



# PCI Express Video and Broadcast Audio Decoder

CX23885

Conexant's portfolio includes a comprehensive suite of semiconductor solutions for communications and consumer applications.

The CX23885 family device brings Conexant's long heritage of audio and video capture solutions to systems that enable PCI Express™ bus architectures. The device integrates all the functions required to perform television and external A/V capture on personal computers or consumer electronic devices.

The integrated worldwide video decoder and audio decoder can be used for a high-performance, cost-effective, basic analog television capture, or can be used as the base for more complex multiple tuner configurations. The device can support capture of two simultaneous digital television transport streams, or a combination of analog and digital capture. The device can be used in conjunction with Conexant's tuners and demodulators to create hybrid tuner cards that support ATSC, DVB-S, DVB-S2, and DVB-T content.

The device is packaged in a 14x14 mm, lead-free, 128-pin Exposed Thin Quad Flat Pack (ETQFP).

## Highly Integrated

This latest generation of devices integrates anti-aliasing, noise rejection filters, and Automatic Gain Control (AGC). Quality video is accomplished by using 10-bit video Analog-to-Digital Converters (ADCs), a full 10-bit video data path, a two dimensional adaptive comb filter for NTSC and PAL video for improved image quality, horizontal and five-tap vertical scaling, and hue, brightness, saturation, and contrast controls.

For high-quality audio, Conexant provides ADCs for stereo audio capture. A minimum of 16-bit audio resolution through the entire audio data path ensures high-fidelity audio, whether it comes from the integrated broadcast audio decoder, the sigma-delta ADCs, or an external serial audio source. The audio path includes an automatic volume control function and two assignable stereo processing units for control of volume, three-band equalization, and balance. The level of audio and video integration provided by the CX23885 removes the need for additional broadcast audio decoding and processing chips or external sound demodulation chips. It also reduces the overall Bill of Materials (BOM) for the system developer, without compromising audio and video performance. To enable faster time to market, Conexant offers multiple CX23885 PCI Express and ExpressCard reference designs. All of the reference designs include schematics, layout files, and evaluation boards with production-ready device drivers.

Conexant's fourth-generation device represents another landmark in the company's video innovation timeline. Additional pioneering developments include creating the PCI video decoder category. The company also introduced the industry's first single-chip MPEG audio/video codec, delivered the world's most widely deployed MPEG audio/video encoder, and launched the first single-chip video encoder and digital video interface (DVI) transmitter.



## Distinguishing Features

- PCI Express 1.0a compliant
- Worldwide audio and video decoding
- Automatic video and broadcast audio standard detection and configuration
- Flexible video input MUX supporting composite, S-Video, and component inputs with integrated anti-alias filtering
- Integrated sigma-delta stereo audio ADCs with 4:2 MUX
- Audio sample-rate converters on all inputs and outputs
- Two MPEG transport stream ports—serial or parallel interfaces
- Support for the following audio formats: Stereo, mono, dual language (mono), tri language (Trivox)

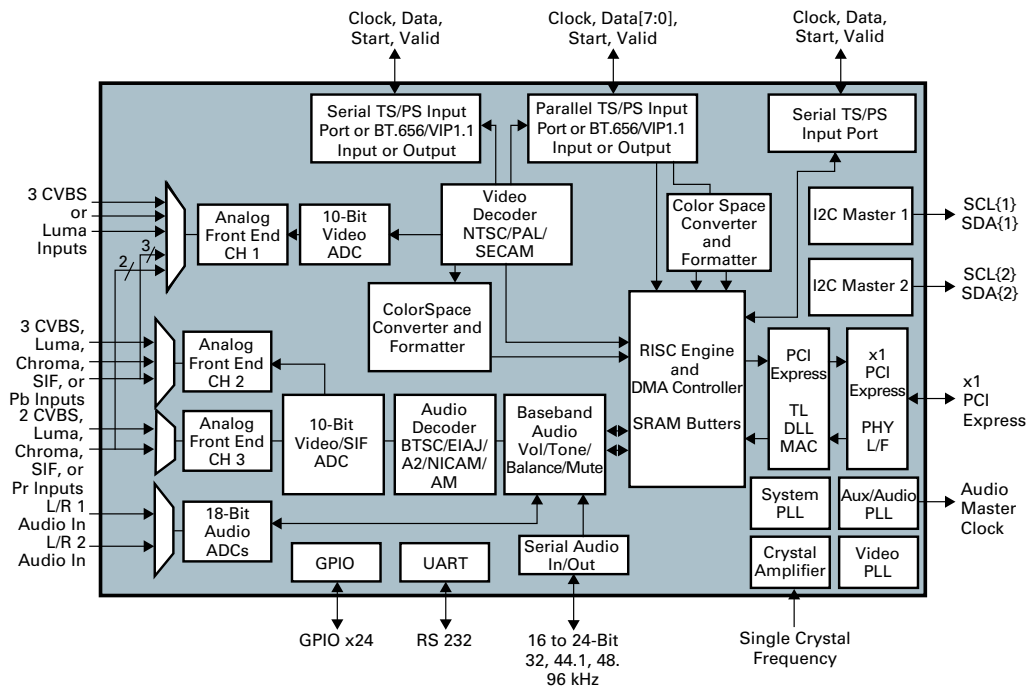
**Part Number** CX23885

**Description** PCI Express Video and Broadcast Audio Decoder



## Features

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- Audio sample-rate converters on all inputs and outputs
- Two MPEG transport stream ports — serial or parallel interfaces
- Support for the following audio formats: stereo, mono, dual language (mono), tri language (Trivox)
- Two program stream inputs — serial or parallel interfaces
- Two I<sup>2</sup>C master ports (two ports are required for a two-tuner design to isolate I<sup>2</sup>C transactions to reduce noise)
- Macrovision 1.0 detection compliant
- Programmable Vertical Blanking Interval (VBI) data slicer for data services such as closed caption, Wide Screen Signaling (WSS), Gemstar 1x and 2x, and program guides
- Infrared transmitter and receiver logic
- High-quality multi-tap horizontal and vertical image scaler for decoded video or 4:2:2 sources
- ITU-R BT.656 input port
- ITU-R BT.656 output port
- I<sup>2</sup>S in (line-in audio)
- I<sup>2</sup>S out
- Auxiliary Phase Locked Loop (PLL) clock for general use



**CX23885 Block Diagram**

## Conexant Product Portfolio

The company's broad portfolio of semiconductor products also includes client-side DSL, cable, and dial-up modem solutions; fiber optic system-on-chips; broadcast video encoders and decoders; digital set-top box components and systems solutions; and IEEE 802.11a/b/g/n-compliant WLAN chipsets. Additional products include a complete line of asymmetric and symmetric DSL central office solutions, which are used by service providers worldwide to deliver broadband data, voice, and video over copper telephone lines.

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