ANALOG DEVICES

APIX2 Transmitter with HDMI and HDCP Support

Data Sheet

ADV7680

FEATURES

APIX®2 transmitter with HDCP
- High-bandwidth Digital Content Protection (HDCP) 1.4 support with internal preprogrammed HDCP keys
- Dual-channel encryption engine supports simple daisy-chain implementation for remote displays
- Independent encryption of video and audio
- Up to 3000 Mbps sustained downstream link bandwidth
- Up to 187.5 Mbps upstream link bandwidth
- Media independent interface (MII), serial port interface (SPI), I²C, and GPIO interfaces for sideband communication

High-Definition Multimedia Interface (HDMI®) receiver
- Supports all HDMI video resolutions up to the maximum APIX® video link bandwidth of 2.57 Gbps
- All mandatory and additional 3D video formats supported
- HDCP 1.4 decryption support
- Hardware controller for automated HDCP repeater functions across APIX and HDMI HDCP blocks
- HDCP repeater support, up to 24 KSVs supported
- Integrated CEC controller, CEC 1.4 compatible
- Adaptive TMDS equalizer
- 5 V detect and Hot Plug™ assert

ITU-R BT.656 support
- 8-bit ITU-R BT.656 interface with embedded timing
- 720p supported at 148.5 MHz clock rate

Audio support
- HDMI audio extraction support
- Advanced audio muting feature
- Supports multiplexed (TDM) I²S audio I/O
- On-chip SRC for synchronization to external master clocks

General
- Dual interrupt controller with APIX link status reporting
- Internal EDID RAM
- Any-to-any 3 × 3 color space conversion (CSC) matrix
- 64-lead LFCSP, 9 mm × 9 mm package

Qualified for automotive applications

APPLICATIONS

Automotive infotainment
Infotainment head units
Rear seat entertainment systems
Automotive media port applications
HDMI repeaters and video switches

SIMPLIFIED FUNCTIONAL BLOCK DIAGRAM

Figure 1.

For more information about the ADV7680, including the complete data sheet, contact your local Analog Devices, Inc., sales office at www.analog.com/sales.
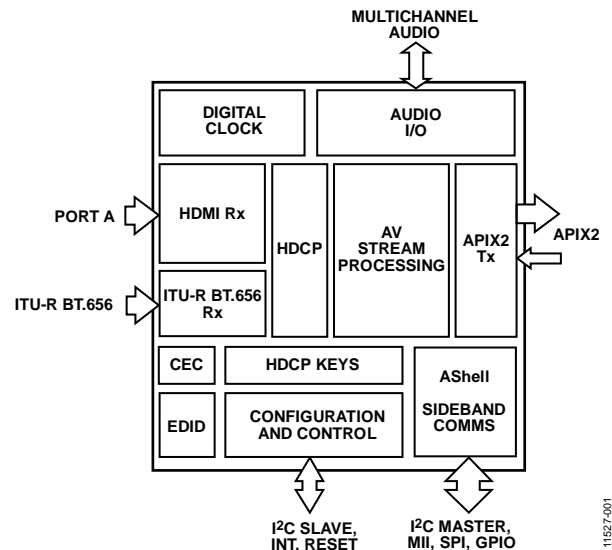
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NOTES

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

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