

## INTEGRATED DOCSIS® 2.0 SINGLE-CHIP VOIP CABLE MODEM

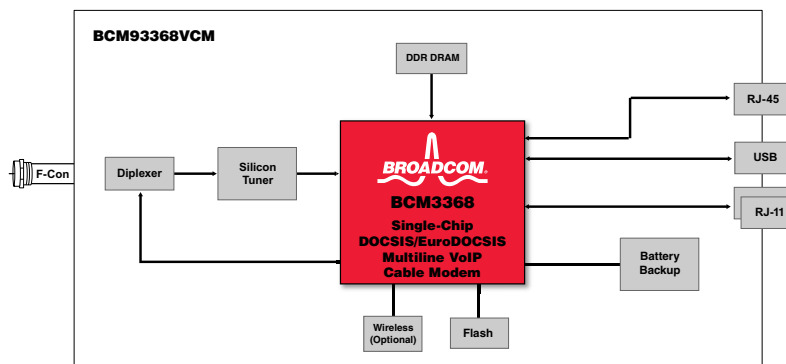
### FEATURES

- Industry's most advanced DOCSIS®/EuroDOCSIS™ 2.0 Voice over IP cable modem
- The BCM3368 integrates:
  - 800 DMIPS VoIP Enhanced RISC (VIPER) Processor
    - 300 MHz MIPS core with Memory Management Unit (MMU)
    - Independent I-cache and D-cache
    - VoIP Acceleration
  - Advanced QAMLink® transceiver supporting Annex A/B/C
  - DOCSIS/EuroDOCSIS 2.0 MAC with 16 SIDs
  - Advanced QAMLink downstream demodulator supporting 4-1024 QAM
  - Advanced QAMLink upstream modulator with integrated powerDAC, supporting 2-256 QAM with S-CDMA
  - Ethernet and USB interfaces
  - Flexible interface for cable gateway functionality
  - VoIP interface for multiple lines with conferencing support
- Support for CablexChange® advanced VoIP and CableMedea™ Gateway® software suites
- Advanced 2.0+ features
  - SmartSpectrum™ noise immunity technology
  - Propane® packet accelerator
  - TurboQAM™ performance enhancement
- Eighth-generation technology
- 426-pin PBGA RoHS package

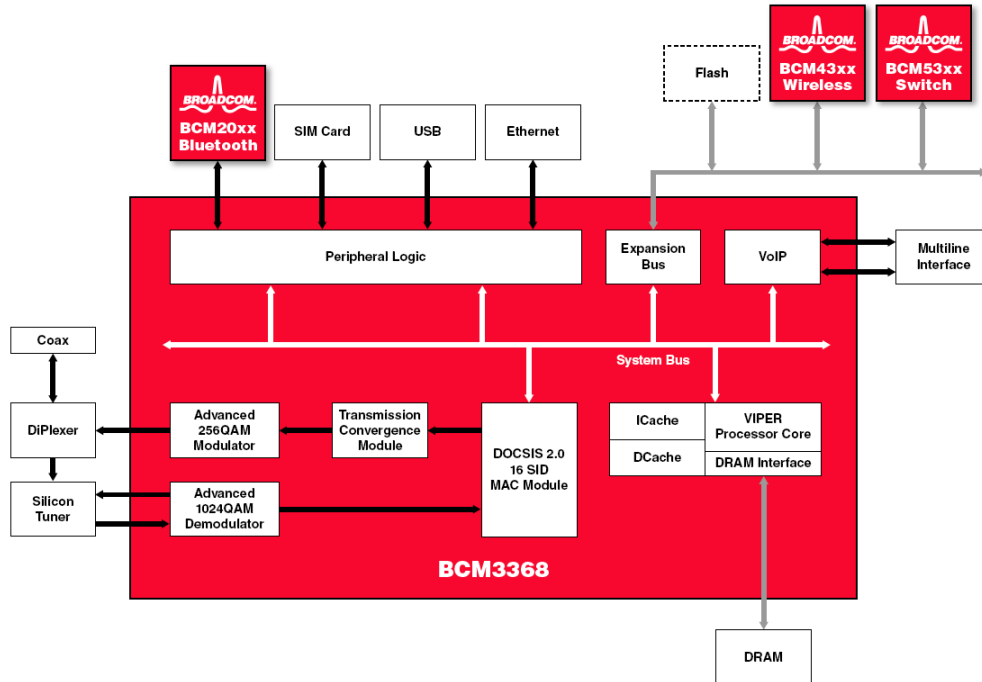
### SUMMARY OF BENEFITS

- Simplified BOM with lowest overall system cost for DOCSIS VoIP Modem:
  - Reduced component count and assembly cost
  - Eliminates external voice DSP and associated memory
  - Integrated upstream power amp
  - Integrated Ethernet and USB
- 800 DMIPS VIPER Processor with advanced memory architecture:
  - SPI Firewall support
  - Scalable clock rates
  - CPU power for advanced gateway applications
  - 
  - VoIP enhanced instructions for improved voice performance
  - MMU
  - 133 MHz DDR DRAM interface
- Flexible expansion allows for adding 802.11, multiport Ethernet switching, USB, Bluetooth®, and SIM Cards.
- 16 SIDs provide capability for superior QoS performance and simultaneous high QoS and BE traffic.
- SmartSpectrum™ delivers multiple dB enhanced robustness in noisy plant conditions.
- Propane packet acceleration improves throughput and efficiency up to 3x.
- TurboQAM™ leads to over 30% increased upstream and downstream performance.
- Eighth-generation technology ensures a proven, robust, and reliable solution.

### DOCSIS®/EuroDOCSIS™ 2.0 VoIP Cable Modem with Battery Backup



# OVERVIEW



## BCM3368 Block Diagram

The BCM3368 is the industry's most integrated solution for DOCSIS/EuroDOCSIS 2.0 VoIP cable modem applications. With a pinout optimization that allows a low-cost PCB and advanced integration, the BCM3368 has been optimized to significantly lower the total system cost of a VoIP cable modem.

Running at 300 MHz, the advanced VIPER processor, with independent instruction and data caches, delivers over 800 DMIPS of processing power to ensure the highest level of performance for both the DOCSIS modem and the VoIP, and provides enough power to run a Statefull Packet Inspection firewall and other advanced gateway features.

Building on eighth-generation technology, the BCM3368 DOCSIS modem core includes an RF receiver with advanced 256 QAM and S-CDMA demodulator, 1024 QAM modulator with integrated power DAC, DOCSIS 2.0 Media Access Controller (MAC), and a glueless interface to a Broadcom<sup>®</sup> silicon tuner.

Enhanced end-to-end 2.0+ features increase overall performance and robustness. First, SmartSpectrum is a suite of technology that delivers increased noise immunity and improved performance in noisy conditions. SmartSpectrum includes Hi-PER SCDMA (High Power S-CDMA) mode for highly attenuated connections; BPSK modulation, which delivers a 3 dB gain in poor plant connectivity; impulse noise mitigation to reduce packet error rate caused by impulse noise; and Trellis Coding (TCM-TDMA), which provides up to 2 dB RF in signal gain.

Second, certified Propane packet accelerator technology delivers enhanced efficiency with DPHS (Dynamic Payload Header Suppression), which increases upstream payload capacity by up to three times, and Sync-TDMA (Synchronous TDMA), which increases capacity with a smaller preamble.

Last, Broadcom's TurboQAM technology significantly increases overall performance of the system. 1024 QAM downstream and 256 QAM ATDMA upstream deliver an over 30% performance increase.

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