

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Digital video interface – Gigabit video interface for multimedia systems**

**Interface vidéo numérique – Interface vidéo gigabit pour les systèmes multimédias**



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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Digital video interface – Gigabit video interface for multimedia systems**

**Interface vidéo numérique – Interface vidéo gigabit pour les systèmes multimédias**

INTERNATIONAL  
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## CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references .....	8
3 Terms, definitions and abbreviated terms .....	8
3.1 Terms and definitions.....	8
3.2 Abbreviated terms.....	11
4 Architecture.....	11
5 Electrical characteristics.....	11
5.1 General.....	12
5.2 AC electrical specifications .....	12
6 Front-end.....	14
6.1.1 General .....	14
6.1.2 TX Front-end .....	15
6.1.3 RX Front-end.....	15
6.1.4 Configuration block diagram .....	15
6.1.5 Data mapping .....	15
7 Transition state link .....	17
8 Protocol.....	18
8.1 Downstream encoder .....	18
8.1.1 General .....	18
8.1.2 GHDS and GLDS concatenation .....	18
8.1.3 Scrambler.....	18
8.1.4 5B/6B conversion .....	19
8.2 Downstream decoder .....	19
8.3 Upstream encoder .....	20
8.3.1 GLUS concatenation.....	20
8.3.2 Scrambler.....	20
8.3.3 5B/6B conversion .....	20
8.3.4 Upstream decoder .....	20
9 Transmission system and transmission line of electrical characteristics.....	21
Annex A (informative) GVIF2 multiple contents transmission.....	22
Annex B (informative) GVIF standard specification .....	24
B.1 Architecture .....	24
B.2 Electrical characteristics .....	25
B.2.1 DC electrical specifications.....	25
B.2.2 AC electrical specifications .....	26
B.3 Front-end.....	27
B.3.1 General .....	27
B.3.2 TX front-end .....	27
B.3.3 RX front-end.....	28
B.4 Transition state link.....	28
B.5 Protocol .....	29
B.5.1 General .....	29
B.5.2 Encoder.....	29
B.5.3 Decoder.....	32

B.6	Transmission system and transmission line of electrical characteristics .....	32
Annex C (informative)	GVIF Multiple link application .....	34
C.1	Single-link application example .....	34
C.1.1	Block diagram for single-link transmission .....	34
C.1.2	Data mapping of single-link transmission .....	35
C.2	Multiple-link application example.....	35
C.2.1	Block diagram for 2-pair parallel transmission.....	35
C.2.2	Data mapping of 2-pair transmission.....	36
	Bibliography.....	37
	Figure 1 – Architecture of the GVIF2.....	11
	Figure 2 – Level definition of GVIF2.....	13
	Figure 3 – GVIF2 downstream eye mask (at TP1) .....	13
	Figure 4 – GVIF2 upstream eye mask (at TP2) .....	14
	Figure 5 – Front-end block diagram of GVIF2.....	14
	Figure 6 – GVIF2 configuration block diagram Data mapping .....	15
	Figure 7 – GVIF2 RGB888 data mapping .....	16
	Figure 8 – GVIF2 mapping for general content data(optional) .....	16
	Figure 9 – Transaction state diagram of GVIF2 .....	17
	Figure 10 – REF and WSYNC signals of GVIF2 downstream.....	18
	Figure 11 – WSYNC signal of upstream .....	18
	Figure 12 – Downstream encoding .....	19
	Figure 13 – Downstream decoding .....	20
	Figure 14 – GLUS word structure .....	20
	Figure 15 – Test points of GVIF2 .....	21
	Figure 16 – S21 template for GVIF2 transmission line.....	21
	Figure A.1 – GVIF2 transmission for single content.....	22
	Figure A.2 – GVIF2 multiplex transmission for multiple contents .....	23
	Figure B.1 – Architecture of the GVIF .....	24
	Figure B.2 – VOD and VCS diagrams .....	25
	Figure B.3 – Transmitter eye mask specifications (TP1).....	26
	Figure B.4 – Front-end block diagram .....	27
	Figure B.5 – Transition state link .....	29
	Figure B.6 – Encoder output diagram.....	30
	Figure B.7 – C-format word.....	31
	Figure B.8 – H-format word.....	32
	Figure B.9 – Transmission system .....	33
	Figure B.10 – Transmission line tolerance impedance.....	33
	Figure B.11 – Transmission loss .....	33
	Figure C.1 – Differential single-link block diagram .....	34
	Figure C.2 – Pixel configuration .....	35
	Figure C.3 – Multiple-link application block diagram.....	35
	Figure C.4 – Pixel configuration when using 2-pairs.....	36

