APIX2 Receiver with LVDS, HDCP, and MIPI Support

ANALOG DEVICES

Data Sheet

ADV7782

FEATURES

APIX2 receiver with HDCP
High-bandwidth Digital Content Protection (HDCP) 1.4 support with internal preprogrammed HDCP keys HDCP decryption of video and audio
HDCP repeater support
Supports 2 independent video streams
One TDM channel with support for up to 4 stereo pairs
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

LVDS receiver (OpenLDI)
85 MHz maximum clock frequency
Maximum resolution supported is WXGA
Supports receiving video in both 24-bit mode over 4 differential pairs, and 18-bit mode over 3 differential pairs

Dual MIPI CSI 2.0 transmitters
MIPI-A: clock and 4 data lanes
MIPI-B: clock and 2 data lanes

Video processing
Color space conversion
4:2:2 to 4:4:4 interpolation

Software driver
MISRA-C compliant software driver for automotive acceptability

General
Qualified for automotive applications
−40°C to +85°C temperature grade
100-ball, 9 mm × 9 mm, RoHS-compliant CSP_BGA package

APPLICATIONS

Automotive high end head unit
Automotive infotainment
Portable devices
The approved use of the ADV7782 device is limited to use cases where the ADV7782 data output is directly input to a processing unit

GENERAL DESCRIPTION

The ADV7782 is a receiver that is compatible with an APIX® or APIX2® serial data stream. The ADV7782 performs limited processing (color space conversion and interpolation 4:2:2 to 4:4:4), and forwards the data via MIPI® camera serial interface (CSI). Data from the LVDS input (OpenLDI) can also be routed through the same processing blocks. It supports a point-to-point connection topology, and supports HDCP repeater implementations with a key selection vector (KSV) list memory of 25 entries.

There are three primary video sources: LVDS OpenLDI, APIX Channel 0, and APIX Channel 1. These three primary video streams are input to a video switch matrix. Any two of the three streams can be selected and output from the switch matrix.

Of the two video channels output from the video switch matrix, one output channel is unprocessed, and the other output channel passes through a combination of an interpolation block (4:2:2 to 4:4:4) and a color space converter.

For more information about the ADV7782, including the complete data sheet, contact your local Analog Devices, Inc., sales office at www.analog.com/sales.
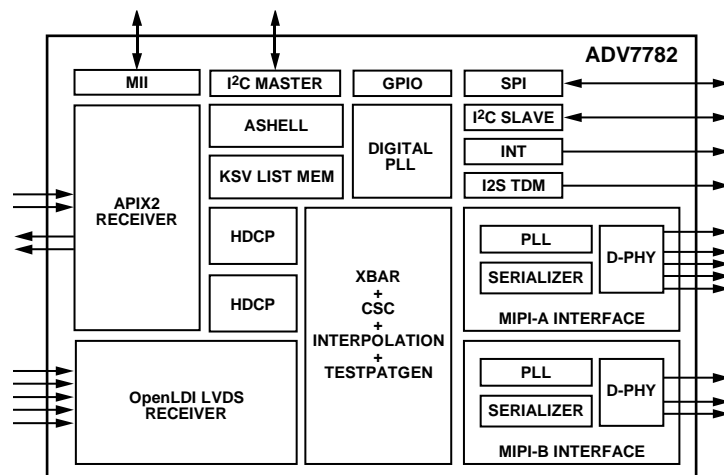
FUNCTIONAL BLOCK DIAGRAM

Figure 1.

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DOCUMENTATION 🔲

Data Sheet

- ADV7782: APIX2 Receiver with LVDS, HDCP, and MIPI Support Data Sheet

DESIGN RESOURCES 🔲

- ADV7782 Material Declaration
- PCN-PDN Information
- Quality And Reliability
- Symbols and Footprints

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NOTES

APIX® is a registered mark of INOVA Semiconductors GMbH.

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

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