HDMI Transceiver with Fast Port Switching

ADV7623

FEATURES

4-input, 1-output multiplexed HDMI transceiver
HDMI 1.4 support
   Audio return channel (ARC)
   3D TV support
   Content type bits
   CEC 1.4-compatible (CEC_CPD and CEC_HPD)
Xpressview™ fast switching on all HDMI input ports
Character- and icon-based on-screen display (OSD)
High-Bandwidth Digital Content Protection (HDCP 1.4)
HDCP repeater support
225 MHz HDMI Rx and Tx support 36-/30-/24-bit Deep Color
Supports DVI RGB graphics up to 1600 × 1200 at 60 Hz
Ultralow jitter digital PLL (100% deskew)
Quad HDMI Rx input
   Format details available on all unselected ports
   Adaptive equalizer for cable lengths up to 30 meters
   Internal extended display identification data (EDID) RAM
   EDID replication (512 bytes per port)
   EDID with HDMI cable 5 V power support
   5 V detect inputs
   Hot plug assertion control pins
Single HDMI Tx output
   EDID data extraction
   Hot plug detect (HPD) input
Audio support
   HDMI 1.4-compatible audio interface
   Dedicated flexible audio input/output port
   S/PDIF (IEC 60958-compatible) digital audio input/output
   Super audio CD (SACD) with DSD input/output interface
   High bit rate (HBR) audio
     Dolby® TrueHD
     DTS-HD Master Audio™
     Full audio input and output support
General
   Interrupt controller with 3 interrupt outputs
   STDI (standard identification circuit)
   Software libraries, driver, and application available
   2-layer PCB design supported

APPLICATIONS

AVRs
HTiB
Sound bar with HDMI repeater support
HBR enabled TVs
Other repeater applications

GENERAL DESCRIPTION

The ADV7623 is a high performance, four-input, one-output, High-Definition Multimedia Interface (HDMI™) transceiver that integrates HDMI 1.4 receiver and transmitter functions with digital audio I/Os onto one chip. It supports all HDCP repeater functions through fully tested Analog Devices, Inc., repeater software libraries and drivers.

The ADV7623 incorporates Xpressview fast switching on all input HDMI ports. Using an Analog Devices hardware-based HDCP engine that minimizes software overhead, Xpressview technology allows fast switching between any HDMI input ports in less than 1 second.

The ADV7623 supports all mandatory HDMI 1.4 3D TV formats in addition to all HDTV formats up to 1080p 36-bit Deep Color. The ADV7623 also features an integrated HDMI 1.4 CEC controller, which supports capability, discovery, and control (CDC).

The ADV7623 has an integrated on-screen display (OSD) feature that allows generation and control of high quality character- and icon-based system status and control displays. Customers interested in using OSD are provided with Analog Devices OSD SDK.

The ADV7623 offers a dedicated flexible audio output port and a dedicated audio input port to allow for easy extraction and insertion of audio data into and out of the HDMI stream. HDMI audio formats, including SACD via DSD and compressed high bit rate audio via HBR, are supported. The ADV7623 also features an audio return channel (ARC) receiver. ARC simplifies cabling by combining upstream audio capability in a conventional HDMI cable.

Fabricated in an advanced CMOS process, the ADV7623 is provided in a 144-lead, 20 mm × 20 mm, Pb-free LQFP and is specified over the 0°C to 70°C temperature range.

For more information on the ADV7623, contact a local Analog Devices sales office or email ATV_VIDEORX_INFO@analog.com.

NOTES

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