

## FEATURES

### General

- Low power HDMI/DVI transmitter ideal for portable applications
- CEC controller and expanded message buffer (3 messages) reduces system overhead
- Incorporates HDMI 1.3 (x.v.Color) technology
- Compatible with DVI 1.0
- Optional embedded HDCP keys to support HDCP 1.3
- 1.8 V and 1.2 V supplies for ultralow operating power
- Video/audio inputs accept logic levels from 1.8 V to 3.3 V

### Digital video

- 80 MHz operation supports all video and graphics resolutions from 480i to 1080i
- Programmable 2-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

- Supports standard S/PDIF for stereo LPCM or compressed audio up to 192 kHz
- 2-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 EDID reading and HDCP operations; reports HDMI events through interrupts and registers
- 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
- Compatible with [AD9394](#) HDMI companion chip 5 V generator for Hot Plug detection in portable applications

## APPLICATIONS

- Cellular handsets
- Digital video cameras
- Digital still cameras
- Personal media players
- Gaming
- DVD players and recorders
- Digital set-top boxes
- HDMI repeater

## GENERAL DESCRIPTION

The [ADV7523A](#) is an 80 MHz, High-Definition Multimedia Interface (HDMI™) transmitter with expanded CEC buffer. It supports HDTV formats up to 1080i and computer graphic resolutions up to XGA at 75 Hz.

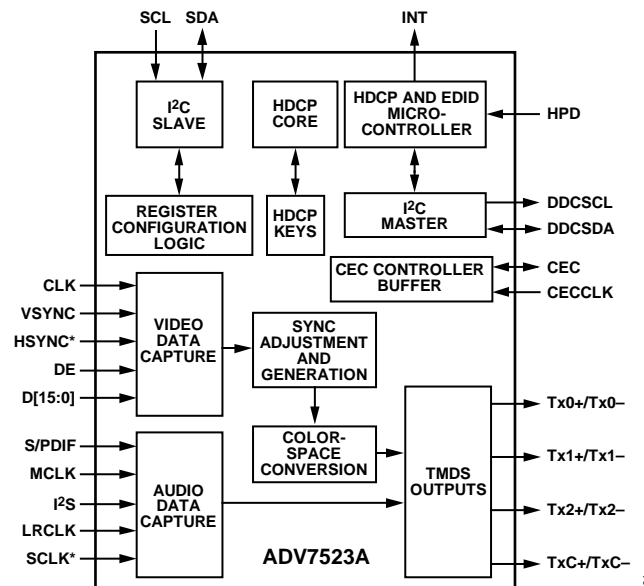
For more information about the [ADV7523A](#), email: [ATV\\_VideoTx\\_Apps@analog.com](mailto:ATV_VideoTx_Apps@analog.com).

### Rev. SpB

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## FUNCTIONAL BLOCK DIAGRAM



\*BOTH HSYNC AND SCLK CAN BE CONFIGURED AS MCLK.

Figure 1.

With the optional inclusion of embedded HDCP keys, the [ADV7523A](#) allows the secure transmission of protected content, as specified by the HDCP 1.3 protocol.

The [ADV7523A](#) supports x.v.Color™ (gamut metadata) for a wider color gamut.

The [ADV7523A](#) supports both S/PDIF and 2-channel I<sup>2</sup>S audio. Its high fidelity, 2-channel I<sup>2</sup>S audio can transmit stereo up to a 192 kHz sampling rate. S/PDIF can carry stereo LPCM audio or compressed audio, including Dolby® digital and DTS®.

The [ADV7523A](#) helps to reduce system design complexity and cost by incorporating such features as an I<sup>2</sup>C master for EDID reading, and 5 V tolerance on the I<sup>2</sup>C and Hot Plug™ detect pins.

Fabricated in an advanced CMOS process, the [ADV7523A](#) is available in a space saving, 49-ball, WLCSP surface-mount package. This package is RoHS compliant and specified to operate from -25°C to +85°C.

**NOTES**

I<sup>2</sup>C refers to a communications protocol originally developed by Philips Semiconductors (now NXP Semiconductors).

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