

**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\_HPDP)  
**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](mailto:ATV_VIDEORX_INFO@analog.com).

**Advantiv**  
Advanced Television Solutions  
by Analog Devices

**Xpressview**  
Fast Switching Technology  
by Analog Devices

**Rev. SpA**

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**ADV7623**

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