1010101010101010101010101010101010
1010101010101010101010101010101010

CONEXANT

USB Video and Broadcast Audio Decoder

CX2310x

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

The CX2310x brings Conexant's long heritage of audio and video capture solutions to systems that enable univeral serial bus architectures. The family of devices integrates all the functions required to perform television and external A/V capture on personal computers or consumer electronic devices. The device family includes CX23100, CX23101, and CX23102.

The CX2310x decoders enable the capture of analog and digitial broadcast streams on personal computers through an integrated Universial Serial Bus (USB) interface. The devices can capture a single analog stream, two simultaneous digital television transport streams, or a combination of analog and digital programming. In addition, analog, hybrid and combo configurations may be used in conjunction with hardware MPEG encoders.

Highly Integrated

This latest generation of devices integrates anti-aliasing, noise rejection filters and automatic gain control (AGC) and also includes an integrated analog IF demodulator compatible with low IF tuners. Quality video is accomplished by using 10-bit video ADCs, a full 10-bit video data path, and a horizontal and 5-tap vertical scaling, hue, brightness, saturation, and contrast controls.

For high-quality audio, we have analog to digital converters for stereo audio capture and a minimum of 16-bit audio resolution through the entire audio data path which ensures high fidelity audio, whether it comes from the integrated broadcast audio decoder or the ADCs. 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 CX2310x 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.

Distinguishing Features

- USB 1.1/2.0 compliant bus

- Advanced consumer IR functionality for controlling set-top boxes

- Demodulator low or high IF for direct IF tuners

- Worldwide audio and video support

- 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

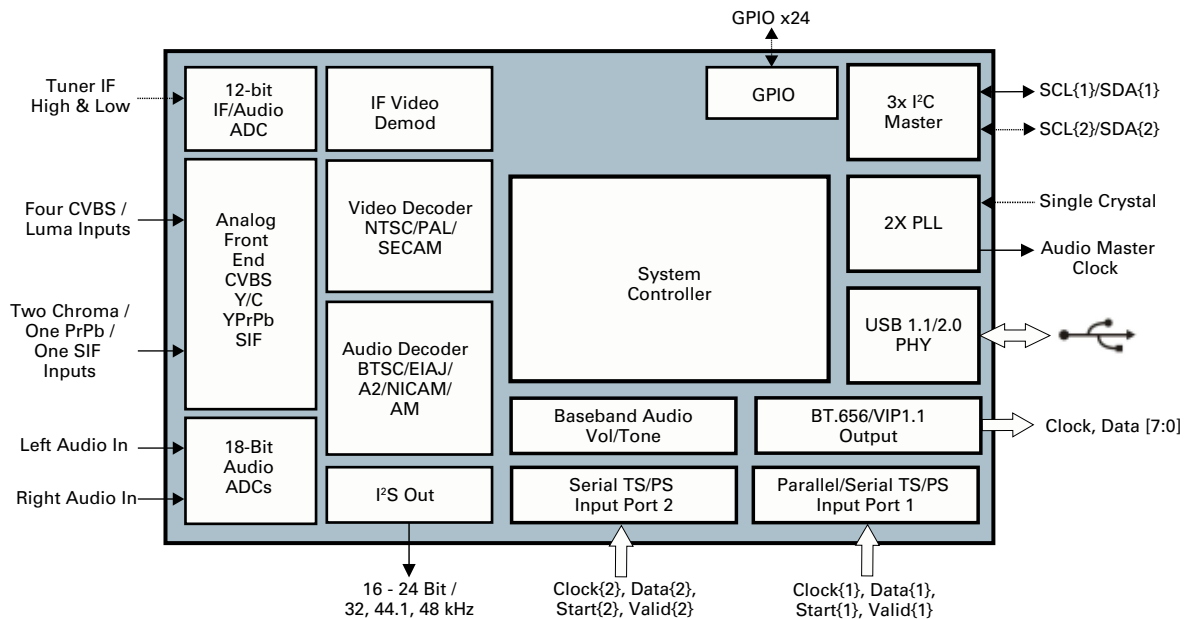- Two MPEG transport stream ports: Serial or Parallel interfaces

CX2310x Feature Comparison Chart

Features	CX23100	CX23101	CX23102
USB interface	✓		✓
Broadcast Audio/Video		✓	✓
Integrated Analog IF Demodulator		✓	✓
Transport Stream Interface	✓		✓

Part Number CX23100, CX23101, CX23102

Description USB Video and Broadcast Audio Decoder

Features

- Support for the following audio formats: Stereo, Mono, Dual Language (Mono), Tri Language (Trivox)

- Three I^{2}C master ports (Two ports are provided for a two tuner design to isolate I^{2}C transactions to reduce noise.)

- Macrovision 1.0 Detection Compliant

- Support for the following video formats: Composite, S-Video, 480i YPrPb, RGB Packed, YCrCb Packed, 10-bit Packed, and YCrCb/YUY2 Format

- Advanced consumer IR functionality enables systems to receive, learn, and blast IR signals

- High-quality multi-tap horizontal and vertical image scaler for decoded video or 4:2:2 sources

- I^{2}s out

- Auxiliary Phase Locked Loop (PLL) clock for general use

- Integrated analog demodulator compatible with direct IF tuners

- USB 1.1/2.0 compliant bus

- Worldwide audio and video decoding

- Automatic video and broadcast audio standards 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: Parallel and Serial

- Two program stream inputs accommodating serial or parallel interfaces

- Programmable VBI data slicer for data services such as closed caption, WSS, and program guides such as Gemstar 1x & 2x

- ITU-R BT.656 output port

CX23102 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.

CONEXANT