



## ADVANCED TWO-CHANNEL VOIP COPROCESSOR

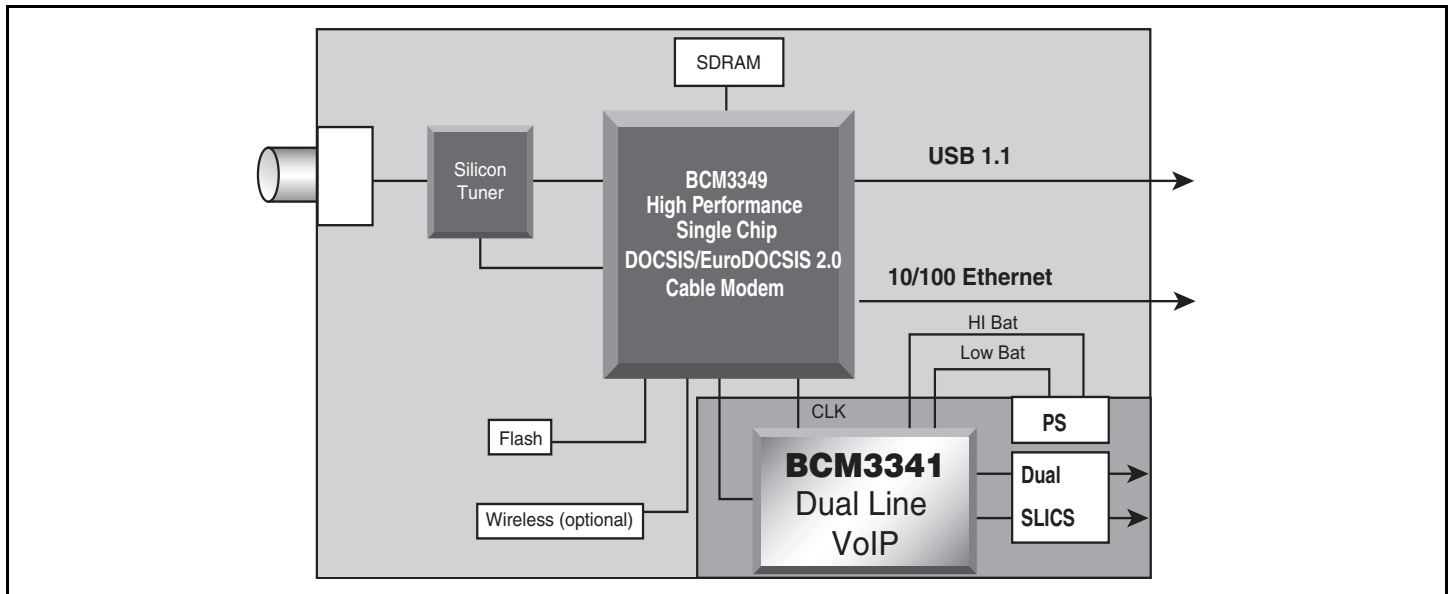
### FEATURES

- The BCM3341 VoIP coprocessor provides a seamless interface to Broadcom's PacketCable™ compliant cable modem devices, enabling the industry's lowest cost, modular VoIP cable modem solution.
- The BCM3341 integrates:
  - High-performance 266 DMIPS DSP
  - FlexiVoice™ dual world linecard programmable codec
  - Internal memory to support G.711 + 1 complex vocoder (2 lines of either/or simultaneously)
  - Memory expansion bus to support enhanced DSP features
  - Vocoder Support:
    - ITU G.7xx narrow, wideband, and complex vocoders
    - Enhanced BroadVoice16™ and BroadVoice32™
    - iLBC (internet Low Bitrate Codec)
  - G.168 (2000) compliant echo cancellor
  - DTMF/MF detection/relay and T.38 fax relay
  - HVG circuit switch mode controller for hi/low battery generation
  - Battery sensing and monitoring inputs
  - Extensive on-chip power management
  - Single 3.3V power supply
  - 0°C–70°C operation

