



Integrated VDSL2 CPE Gateway Chipsets

CX96xxx - VDSL2 Chipset Family

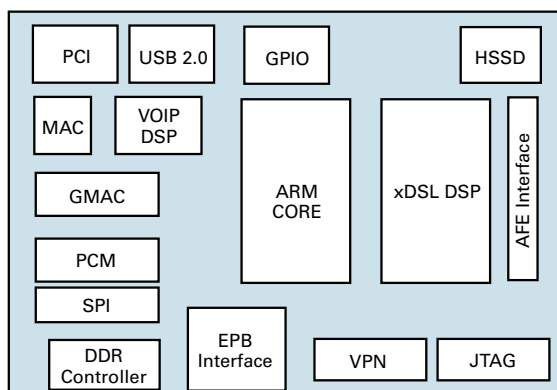
Conexant's portfolio includes a comprehensive suite of semiconductor solutions for broadband communications and the digital home.

The CX96xxx chipset family enables next-generation, wireless VDSL2 gateways, VDSL2 VoIP Integrated Access Devices (IADs), and VDSL2 bridges. This chipset includes a highly integrated Analog Front End (AFE) and a single chip ARM™ based Network Processor (NP), a flexible xDSL DSP core and a field-proven Voice DSP engine.

Key features include:

- Integrated high performance ARM™ network processor core with routing and switching packet accelerator engine that enables up to one gigabit data throughput
- Dedicated Voice Digital Signal Processor (DSP) which frees up processing power for other applications while supporting two complete VoIP channels
- Flexible xDSL DSP core architecture available in 30MHz, 17MHz bandwidth and 2-pair bonded configurations enabling cost-optimized products for Fiber-To-The-Building (FTTB), Fiber-To-The-Node (FTTN), and CO deployments, respectively
- Fully compatible with legacy ADSL/2/2plus applications enabling the world's most interoperable ADSL/2/2plus fallback capabilities

CX96xxx devices include a wide variety of interfaces that support complementary home networking technologies to provide a complete system solution for xDSL gateways. The CX96xxx SoCs seamlessly integrate with Conexant's SmartDAA and Subscriber Line Interface Cards (SLIC)/codec chipsets, providing manufacturers a single-source solution for low-cost turnkey triple play applications. Interfaces such as PCI and GMII are also supported to enable emerging home distribution technologies such as Multimedia over Coax Alliance (MoCA®), HomePNA™ specification 3.0 and HomePlug® A/V.



CX96xxx Block Diagram



Distinguishing Features

- Flexible VDSL2 DSP core architecture, delivering profiles 8x, 12x, 17a and 30a with long reach
- 2 pair VDSL2 bonding
- ADSL/ADSL2/ADSL2plus fallback capability
- Two VoIP channels running in internal voice DSP
- Supports up to 4 VoIP narrowband channels or 2 VoIP wideband channels
- Enhanced high performance ARM network processor core
- 16/32-bit DDR-1 interface
- 32-bit x 33MHz Peripheral Component Interconnect (PCI)
- Gigabit Media Independent Interface (GMII) with Ten-Bit Interface (TBI) and Media Independent Interface (MII) modes
- MII in master or slave mode
- ULPI interface for USB 2.0 host/device applications
- Serial and parallel flash support
- Up to 2GB NAND flash support
- HW engine handling all layer 2 switching and layer 3 routing including Network Address Translation (NAT)
- HW VPN engine supporting DES, 3DES, AES, SHA-1, SHA-256 and MD5 operations

Part Number CX96629, CX96429, CX96420

Description VDSL2 IAD Chipsets



Chipset	Profile 30a	Profile 17a	Profile 12x	Profile 8x	Voice	Gateway	Bonding
CX96629			X	X	X	X	X
CX96429	X	X	X	X	X	X	
CX96420	X	X	X	X		X	

Product Features

- Support for VDSL2 (G.993.2) with ADSL/ADSL2/ADSL2plus fallback (G.992.1, G.992.2, T1.413, G992.3, G.992.5)
- Integrated, field-proven xDSL DSP core architecture delivering profiles 8x, 12x, 17a, 30, long reach and VDSL2 pair bonding
- 16/32-bit DDR-1 interface
- Integrated 10/100/1000 Ethernet gigabit MAC with GMII, MII and TBI interfaces
- Integrated 10/100 Ethernet MAC with MII interface
- Integrated PCI interface with 32-bit x 33 MHz
- USB 2.0 interface via ULPI with host and device mode capability
- External Parallel Bus (EPB) provides support for NAND flash devices along with host interface mode for external host control
- Support for parallel flash and serial flash
- Integrated Voice DSP engine supports up to two VoIP channels with HW echo cancellation
- PCM interface to external Conexant's single- or dual-channel industry standard SLIC/Codec integrated devices (CX20560 & CX20559) or industry standard SLIC/codec devices
- Interface to lifeline backup using Conexant's cost effective SmartDAA FXO technology
- Optimized power management with support for dying gasp

- Support for DSLHome™ including TR-064, TR-068, TR-069, TR-098, TR-104, TR-106, TR-110, TR-111, TR-124, TR-133
- HW VPN Engine supporting DES, 3DES, AES, SHA-1, SHA-256 and MD5 operations
- Memory and feature optimized binary and source software releases for targeted deployments
- Stateful Packet Inspection (SPI) firewall and Network Address Translation (NAT) security solution
- ATM SAR engine supporting Unspecified Bit Rate (UBR), Constant Bit Rate (CBR) and other service classes
- Common customer development environment and tools across ADSL to VDSL2 products

Applications

- VDSL2 17 MHz or 30 MHz bridges
- VDSL2 17MHz or 30 MHz gateways
- Wireless VDSL2 17 MHz or 30 MHz gateways
- VDSL2 17 MHz or 30 MHz voice gateways
- VDSL2 12 MHz pair bonded voice gateway

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; and digital set-top box components and systems solutions. 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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