



CONEXANT

Single-Chip, High-Performance (DVI) Digital Video Transmitter

CX25894/5/6

DVI Compliancy and Dual Channel Support Numerous Applications

Conexant's broadband communications portfolio includes a comprehensive suite of semiconductor solutions that enable the digital home and information network. Compliant with the Digital Visual Interface (DVI) industry specification, the CX25894/5/6 family of high performance, single-chip transmitters offers single or dual link output. Supporting up to two independent concurrent channels and two serial interfaces, this device is well suited for desktop PCs or any application that drives digital or flat panel displays.

High-bandwidth Digital-Content Protection (HDCP) was developed to protect digital entertainment content flowing over the DVI interface. HDCP encrypts the transmission of digital content between the video source or transmitter – such as a computer, DVD player or set-top box – and the digital display, or receiver – such as a monitor, television or projector. Once authentication is established, the transmitter encrypts the data and sends it to the receiver for decryption.

Three versions of this DVI-Compliant transmitter are available. The CX25895/6 accepts and sends out different resolutions and independent content simultaneously.

CX25894 offers a single channel, single link DVI, supporting resolutions up to 1600 x 1200, 60 Hz vertical refresh (maximum).

CX25895 adds another independent channel and supports up to two single link 1600 x 1200 DVI outputs or a dual link output with a resolution to 2048 x 1536. Using the CX25895, you have the flexibility to enable two low-resolution DVI outputs or one high resolution flat panel monitor or DTV.

CX25896 builds upon the CX25895 but adds the industry standard high definition copy protection (HDCP 1.0).

The CX25894/5/6 is packaged in an 84-pin QFN (body: 12.0 mm x 12.0 mm, pin pitch 0.40 mm). All are pin compatible.



Distinguishing Features

- Two independent channels (CX25895/6), providing simultaneous operation at different resolutions
- Low, mid and high-end solutions for varied customer applications
- Lowest cost solution and component count requiring smaller layout space
- HDCP 1.0 copy protection to secure digital entertainment content over DVI
- Compatible with industry standard DVI receivers, DVI 1.0 compliant
- Programmable impedance matching to work with marginal or non-compliant receivers
- Pin compatibility among all series members

Feature Overview

	TV.out Encoder	HDTV Dual Link	DVI Links	HDCP	Concurrent Channels	Different Resolutions on each channel
CX25894	No	No	1	No	N/A	N/A
CX25895	No	Yes	2	No	Yes	Yes
CX25896	No	Yes	2	Yes	Yes	Yes

Part Number CX25894/5/6

Description DVI Transmitter

CX25894/5/6 Features

CX25894

- Single-Link DVI 1.0 Transmitter
- Programmable impedance matching
- Scalable low voltage graphics controller interface from 3.3v down to 0.8v
- DVI data rate from 25 MHz to 165 MHz
- DVI resolutions from 640 x 350 to 1600 x 1200 (60 Hz refresh)
- Single-ended or differential clocking
- Multiple industry-standard digital input formats:
 - 15/16-bit RGB multiplexed
 - 24-bit RGB multiplexed (standard and alternate)
- Serial data in transmission minimized differential signaling (TMDS) output
- Programmable and pin-based power down modes
- Generates half clock pattern and pseudo-random sequence pattern internally
- Hot-plug detection of flat-panel (FD) monitor
- 2-wire serial programming interface

CX25895

Same features as the CX25894 plus:

- Dual-link DVI supports DVI resolutions from 1600 x 1200 to 2048 x 1536 (maximum)
- Two simultaneous concurrent DVI links (same content) up to 1600 x 1200
- Two concurrent DVI links (different content) up to 1600 x 1200
- High-Resolution DVI 1.0 Support
- 1080i, 720p, 480p ATSC resolutions

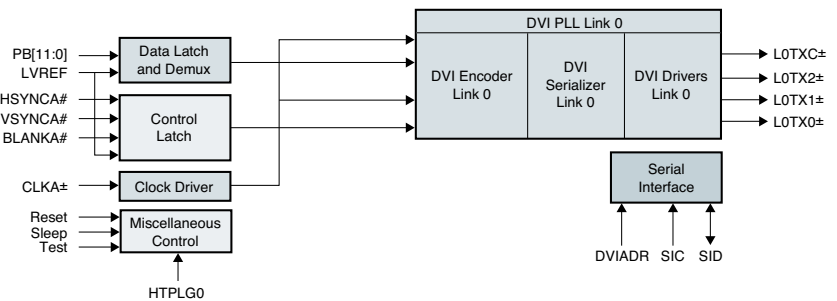
CX25896

Same features as the CX25895 plus:

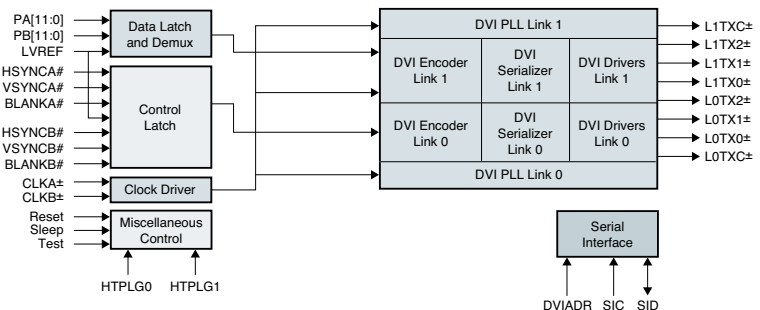
- High-bandwidth Digital Content Protection (HDCP) support

CX25894/5/6 Applications

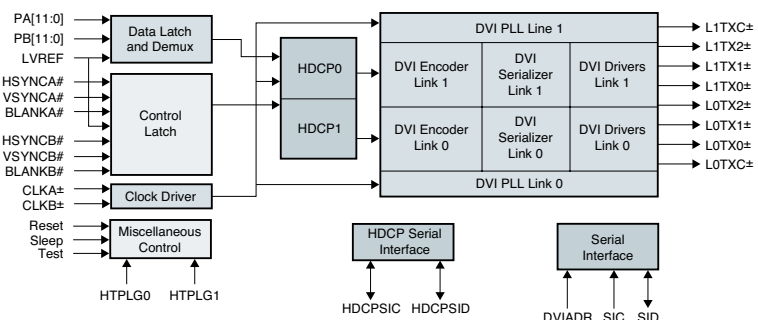
- Notebook PC
- Graphics card
- Set-top Box
- Game console
- DVD player



CX25894 Block Diagram



CX25895 Block Diagram



CX25896 Block Diagram