



# Low-Cost, High-Quality MPEG Decoder for FTA and FTA/CI DVB-S Set-Top Boxes

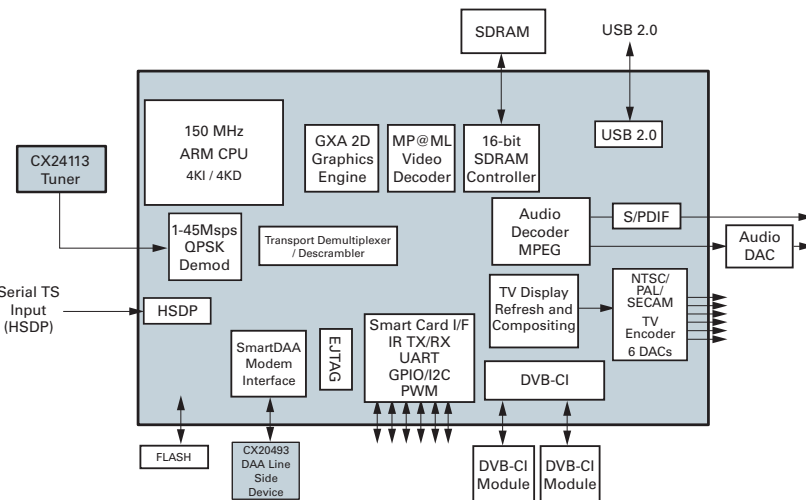
## CX24302

Conexant's portfolio includes a comprehensive suite of semiconductor solutions for broadband communications, enterprise networks, and the digital home. Conexant's Single-Chip IC set-top box (STB) system solution features all the major subsystems required to implement the core system and decoder electronics of a highly cost-effective solution providing high quality performance targeted to the advanced Free-To-Air (FTA) satellite market.

The CX24302 offers a highly integrated, cost effective solution for advanced FTA STBs featuring an MPEG-2 MP@ML decoder, integrated 1-45 Msp/s quadrature phase-shift keying (QPSK) demodulator, a 32-bit RISC CPU, a 2D graphics accelerator, TV encoder, a video/graphics display compositing controller, 6 integrated video DACs, and a set of peripheral I/O ports for STB front and back panel connectors. The CX24302 also features expansion capability via a fully integrated USB 2.0 port, which includes support for On-The-Go applications as well as dual digital video broadcast-common interface (DVB-CI) support, and support for a return channel via a host-controlled V.92 modem.

With the integrated high-speed data port (HSDP) that easily interfaces to a variety of broadband front-ends the CX24302 IC can also serve as a common back-end platform for terrestrial and cable applications. For a complete system hardware design, the only additional components required are a tuner, audio DACs, SDRAM, and flash memory ICs.

This high level of integration delivers the low-cost system bill-of-materials (BOM) and high-feature MPEG solution. Integrating the CX24302 with the Conexant CX24113 tuner provides a cost-effective solution for satellite systems. The CX24302 and CX24113 are available in a fully manufacturable reference design package featuring complete schematics, layout, BOM information, and a complete software solution, including electronic program guide (EPG) and drivers.



**CX24302 Block Diagram**

### Distinguishing Features

- MPEG-2/DVB broadcast service decoder for worldwide FTA and FTA/CI markets
- High-performance 32-bit 150 MHz ARM946 CPU
- High-performance 2D graphics rendering acceleration
- High-performance 16-bit SDRAM memory controller architecture
- Integrated satellite Blind Scan function
- 256-pin PBGA package
- Bidirectional HSDP
- USB 2.0 with On-The-Go support
- DVB-CI support
- SmartDAA® modem support
- Complete reference design package complete software solution

**Part Number** CX24302

**Description** Low-Cost, High-Quality MPEG Decoder for FTA and FTA/CI DVB-S Set-top Boxes



### Full-Featured Development Platform

The CX24302 is integrated into a fully engineered STB reference design which also features Conexant's award winning CX24113 DVB-S tuner. This reference design provides a low-cost system bill of materials (BOM) and reduces overall development time and cost.

The hardware platform comes equipped with a fully functional Conexant software solution, including license free operating system, application software, support for third party middleware, EPG and all required drivers providing a complete STB solution. A mature and robust hardware abstraction layer is assured by re-use of core driver libraries developed on early generation ICs which also minimizes development time by ensuring reuse of software developed on previous Conexant platforms.

The reference development platform STB hardware is based on existing reference design platforms and is designed to be fully manufacturable.

### Conexant's Product Portfolio

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<sup>SM</sup> and HomePNA<sup>TM</sup>. 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.

### CX24302 Features

- MPEG-2 MP@ML video decoder supporting NTSC and PAL CCIR601 image resolution
- MPEG-1/MPEG-2 audio decoder
- MPEG-2/DVB, transport stream demultiplexing
- NTSC/PAL/SECAM TV encoder supporting simultaneous CVBS, YC, and RGB/YPrPb analog video output signals
- NTSC/PAL auto conversion
- 150 MHz 32-bit ARM946 CPU with 4 KB (I&D) caches
- 16-bit SDRAM support
- RS-232
- I2C
- 4/8 bpp on-screen display (OSD) support
- DiSEqC 2.x
- NDS ICAM support (optional)
- Smart card interface
- Sony/Philips Digital Interface Format (S/PDIF) Audio Output
- Dual DVB-CI support
- Integrated USB 2.0 with On-The-Go support
- Optional Macrovision<sup>®</sup> 7.1 support
- SmartDAA modem device support
- SCART support
- Programmable Flash memory Interface
- JTAG
- Infrared transmit/receive

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