Data Sheet

ADV7671

48 Gbps HDMI 1:1 Transceiver

FEATURES

- 1-input, 1-output HDMI transceiver, uncompressed video
  - Up to 8k60 YCbCr 4:2:0 12-bit video support
  - Up to 8k30 RGB/YCbCr 4:4:4/4:2:2 12-bit video support
  - Up to 4k120 4:4:4 12-bit high frame rate video support
- HDMI receiver
  - Up to 48 Gbps FRL support
  - Up to 18 Gbps TMDS video support
  - eARC transmitter
  - On-chip, 4-block EDID SRAM managed by external MCU host processor through API
- HDMI transmitter
  - Up to 48 Gbps FRL support
  - Up to 18 Gbps TMDS video support
  - eARC receiver
- HDCP
  - HDCP 1.4 and HDCP 2.3 support
  - Independent HDCP support on transmitter and receiver ports
  - Fully integrated HDCP 1.4 and HDCP 2.3 repeater modes
  - On-chip key storage in OTP memory
- Audio
  - Audio extraction and insertion ports
  - 6-channel, 1-bit audio support
  - 8-channel, 192 kHz, 24-bit LPCM audio support
  - 24.576 Mbps IEC 61937 compressed audio support
- Video
  - FRL to TMDS and TMDS to FRL mode conversion
  - VRR, FVA, and ALLM passthrough support
  - Dynamic HDR passthrough support including HDMI dynamic HDR metadata, HDR10+, and Dolby Vision
  - DSC 1.2a passthrough support
- HDMI 1.4a, HDMI 1.4b, HDMI 2.0, and HDMI 2.1 compliant and DVI-compatible transceiver

APPLICATIONS

- TVs, home theaters, and soundbars

GENERAL DESCRIPTION

The ADV7671 is a High-Definition Multimedia Interface (HDMI®) transceiver.

The ADV7671 supports 48 Gbps fixed rate link (FRL) and 18 Gbps transition minimized differential signaling (TMDS) video rates. The ADV7671 provides an HDMI receiver port, an HDMI transmitter port, an audio input port, an audio output port, and an enhanced audio return channel (eARC) interface.

The HDMI receiver and transmitter support up to uncompressed 8k at 60 Hz (8k60) YCbCr 4:2:0 12-bit video, 8k at 30 Hz (8k30) RGB 12-bit video, and 4k at 120 Hz (4k120) RGB 12-bit high frame rate video, with Digital Visual Interface (DVI) compatibility.

The audio output port supports 8-channel, 192 kHz linear pulse code modulation (LPCM), and the audio input port supports 2-channel, 192 kHz LPCM. The ADV7671 audio ports also support compressed audio formats.

The eARC interface supports 8-channel, 192 kHz PCM audio and high bit rate audio (HBR) compressed audio formats including 1-bit Direct Stream Digital® (DSD) audio, Dolby Atmos™, Dolby TrueHD™, and DTS-HD™. Audio return channel (ARC) is also supported on the eARC interface.

The ADV7671 supports passthrough of Display Stream Compression (DSC) 1.2a data and high dynamic range (HDR) metadata passthrough for HDMI dynamic HDR, HDR10+, and Dolby Vision™. The ADV7671 also supports variable refresh rate (VRR), fast Vactive (FVA), and automatic low latency mode (ALLM) passthrough mode for HDMI.

The ADV7671 implements the High-bandwidth Digital Content Protection (HDCP) 2.3 specification to protect the delivery of premium content. HDCP 2.3 is applied in transmitter, receiver, and repeater configurations. HDCP 2.3 is backward compatible with HDCP 2.2.

The ADV7671 is configured via I^2C using a high level host controller application programming interface (API).

The ADV7671 is provided in a 108-lead lead frame chip scale package (LFCSP) with exposed pad and is specified over the 0°C to 70°C temperature range.

To sample or purchase the ADV7671, customers must be licensed HDMI 2.1 adopters through HDMI Licensing Administrator, Inc., and licensed HDCP 2.x adopters through Digital Content Protection, LLC (DCP).

Analog Devices is in the process of updating documentation to provide terminology and language that is culturally appropriate. This is a process with a wide scope and will be phased in as quickly as possible. Thank you for your patience.

For more information about the ADV7671, contact your local Analog Devices, Inc., sales office at www.analog.com/sales.

Rev. SpA

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