

# MPEG-4 AVC/H.264 Video Decoder

CX2418x

Conexant's portfolio includes a comprehensive suite of semiconductor solutions for broadband communications, enterprise networks, and the digital home. The CX2418x is the world's first family of HDTV video decoder ICs fully compliant with the MPEG-4 advanced video coding (AVC) standard, also known as ITU H.264. The CX2418x decoder supports Main Profile and High Profile up to Level 4.0, with high-definition video resolutions up to 1920 x 1080.

In addition to the AVC/H.264 video decoder core, the CX2418x family includes an integrated ARM926EJ-S CPU, high-performance 16/32-bit DDR400 SDRAM memory controller, transport stream interface and processor, MPEG-2 MP@HL video decoder, and a display controller that supports both standard definition and high-definition digital outputs.

The CX2418x provides a simple glueless interface to Conexant system ICs. A serial transport stream input accepts the compressed video input stream and a PCI or a 16-bit local bus provides the control interface. A CCIR656 (standard definition) or SMPTE274/SMPTE296 (high definition) interface outputs the decoded video pictures.

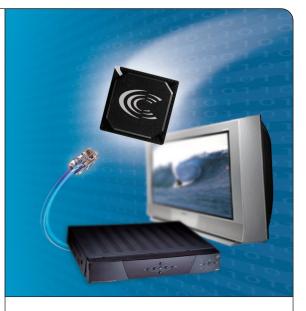
Decoding of 1920 x 1080 resolution high-definition video is efficiently implemented in hardware and requires less than 32 MB of memory. The CX2418x family includes advanced technologies such as a de-blocking filter, stream error detection and recovery features, and motion estimation/compensation techniques that enhance compression performance and video quality.

With the introduction of the CX2418x product family, Conexant is able to provide a complete end-to-end set-top box (STB) solution that supports the latest in advanced modulation and compression technologies and enables broadcasters and service providers to deliver significantly more content over the existing infrastructure.

## **Hardware/Software Development Platform**

The CX2418x IC family is integrated into a complete high-definition television (HDTV) STB reference development system that features the CX2417x HDTV main system processor and other Conexant ICs to enable rapid development of an HD/H.264 IP STB. A complete standard-definition television (SDTV) reference platform is also available to enable SD/H.264 IP STB development. A compact daughter board with the CX2418x and DDR memory devices is also available.

The reference platform provides a complete set of STB low-level drivers based on Nucleus+, VxWorks®, and Linux operating systems. A mature and robust hardware abstraction layer is assured by re-use of core driver libraries developed over four generations of MPEG ICs. Conexant provides a complete development software solution that has been tightly integrated with a third-party tool chain environment and offers a 90-day evaluation license for Nucleus+ and VxWorks runtime libraries.



## **Distinguishing Features**

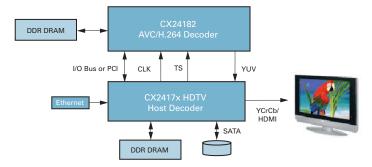
- Fully compliant MPEG-4 AVC/H.264 High Profile@Level 4.0 video decoder
- MPEG-2 MP@HL video decoder
- 16/32-bit DDR400 memory controller
- High-performance ARM926EJ-S CPU with ARM Jazelle® technology
- 16-bit I/O and 32-bit PCI buses
- SMPTE 274 / SMPTE 296 highdefinition digital video interface
- CCIR656 standard definition digital video interface
- Triple data encryption standard (DES) encryption/decryption of transport stream interface
- Advanced de-blocking filter and error concealment features

Part Number CX2418x

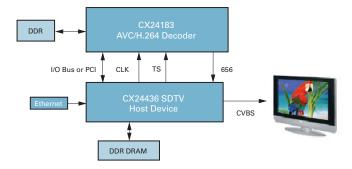
**Description** MPEG-4 AVC/H.264 Video Decoder

The company's broad portfolio of semiconductor products also includes client-side DSL and cable modem solutions, home network processors, broadcast video encoders and decoders, digital STB components and systems solutions, and dial-up modems. In addition to its IEEE 802.11a/b/g-compliant wireless local area network (WLAN) chipsets, software, and reference

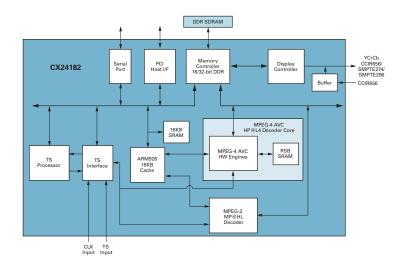
designs, Conexant offers a suite of networking components that includes solutions for applications based on HomePlug® and HomePNA™. Additional products include a complete line of asymmetric and symmetric DSL central office solutions, which are used by service providers worldwide to deliver broadband data, voice, and video over copper telephone lines.



HDTV with AVC/H.264 STB System Diagram



SDTV with AVC/H.264 STB System Diagram



CX2418x Part Number & Feature Matrix					
Part Number	AVC/H.264 Main Profile	AVC/H.264 High Profile	SDTV Interface	HDTV Interface	MPEG-2 Decode
CX24182		Х	Х	Х	Х
CX24183		Х	Х		Х

### MPEG-4 AVC/H.264 Video Decoder Block Diagram

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