

Embedded ARM Processors

ECONA CNS21XX Connected Home and Office Processors

Product Brief



OVERVIEW

The ECONA CNS21XX integrates a high performance ARM CPU Core with a rich feature set delivering a highly flexible, scalable and comprehensive SoC solution for network-based connected multimedia devices. This highly optimized SoC provides an ideal platform for low-cost, low-power, high-performance retail and home network connected devices. The CNS21XX family provides developers with an easy-to-use development environment with Linux operating system support, pre-ported applications and drivers for multimedia peripherals.

FEATURES

32-bit ARM Core

- Higher performance ARM922-compatible RISC (with 8K I-cache, 8K D-cache) and MMU support
- Available in 200-250 MHz versions
- Advanced system bus architecture
- Supports TRACE32 and/or Multi-ICE JTAG debugging interfaces
- Built-in intelligent power management for normal and power-saving mode of operations
- Support IRQ/FIQ interrupt modes
- Support little-endian ordering
- TCP/UDP/IP header checksum offload

External Interfaces

- Support 8-bit NOR flash memory, and SPI serial flash booting
- Support 16-bit wide DDR, and self-refresh mode
- Support up to 4-banks of asynchronous 8/16-bit SRAM interface
- 8 channel configurable DMA controller for memory-to-memory, memory-to-peripheral and peripheral-to-peripheral transfers

I/O and Peripheral Interfaces

- 32-bit 66/33 MHz PCI v.2.2-compliant host bridge for up to 2 PCI devices
- Embedded 10/100/1000M MAC providing one RGMII/MII/Reverse MII interface for external transceiver
- Embedded 10 Base-T/100 Base-TX PHY with Auto MDI/MDIX
- Embedded two-port USB2.0-compliant host PHY and EHCI/OHCI controller
- Embedded one-port USB 2.0-compliant device PHY and controller
- PCM supports up to 4 external voice codec/SLIC's with Tx/Rx buffers, master/slave modes and IDL/GCI clocking modes
- Cardbus slot with hot insertion and remove, compliant to PCI Hot Plug Spec v1.0
- Support up to two IDE devices, compliant to PIO, DMA (mode 0~2), and Ultra DMA (mode 0~5) modes
- Two high-speed 16C550-compliant UART, with DMA hardware
- 8/16-bit external I/O interface
- Serial interfaces: Two Wire Interface (TWI), I2S (with DMA)
- Supports up to 50 GPIOs

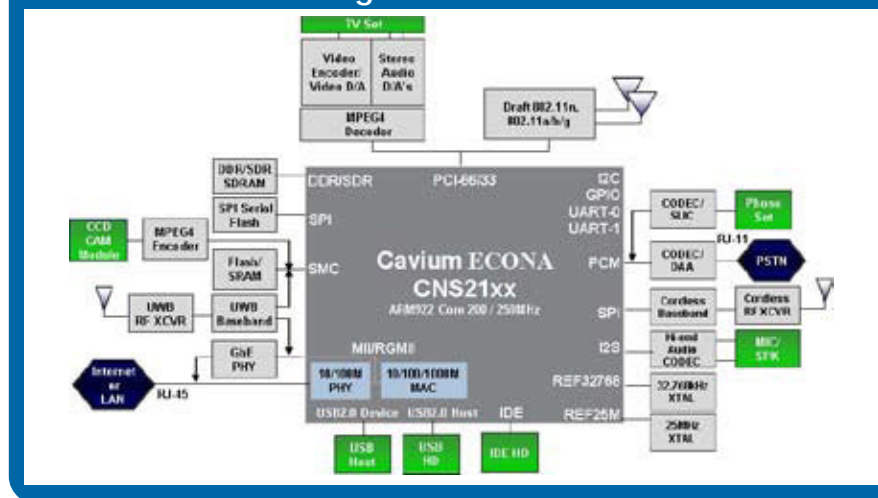
BENEFITS

- Hardware data storage accelerator expands more throughputs between high-speed USB 2.0 device and IDE interfaces

Reduced BOM cost with essential interfaces for next -generation networking equipment

- Low-cost NOR boot option
- Two high-speed USB 2.0 host ports enable printer, storage and user device connectivity
- Single high-speed USB 2.0 device provides PC connectivity and external data communication with external USB 2.0 Host.
- Diverse serial interfaces support for data, voice and audio communication – two wire interface, SPI, I2S, PCM
- Embedded FE PHY enables internet access
- Embedded IDE enables data storage device
- Intelligent power management design
- Low-power consumption: within 1.25 watts

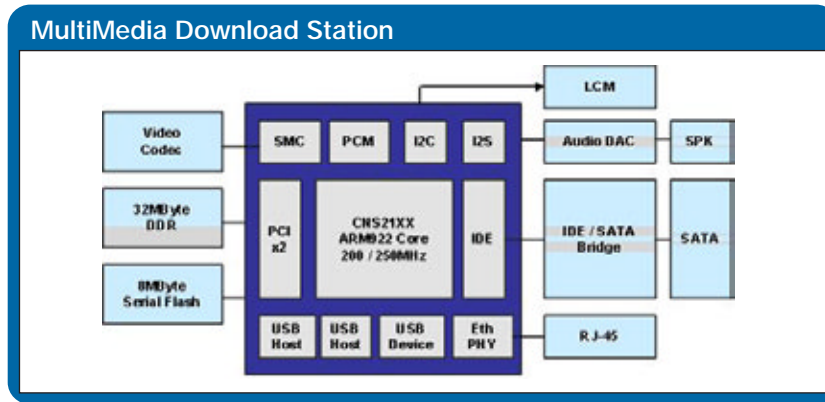
CNS21XX - Block Diagram



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CNS21XX APPLICATIONS

- Software VoIP ATA/IP Phone, Cordless-over-IP
- Network Storage/Download Station (USB/IDE)
- MIMO Access Point
- Wireless IP Camera/Surveillance DVR
- Internet Stereo Radio Tuner
- UWB Device/Host Wire Adapter (DWA/HWA)
- Network Processor for Smart/Management Gigabit Ethernet Switch Controller
- Serial Server (RS232-to-Ethernet/802.11)

SOFTWARE SUPPORT

- Embedded Linux BSP
- Technical Documents (data sheets, user guides, application notes, and test reports etc.)
- Reference design schematics

ECONA CNS21XX - Product Family

Device	Part Number*	SPI Serial Flash	Parallel Flash	DDR/SDR	Memory I/O	PHY + MAC 10/100M	MAC only RGMII/MII	Interfaces					PCI 2.2 Host	Package	
								USB Host 1.1/2.0 PHY /CTL	USB Device 1.1/2.0 PHY /CTL	IDE	I2S & I2C	PCMC			UART
CNS2131	CNS2131-XXXFP128-Option Code	Y		Y		Y		2 ports			Y	Y	2 ports		PQFP-128
CNS2132	CNS2132-XXXFP128-Option Code	Y		Y		Y		2 ports	1 port		Y		1 port		PQFP-128
CNS2133	CNS2133-XXXBG269-Option Code	Y	Y	Y	Y	Y		2 ports	1 port	Y	Y	Y	2 ports	32-bit/66 MHz up to 2 devices	LFPGA-269
CNS2181	CNS2181-XXXFP128-Option Code	Y		Y			Y	2 ports					2 ports		PQFP-128
CNS2182	CNS2182-XXXBG269-Option Code	Y	Y	Y	Y		Y	2 ports		Y	Y	Y	2 ports	32-bit/66 MHz up to 2 devices	LFPGA-269

*Part Number Options:

XXX = Device Speed Grade (20 0 = 200 MHz, 250 = 250 MHz)