ANALOG DEVICES

40 Gbps HDMI 2:2 Crosspoint Transceiver

Data Sheet

ADV7672

FEATURES

2-input and 2-output crosspoint HDMI transceiver
  8k30 RGB/YCbCr 4:4:4 or 4k120 RGB/YCbCr 4:4:4 10-bit
    video support
  8k60 YCbCr 4:2:0 10-bit video support
HDMI receivers
  Up to 40 Gbps FRL support
  Up to 18 Gbps TMDS video support
  eARC transmitter
  EDID access in low power standby mode
  EDID SRAM managed by internal MCU host processor
  Fast switching between ports
HDMI transmitters
  Up to 40 Gbps FRL support
  Up to 18 Gbps TMDS video support
  eARC receiver
HDCP
  HDCP 1.4, HDCP 2.2, and HDCP 2.3 support
  Independent HDCP on each transmitter and receiver port
  Fully integrated HDCP 1.4, HDCP 2.2, and HDCP 2.3 repeater
    modes
  On-chip key storage in OTP
Audio
  2 independently configurable audio ports
  8-channel, 192 kHz, 24-bit PCM audio support
  24.576 Mb IEC61937 compressed audio support
  eARC receiver or transmitter with multichannel PCM,
    HBR audio, and ARC support
Video
  Crosspoint matrix switch, video mirror, video split, and
    video merge modes
  FRL to TMDS and TMDS to FRL modes conversion
  Variable refresh rate (VRR), fast vactive (FVA), and auto low
    latency mode (ALLM) support
  Dual path color space conversion
  Dynamic HDR passthrough support including HDMI dynamic
    HDR metadata, HDR10+, and Dolby Vision™
  DSC 1.2a passthrough
  Video test pattern generator

APPLICATIONS

TV
Home theater
Industrial switching

GENERAL DESCRIPTION

The ADV7672 is a High-Definition Multimedia Interface (HDMI®) transceiver with crosspoint matrix switch, video mirror, video split, and video merge capabilities.

The ADV7672 supports 40 Gbps fixed rate link (FRL) and 18 Gbps transition minimized differential signaling (TMDS) video rates and provides two independent HDMI receiver ports, two independent HDMI transmitter ports, two audio ports, and an enhanced audio return channel (eARC) interface.

Each HDMI receiver and transmitter supports 8k30 RGB/YCbCr 4:4:4 10-bit video, 8k60 YCbCr 4:2:0 10-bit high definition video, and 4k120 4:4:4 10-bit high frame rate video.

Each audio port can be independently configured as either an audio extraction or audio insertion port. The audio ports support 8-channel, 192 kHz, 24-bit pulse coded modulation (PCM) and compressed audio formats including high bitrate formats.

The eARC interface can be configured as either an eARC transmitter or an eARC receiver. The eARC interface supports 8-channel 192 kHz PCM audio and high bit rate audio (HBR) compressed audio formats including Dolby TrueHD™ and DTS-HD™. Audio return channel (ARC) is also supported on the eARC interface.

The ADV7672 supports display stream compression (DSC) 1.2a data passthrough and high dynamic range (HDR) metadata passthrough for HDMI dynamic HDR, HDR10+, and Dolby Vision™.

The ADV7672 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 backwards compatible with HDCP 2.2. HDCP 1.4 is also supported to provide interoperability with legacy devices.

The ADV7672 is configured via I²C using a high level host controller interface (API).

The ADV7672 is provided in a 108-lead, lead frame chip scale package (LFCSP) with an exposed paddle and is specified over a 0°C to 70°C temperature range.

Customers that wish to sample or purchase the ADV7672 must be licensed HDMI 2.1 adopters listed at HDMI.org and licensed HDCP 2.x adopters listed at Digital-CP.com.

For more information about the ADV7672, contact your local Analog Devices, Inc., sales office at www.analog.com/sales.

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NOTES

[1] I²C refers to a communications protocol originally developed by Phillips Semiconductors (now NXP Semiconductors).
[2] HDMI, the HDMI Logo, and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing Administrator, Inc., in the United States and other countries.

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