

48 Gbps HDMI 4:1 Transceiver

FEATURES

- ▶ 4-input, 1-output HDMI transceiver, uncompressed video support
 - ▶ 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 inputs
 - ▶ Up to 48 Gbps FRL support
 - ▶ Up to 18 Gbps TMDS video support
 - ▶ InstaPort UHD fast switching
 - ▶ eARC/ARC transmitter per port
 - ▶ On-chip, 4-block EDID SRAM per port (EDID content managed by external MCU through API)
- ▶ HDMI output
 - ▶ 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 HDMI output and on each HDMI input
 - ▶ Fully integrated HDCP 1.4, and HDCP 2.3 repeater modes
 - ▶ On-chip key storage in OTP memory
- ▶ Audio
 - ▶ EZ Audio 1:4 eARC/ARC switch
 - ▶ 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, ALLM, and DSC 1.2a passthrough support
 - ▶ Dynamic HDR passthrough support including HDMI dynamic HDR metadata, HDR10+, and Dolby Vision
- ▶ HDMI 1.4a, HDMI1.4b, HDMI2.0, HDMI2.1 compliant and DVI-compatible transceiver

APPLICATIONS

- ▶ TVs, set top boxes, projectors, audio video receivers, home theaters, switching, and soundbars

For more information about the ADV7674, contact your local Analog Devices, Inc., sales office at www.analog.com/sales.

GENERAL DESCRIPTION

The ADV7674 is a High-Definition Multimedia Interface (HDMI[®]) transceiver.

The ADV7674 supports 48 Gbps fixed rate link (FRL) and 18 Gbps transition minimized differential signaling (TMDS) video rates and provides four independent HDMI receiver ports, an HDMI transmitter port, an audio input port, an audio output port, four enhanced audio return channel (eARC) outputs, and eARC receiver. InstaPort[™] ultrahigh definition (UHD) fast switching is supported between each HDMI receiver input.

The ADV7674 features an EZ Audio[™] 1:4 eARC/ARC switch. The audio input port and audio output port each support 8-channel, 192 kHz linear pulse code modulation (LPCM) and compressed audio formats (see Table 9).

The ADV7674 eARC/ARC transmitters and receiver support 8-channel, 192 kHz LPCM 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[™]. The ADV7674 also supports variable refresh rate (VRR), fast Vactive (FVA), and automatic low latency mode (ALLM) passthrough mode for HDMI.

The ADV7674 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 ADV7674 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, and is backward compatible with HDCP 2.2.

The ADV7674 is configured via I²C using a high level host controller application programming interface (API).

The ADV7674 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 ADV7674, 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).

Only features/functions specifically stated as such in the product documentation are supported. Otherwise, optional features/functions are not supported.

NOTES