

## LOW-COST IP PHONE CHIP

### FEATURES

The BCM1190 is the world's most highly integrated and cost-effective IC for low-cost, feature-rich, high-quality **Residential Ethernet**® IP phone products.

- **The BCM1190 integrates**
  - Enhanced MIPS32 CPU with DSP instruction set
  - Two 10/100/BASE-T Ethernet MACs and transceivers
  - Wideband audio ADC and DAC with integrated programmable gain amplifiers
  - High-speed UART
  - Keyscan interface
  - General purpose I/O with programmable direction
  - IEEE 1149.1 (JTAG)
  - SDRAM controller
  - Serial port interface
- **The BCM1190 supports**
  - Serial flash
  - SDR-SDRAM
- **0.13µ process technology, 1.8/2.5/3.3V**
- **1.0W peak, 0.15W standby**
- **208-pin RoHS MQFP package enables 2-layer PCB**

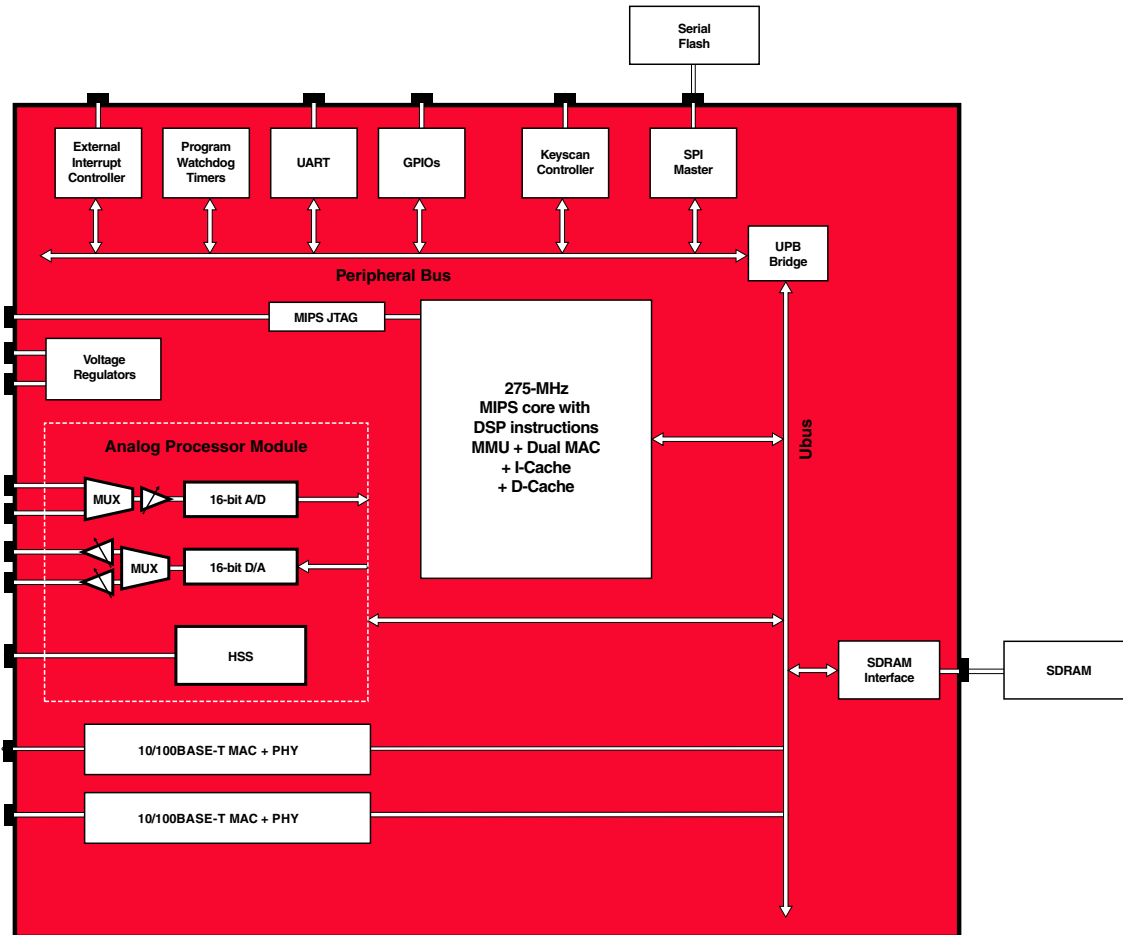
### SUMMARY OF BENEFITS

- **Enhanced RISC and PhonexChange™ software support**
  - Wind River® Platform for Consumer Devices, VxWorks® Edition
  - Application software
  - Protocol stacks: SIP, MGCP, H.323, Megaco/H.248
  - Ethernet switching
  - Narrowband vocoders: G.711, G.729A/AB, G.723.1, G.726, BroadVoice®16
  - Wideband vocoders: G.722, G.722.1, BroadVoice®32
  - Full-duplex speakerphone with AEC and AGC
  - Handset echo suppression
  - Packet loss concealment algorithms
  - AES encryption
  - SHA-1 authentication
  - VAD, CNG
  - Multi-party conferencing with complex vocoders
- **Ethernet switching supports**
  - IEEE 802.1p voice prioritization
  - 802.1Q VLAN
  - 802.1x authentication for advanced quality of service
  - Packet storm protection
- **10/100BASE-T Ethernet MACs and PHYs**
  - Compliant with IEEE 802.3™af power over Ethernet standard

### HARDWARE PLATFORMS

- **BCM91190: IP Phone reference design**
  - Includes IP phone housing and form factor
  - Reduces time-to-market
  - Includes PhonexChange suite and example application software

# OVERVIEW



## BCM1190 Block Diagram

The Broadcom BCM1190 IP phone chip is targeted toward cost-sensitive **Residential Ethernet**<sup>®</sup> IP phone products. The BCM1190 enables manufacturers to build feature-rich, high-quality IP phones at affordable cost points.