Table 1 – AC electrical specification of GVIF2 .....	13
Table 2 – 5B/6B conversion .....	19
Table A.1 – GVIF2 data rate of transmission and number of the DATA SLOT.....	22
Table B.1 – DC electrical specifications of the transmitter.....	25
Table B.2 – DC electrical specifications of the receiver.....	26
Table B.3 – AC electrical specifications of the transmitter.....	26
Table B.4 – AC electrical specifications of the receiver .....	27
Table B.5 – 4B/5B conversion.....	31
Table B.6 – VSYNC, HSYNC, DE, CNTL/AUX, SDA, TDA transition and the corresponding header .....	32

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**DIGITAL VIDEO INTERFACE –  
GIGABIT VIDEO INTERFACE FOR MULTIMEDIA SYSTEMS**

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IEC 62889 has been prepared by Technical Area 4: Digital system interfaces and protocols, of IEC Technical Committee 100: Audio, video and multimedia systems and equipment. It is an International Standard.

IEC 6101B served as a basis for the elaboration of this document.

This second edition cancels and replaces the first edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Addition of a new technology interface, GVIF2.

The text of this International Standard is based on the following documents:

Draft	Report on voting
100/3912/CDV	100/4040/RVC

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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## INTRODUCTION

This International Standard is based on JEITA CP-6101B: *Digital monitor interface GVIF*, which was originally specified by the Japan Electronics and Information Technology Industries Association (JEITA).

The Gigabit Video InterFace (GVIF) is a serial point-to-point interface supporting uncompressed digital video links that was designed to address the needs of automotive navigation and entertainment systems, etc., to transport baseband digital video information. GVIF applies low-voltage differential signalling (LVDS) technology and makes use of a thin cable consisting of a single shielded twisted pair of conductors that exhibits high noise immunity and low EMI, and is optimized for small size and low weight. GVIF supports display resolutions ranging from WQVGA through WUXGA with a maximum of 24 bits per pixel colour video data, and can transmit a baseband video signal over cable lengths over 10 m. Optionally, GVIF supports audio data transmission and user data transmission.

Gigabit Video InterFace 2 (GVIF2) is a baseband transmission method for digital video information that applies serial data transmission technology. In the downstream transmission from GVIF2 TX to GVIF2 RX, the high-bandwidth data for video information (GHDS) and the device control signal (GLDS) are transmitted by using the time-division multiplexing method. In the upstream transmission from GVIF2 RX to GVIF2 TX, the control signal (GLUS) is transmitted. The upstream transmission and downstream transmission occur in full duplex. Optionally, GVIF2 also supports audio data transmission and user data transmission.

Also optionally, when paired with high-bandwidth digital content protection (HDCP), the GVIF's standard functions and features address all of the requirements for delivering content-protected video from a source to a video display monitor.

This document describes the GVIF family that consists of GVIF2 in the main body and Annex A, and GVIF in Annex B and Annex C.

GVIF2 has the following features:

- transmission by a differential shielded twisted-pair cable or coaxial cable,
- to enable multiple video and audio content transmission using time-division multiplexing,
- possibility to use audio transmission, bi-direction user communication, and HDCP (high-bandwidth digital content protection) technology (optional),
- availability for daisy chain transmission (optional).

The Association of Radio Industries and Businesses (ARIB) refers to GVIF and GVIF2 in its standard ARIB STD-B21 as being authorized digital video output interfaces.

# DIGITAL VIDEO INTERFACE – GIGABIT VIDEO INTERFACE FOR MULTIMEDIA SYSTEMS

## 1 Scope

This document describes two serial digital interfaces, Gigabit Video InterFace (GVIF) and Gigabit Video InterFace2 (GVIF2), for the interconnection of digital video equipment. GVIF and GVIF2 are primarily intended to carry high-speed digital video data for general usage and are well suited for multimedia entertainment systems in a vehicle.

This document specifies the physical layer of the interface, including transmission line characteristics and electrical characteristics of transmitters and receivers. Mechanical and physical specifications of connectors are not included.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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, *Studio encoding parameters of digital television for standard 4:3 and wide-screen 16:9 aspect ratios*

ITU-R BT.656-5, *Interface for digital component video signals in 525-line and 625-line television systems operating at the 4:2:2 level of Recommendation ITU-R BT.601*

## 3 Terms, definitions and abbreviated terms

### 3.1 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

#### 3.1.1

##### **DE**

display enable signal given in IEC 62315-1

#### 3.1.2

##### **HSYNC**

display horizontal synchronous signal given in IEC 62315-1

#### 3.1.3

##### **VSYNC**

display vertical synchronous signal given in IEC 62315-1