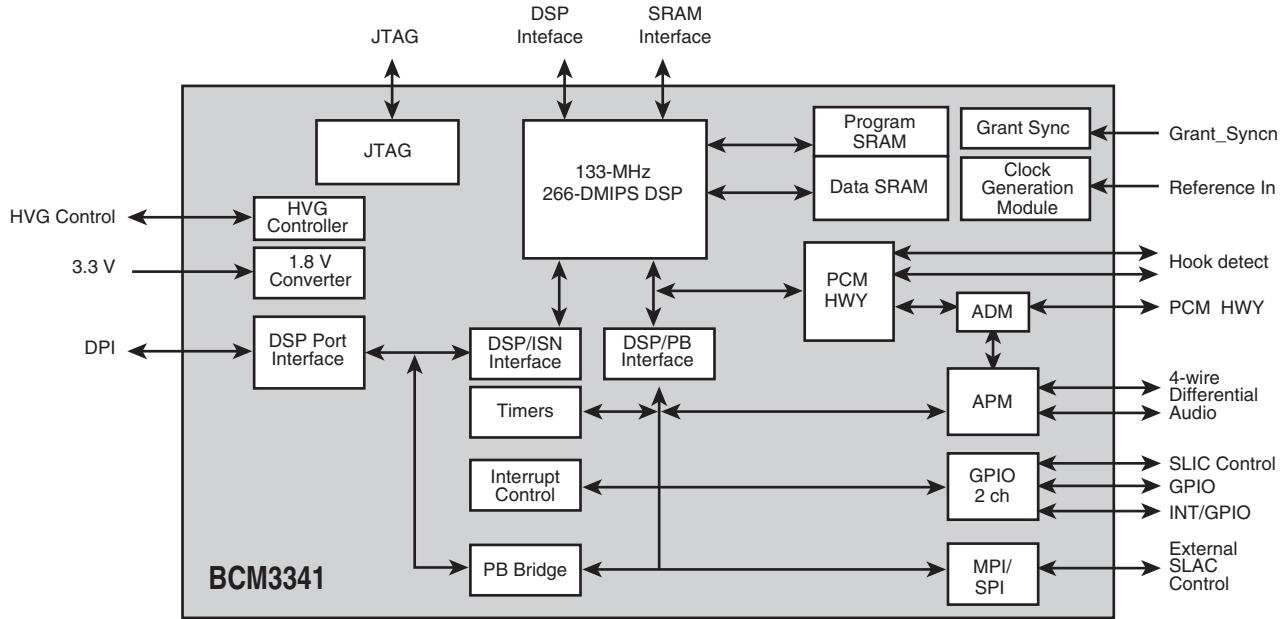
### SUMMARY OF BENEFITS

- **Highest level of integration dramatically simplifies system design, lowers part count, and reduces system cost**
  - Integrated memory
  - Battery sensing eliminates expensive dual switching power controller
- **Enhanced reliability of voice services through powerful DSP engine and voice algorithms deployed in millions of ports worldwide.**
- **Enhances voice quality through advanced system features**
  - Patented PacketSync™ minimizes VoIP packet delays
  - Power management engine reduces overall consumption
  - Accepts DOCSIS® system clock reference for slip free synchronization
- **Seamless interface to additional Broadcom silicon**
  - BCM3349 low-cost VoIP cable modem or cable gateway
- **Part of a comprehensive system solution including:**
  - Low-cost reference design with extensive documentation
  - Comprehensive CablexChange® software
    - Certifiable PacketCable implementation
    - SIP, MGCP, H.323 call control applications
    - Extensive G.7xx, BV16, BV32, iLBC vocoder support

### Two-Channel VoIP Cable Modem



## OVERVIEW



The BCM3341 offers the industry a highly integrated, cost effective approach to developing voice cable modem solutions for the delivery of primary or secondary line telephony. The BCM3341 provides a seamless interface to the BCM3349 single chip DOCSIS/EuroDOCSIS™ 2.0 cable modem.

In conjunction with the CablexChange software suite, the BCM3341 enables a leading performance, full featured voice cable modem solution that supports a wide range of protocols, vocoders, and other software features to be implemented in a single firmware image, reducing software complexity and flash storage requirements.

Integrated battery supply sensing, SRAM, system reference clock inputs, and codecs simplify design and significantly reduce system bill of materials for lower total system cost and improved time to market.

Key modules integrated into the BCM3341 include:

- 260-DMIPS VoIP DSP with patented PacketSync supports two primary lines of compressed voice packets plus T.38 fax relay. It can simultaneously support two secondary lines of G.711 for various class of service such as three way calling and caller ID.
- Integrated two-line FlexiVoice voice codec with individual line programmable filter coefficients, providing optimum performance for voice, modem, and fax applications.

- Grant synchronization engine: A voice packetization scheduler that synchronizes the voice packets with the DOCSIS grant slots, potentially saving 10–20 ms of VoIP packet delay, providing higher voice quality.
- Integrated DOCSIS system clock synchronization provides clock synchronization in the entire voice path for a slip free voice. (CODEC<->DSP<->DOCSISMAC<->DOCSIS CMTS) Solutions without such synchronization incur voice packet slips that lower the quality of voice calls.
- Up to 128k x 8k or 64k x 16k memory expansion capabilities for additional DSP features such as T.38 fax relay or additional simultaneous vocoders.
- PCM IOM2 interface for connecting external devices supporting applications such as DECT wireless handsets.

To design a two-channel voice cable modem, when used with BCM3349 DOCSIS modem and CablexChange software, the BCM3341 completes a cost effective, high performance world wide solution.

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