Overview

Cadence® IP Factory delivers custom, synthesizable IP to support specific design requirements.

The Cadence DisplayPort Receiver IP is compliant with DisplayPort™ 1.2b and VESA® eDP™ 1.4, and supports the HDCP 1.3 as well.

The Cadence DisplayPort Receiver IP is a core that can be used in numerous digital video or audio solutions that incorporate a display panel with a video or graphics processor. Various applications of this core include embedded connectivity (device to device), monitors, projectors, and dongles.

The Cadence DisplayPort Receiver IP is a convenient, cost-effective solution characterized by superior performance, exceptional low power consumption and a small-sized die. Special test modes are also supported to facilitate embedded testing in SoC designs.

Supporting 6, 8, 10, 12, and 16bpc, the Cadence DisplayPort Receiver IP operates at 1.62 or 2.70Gbps link rate with 1, 2, or 4 main link lanes and with the AUX channel providing slave mode at 1Mbps. The core supports flexible resolution, refresh rate, colorimetry, and bit depth configurations for a variety of one or four lane options. Moreover, an embedded CPU provides full link training functionality.

The Cadence DisplayPort Receiver IP offers you the high-definition video transmission capabilities in a myriad of devices, today and in the future. Minimize internal development costs and save your time.

Cadence IP Factory offers comprehensive IP solutions that are in volume production, and have been successfully implemented in more than 400 applications.

Key Features

- Compliant with DisplayPort 1.2b, VESA Embedded DisplayPort 1.4, and the HDCP 1.3
- eDP 1.4 features include ASSR, fast training, panel self refresh, and backlight control with dynamic control signals
- Supports up to 48 bits per pixel and is compliant with CEA-861-E and VESA Display Monitor Timing standard
- Audio interface with audio clock recovery and sample ranges from 32kHz to 192 kHz
- Built-in analog and digital BIST and all standard test-patterns
- Supports SST (Single Stream) in RBR and HBR
Product Details

The Cadence **DisplayPort Receiver IP** can be applied in solutions incorporating a display panel with a video or graphics processor, which makes it a great choice for various digital video and audio applications.

Embedded CPU

The embedded CPU performs full link-training and simplifies user integration. As a result it eliminates the need to focus on DP protocol specific tasks of the user application, which makes it targeted to your specific needs.

Clock recovery

This part is responsible for recovering pixel clock from main-stream Mvid and Nvid embedded data with optional circuit provided for Spread-spectrum removal.

Audio clock recovery extracts Audio MCLK from Maud and Naud embedded data in order to provide a high quality, low jitter clock.

Content protection

The HDCP1.3 HW cipher is used for video and audio decryption. The authentication state-machine is managed by the embedded CPU. Moreover, a secured interface is provided for HDCP Keys loading, while ASSR is supported for eDP.

Application interface

There are three main interfaces used with joining IP and SoC. The APB interface is responsible for connecting the IP to the SoC system bus. The video parallel interface (which is composed of 48bit pixel data, VSYNC, HSYNC and DE) is used for video data output. The last one of the mentioned interfaces is the audio interface which outputs audio samples.

Cadence IP Factory

**Cadence IP Factory** can deliver various configurations of High-Definition Display IP to meet your design requirements.

For more information, visit [ip.cadence.com](http://ip.cadence.com)

Benefits

- Silicon-proven design validated in Cadence InterOp lab and in Plugfests, Passed CTS physical and link layer tests
- Easy integration with minimal application SW involved
- Low-power operation—gated clock and power-down options

Related Products

- S/PDIF Audio Encoder IP
- I2S Audio Encoder IP
- Color space converter (CSC)

Cadence Design Systems enables global electronic design innovation and plays an essential role in the creation of today’s electronics. Customers use Cadence software, hardware, IP, and expertise to design and verify today’s mobile, cloud, and connectivity applications. www.cadence.com

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