p or 720x480p

### 3.13

### tuner, HDTV

EDTV tuner capable of converting signals into 1920x1080i and 1280x720p

### 3.14

### video source

device that sends video information to a DTV monitor using the digital video interface

### 4 Symbols and abbreviated terms

ATSC	Advanced Television Systems Committee
DDWG	Digital Display Working Group
DTV	Digital TeleVision
DVI	Digital Visual Interface
E-DDC	Enhanced Display Data Channel
E-EDID	Enhanced Extended Display Identification Data
EDTV	Enhanced Definition Television
EIA	Electronic Industries Alliance
HDTV	High Definition Television
i	interlaced scanning
р	progressive scanning
lsb	least significant bit
LVDS	Low Voltage Differential Signalling
MPEG	Moving Picture Experts Group
MTS	Monitor Timing Specification (a specific VESA standard)
OpenLDI	Open LVDS Display Interface
PSIP	Program and System Information Protocol
SDTV	Standard Definition Television ards.iteh.ai)
SMPTE	Society of Motion Picture and Television Engineers
	SIST EN 62315-1:2004

VESA Video Electronics Standards Association https://standards.iteh.ai/catalog/standards/sist/1081710b-bba7-422e-b7b8-

e63647dfa459/sist-en-62315-1-2004

### 5 General requirements

Any DTV monitor conforming to this standard shall support the 640x480p format at 60 Hz, as defined in 6.2.1. The DTV monitor shall also support either 720x480p or 720x576p, as defined in 6.2.4 and 6.2.9 respectively, in one of two picture aspect ratios, 4:3 or 16:9. Additionally, any HDTV monitor conforming to this standard shall have a 16:9 display aspect ratio and shall support either 1280x720p or 1920x1080i, as defined in 6.2.2, 6.2.3, 6.2.6, 6.2.7, and 6.2.8. Formats of 720x576i and 720x480i, defined in 6.2.10 and 6.2.5 are optional within this standard.

NOTE 1 This implicitly allows any source device to only support 720x576p, 720x480p, or 640x480p. For the source device to supply high definition content to any HDTV monitor, it should be capable of supporting 1280x720p and 1920x1080i, since an HDTV monitor may only support one of the two formats. In some cases, the source device will need to convert video from its original format (e.g. 720x480i) to a format supported by the DTV Monitor (e.g. 720x480p).

The DTV tuner and DTV monitor requirements specified by this standard are summarized in Table 1. The requirements of 50 Hz applications are different from the requirements of 60 Hz applications, as given in Table 1.

NOTE 2 The product definitions are explained in Clause 3.