# Deep Color HDMI 1.3 Transmitter with CEC

# ADV7510

## FEATURES

**General**
- Incorporates HDMI (v.1.3 with Deep Color, x.v.Color)
- 225 MHz supports 12-bit Deep Color operation in all video formats up to 1080p
- Supports Gamut Metadata Packet transmission
- Integrated CEC buffer/controller
- Compatible with DVI v.1.0, and HDCP v.1.3
- Video/audio inputs accept logic levels from 1.8 V to 3.3 V

**Digital video**
- Programmable two-way color space converter
- Supports RGB, YCbCr, and DDR
- Supports ITU656-based embedded syncs
- Auto input video format timing detection (CEA-861-D)

**Digital audio**
- Supports standard S/PDIF for stereo LPCM or compressed audio up to 192 kHz
- 8-channel uncompressed LPCM I²S audio up to 192 kHz

**Special features for easy system design**
- On-chip MPU with I²C master to perform HDCP operations and EDID reading operations
- 5 V tolerant I²C and HPD I/Os, no extra device needed
- No audio master clock needed for supporting S/PDIF and I²S
- On-chip MPU reports HDMI events through interrupts and registers

## FUNCTIONAL BLOCK DIAGRAM

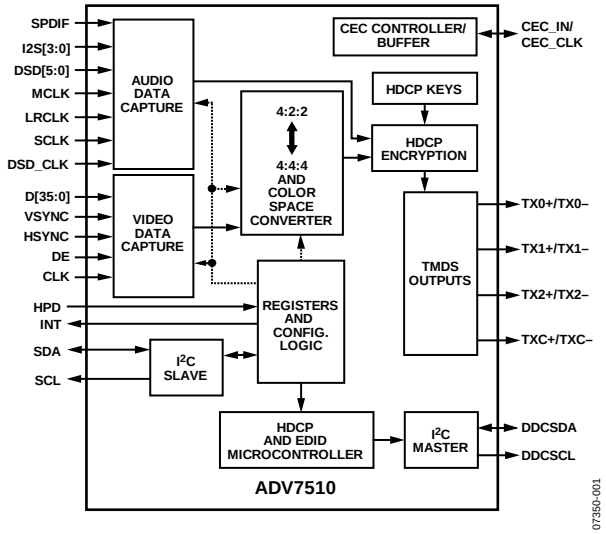



*Figure 1.*

## GENERAL DESCRIPTION

The ADV7510 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 and a DVI v.1.0-compatible transmitter, and supports all HDTV formats (including 1080p with 12-bit Deep Color). The ADV7510 also supports x.v.Color™, high bit rate audio, digital theater sound (DTS), and programmable AVI InfoFrames features.

With the inclusion of HDCP, the ADV7510 allows the secure transmission of protected content as specified by the HDCP v.1.3 protocol.

The ADV7510 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 ADV7510 is provided in a 100-lead LQFP surface-mount plastic package and is specified over the 0°C to +85°C temperature range.

*For more information about the ADV7510, email: flatpanel_apps@analog.com.*

**Rev. SpA**
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# NOTES

I²C refers to a communications protocol originally developed by Philips Semiconductors (now NXP Semiconductors).

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