The chip's high-performance enhanced-RISC processor supports Broadcom's field-proven PhonexChange<sup>™</sup> IP telephony software suite.

PhonexChange includes a wide variety of narrowband and wideband voice coders, including Broadcom's high-fidelity BroadVoice<sup>®</sup> coder, a high quality full-duplex speakerphone algorithm, advanced jitter buffer management and packet loss concealment techniques, and a complete library of standard telephony algorithms required for IP phone designs.

The RISC processor further allows customers to add product-differentiating application software.

The BCM1190 integrates key Ethernet IP phone components including two 10/100BASE-T Ethernet MACs and PHYs, a wideband-capable analog codec (coder/decoder) with integrated amplifiers, high-speed serial port, UART, GPIO, and keyscan controller.

The chip supports serial Flash and a 208-pin MQFP package enabling an optimized 2-layer PCB layout.

The high level of integration on the BCM1190 results in low bill of material (BOM) costs. Combined with the PhonexChange software suite, this integration enables phone vendors to build enterprise-class products for the residential market at economical price points.

Broadcom<sup>®</sup>, the pulse logo, Connecting everything<sup>®</sup>, the Connecting everything logo, PhonexChange<sup>™</sup>, BroadVoice<sup>®</sup>16, BroadVoice<sup>®</sup>32, Residential Ethernet<sup>®</sup>, and BroadVoice<sup>®</sup> are among the trademarks of Broadcom Corporation and/or its affiliates in the United States, certain other countries and/or the EU. Any other trademarks or trade names mentioned are the property of their respective owners.

Connecting  
everything<sup>®</sup>



**BROADCOM CORPORATION**  
16215 Alton Parkway, P.O. Box 57013  
Irvine, California 92619-7013

© 2006 by BROADCOM CORPORATION. All rights reserved.

1190-PB02-R 07/31/06

Phone: 949-450-8700  
Fax: 949-450-8710  
E-mail: info@broadcom.com  
Web: www.broadcom.com