

# 225 MHz, High Performance HDMI Transmitter with ARC

**ADV7511** 

#### **FEATURES**

#### General

**Incorporates HDMI 1.4 features** 

Audio return channel (ARC)

3D video support

225 MHz supports 12-bit Deep Color operation in all video formats up to 1080p

Supports gamut metadata packet transmission

Integrated CEC buffer/controller—upgraded to HDMI 1.4 Compatible with DVI 1.0 and HDCP 1.4

Video/audio inputs accept logic levels from 1.8 V to 3.3 V Digital video

3D video ready

Programmable two-way color space converter

Supports RGB, YCbCr, and DDR

Supports ITU656-based embedded syncs

Automatic input video format timing detection (CEA-861-E) Digital audio

Audio return channel (ARC) for HDMI 1.4 support

Supports standard S/PDIF for stereo LPCM or compressed audio up to 192 kHz

8-channel uncompressed LPCM I<sup>2</sup>S audio up to 192 kHz Special features for easy system design

On-chip MPU with I<sup>2</sup>C master to perform HDCP operations and EDID reading operations

5 V tolerant I<sup>2</sup>C and HPD I/Os, no extra device needed No audio master clock needed for supporting S/PDIF and I<sup>2</sup>S On-chip MPU reports HDMI events through interrupts and registers

### **APPLICATIONS**

A/V receivers

Home entertainment products
Gaming consoles
PCs
DVD players and recorders
Digital set top boxes

 $For more information about the ADV7511, email: ATV\_VideoTx\_Apps@analog.com.$ 

#### Rev. Sp0

Information furnished by Analog Devices is believed to be accurate and reliable. However, no responsibility is assumed by Analog Devices for its use, nor for any infringements of patents or other rights of third parties that may result from its use. Specifications subject to change without notice. No license is granted by implication or otherwise under any patent or patent rights of Analog Devices. Trademarks and registered trademarks are the property of their respective owners.

#### **FUNCTIONAL BLOCK DIAGRAM**

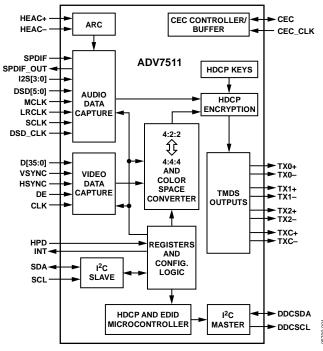


Figure 1.

#### **GENERAL DESCRIPTION**

The ADV7511 is a 225 MHz High-Definition Multimedia Interface (HDMI™) transmitter, which is ideal for home entertainment products including DVD players/recorders, digital set top boxes, A/V receivers, gaming consoles, and PCs.

The digital video interface contains an HDMI 1.4- and a DVI 1.0-compatible transmitter, and supports all HDTV formats (including 1080p with 12-bit Deep Color). The ADV7511 supports the HDMI 1.4-specific features, HEAC (ARC), and 3D video. In addition to these features, the ADV7511 supports x.v.Color™, high bit rate audio, and programmable AVI InfoFrames. With the inclusion of HDCP, the ADV7511 allows the secure transmission of protected content as specified by the HDCP 1.4 protocol.

The ADV7511 supports both S/PDIF and 8-channel I²S audio. Its high fidelity 8-channel I²S can transmit either stereo or 7.1 surround audio up to 768 kHz. The S/PDIF can carry compressed audio including Dolby\* Digital, DTS\*, and THX\*. Fabricated in an advanced CMOS process, the ADV7511 is provided in a 100-lead LQFP surface-mount plastic package and is specified over the  $0^{\circ}$ C to  $+70^{\circ}$ C temperature range.

ADV7511
---------

## **NOTES**

 $I^2 C\ refers\ to\ a\ communications\ protocol\ originally\ developed\ by\ Philips\ Semiconductors\ (now\ NXP\ Semiconductors).$