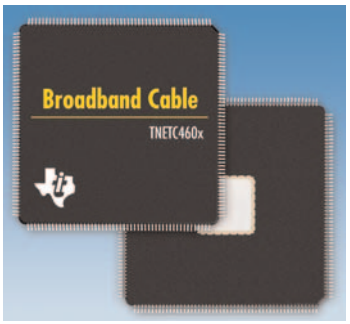
Product Brief

TNETC460x: High-Performance Single-Chip DOCSIS® 2.0 Cable Modem Chip



Texas Instruments' (TI's) TNETC460x is a high-performance cable modem chip with integrated functionality to reduce bill of materials (BOM) costs. Based on a MIPS RISC processor core, the TNETC460x has the processing power to serve in small office/home office (SOHO) broadband network controller applications or as a residential gateway.

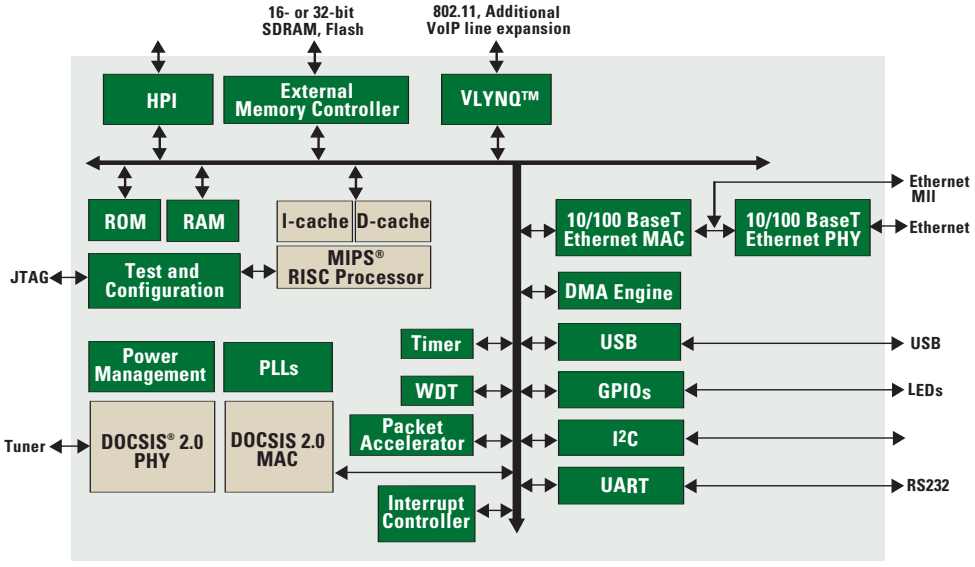
Fully compliant with DOCSIS® standards, the TNETC460x integrates the DOCSIS PHY and MAC. In addition, a range of peripheral interfaces are included on-chip, including 10/100 Ethernet and USB 1.1. Through a six-pin VLYNQ™ high-speed serial interface, the TNETC460x has glueless access to 802.11 wireless local area network (WLAN) devices, digital signal processors (DSP) or other chips offering a wide variety of functionality.

The TNETC460x has a flexible external memory interface (EMIF) to connect with flash and SDRAM.

Software developed for TI's previous-generation cable modem chips, including the TNETC4401, is compatible with the TNETC460x, minimizing development risks and speeding new products to market. Field-approved software on the TNETC4401 will gain fast approval with the TNETC460x chip, giving manufacturers a low-risk path to the market.

Key Benefits

- Integrated high-performance RISC processor
- Supports DOCSIS® 2.0 with A-TDMA and S-CDMA functionality
- Flexible memory interface enabling OEMs with high-performance or low-cost choices, depending on the application
- Lowers system BOM costs through increased integration
- Integrated USB 1.1 on-chip
- Contains VLYNQ™ high-speed serial interface, enabling glueless expansion for additional interface options to TI WLAN and/or DSPs
- Built with software and architecture similarity to previous-generation TI Cable ICs, reducing design risks and shortening time-to-market



TNETC460x Block Diagram

Key Features

- MIPS RISC processor core
- DOCSIS® 2.0-compliant MAC and PHY, including Annex F (European specification addition) and Annex J (Japan)
- DOCSIS and Euro-DOCSIS 1.1/1.0-compliant MAC and PHY
- Flexible external memory interface controller (EMIF)
- 10/100 BaseT Ethernet MAC and PHY
- MII interface for external Ethernet PHY or Switch
- Flexible USB function controller (integrated link layer and PHY)
- On-chip RAM and ROM
- On-chip I-cache and D-cache
- On-chip ADC and DAC
- On-chip upstream amplifier
- Security module supporting IPSEC encryption/decryption
- General purpose DMA channels
- General Purpose Input/Outputs (GPIOs)
- Timers (one configured as watchdog)
- Two 16550 UART modules
- I^2C module
- Single-reference crystal
- Interrupt controller
- High-speed VLYNQ™ interface
- Internal pre-programmed ROM enables boot from Flash, SRAM, EPROM via I^2C and VLYNQ
- Low power consumption

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TEXAS INSTRUMENTS

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