





QAMLINK® SINGLE-CHIP TWO-LINE VoIP BROADBAND GATEWAY IC

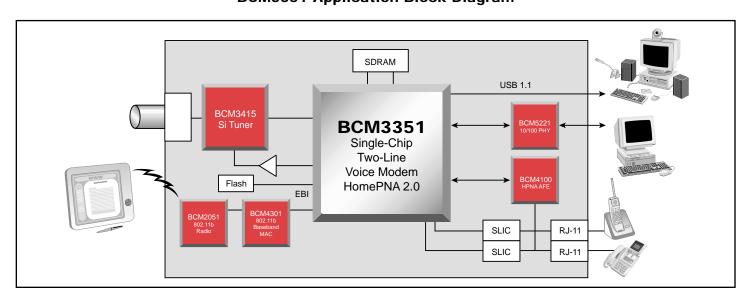
BCM3351 FEATURES

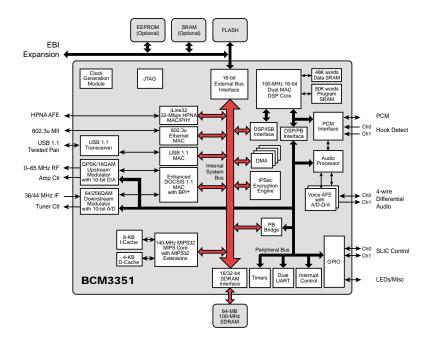
- The BCM3351 offers the industry the highest level of functionality integrated into a single-chip, enabling numerous broadband residential gateway services:
 - High-speed data access over cable
 - · Primary and secondary line VoIP/FoIP
 - · Wireline and wireless home networking
- The BCM3351 integrates:
 - DOCSIS/EuroDOCSIS 1.1 based cable modem with:
 - Enhanced MAC with 16 Upstream Queues
 - 4-256QAM Receiver with Annex A, B,C FEC
 - 4/16 QAM Burst Modulator
 - VoIP/FoIP PacketCable 1.0 capable solution with:
 - Two Channel DSP and G.712/V90 CODECs
 - World line card support
 - G.168 compliant echo canceller
 - Extensive chip power management
 - MIPS32 CPU with 160 Dhrystone 2.1 MIPS
 - 32-bit, 100-Mhz SDRAM controller
 - Integrated IP SEC engine
 - 12-Mbps USB 1.1 and 10/100 Ethernet MAC
 - Integrated iLine32 Mbps HPNA 2.0
 - 16-bit expansion bus interface
 - 1.8/3.3V, 0 to 70°C Operation
 - 480-pin PBGA package

SUMMARY OF BENEFITS

- High level of integration:
 - Reduces VoIP cable modem BOM
 - Reduces part count, increasing reliability
 - Reduces power consumption
- Proven DOCSIS/EuroDOCSIS baseline architecture, integrated in 70% of the worlds standardized cable modem solutions
- Enhanced reliability of voice services through powerful CPU, robust DSP technology and voice algorithms deployed in millions of ports worldwide.
- Enhances voice quality through advanced feature sets
- PropaneTM improves upstream channel capacity 300%
- IPSEC module supports VPN and secure voice services
- Patented PacketSync™ minimizes VoIP packet delays
- Power management engine reduces overall consumption
- Integrated HomePNA 2.0 MAC supports high-speed multimedia services over phone lines
- Multiple interfaces provide home networking differentiation
- Interfaces seamlessly to additional Broadcom silicon
- Part of a comprehensive system solution:
 - Low-cost reference design with extensive documentation
 - Certifiable DOCSIS/EuroDOCSIS 1.1 software
 - Certifiable PacketCable 1.0 CablexChange software

BCM3351 Application Block Diagram





The Broadcom **BCM3351** represents a new and unprecedented level of integration for PacketCable Multimedia Terminal Adapters (MTAs). The **BCM3351** provides a unique solution for low-power and cost-effective MTAs that can deliver primary line or secondary line VoIP cable telephony and broadband date services to the home worldwide.

Key modules integrated in the BCM3351 include:

- Enhanced VoIP DOCSIS/EuroDOCSIS 1.0/1.1 based MAC integrates a wirespeed DES encryption/decryption engine, full DOCSIS/EuroDOCSIS 1.1 QoS, support for 16 SIDS in the downstream, 256 multicast and Unicast DA CAM, 16 independent DMA controlled upstream queues, as well as extended network management MIB and diagnostic features.
- 100+ MIP VoIP/FoIP DSP with patented PacketSync[™], supports two primary lines of compressed voice packets including G.711, G.729a/e and G.728 vocoders, plus T.38 fax relay. Simultaneously it can support two secondary lines of G.711 for class services such as three-way calling and caller ID.
- Integrated two-line FlexiVoiceTM Voice Codec with individual line programmable filter coefficients, providing optimum performance for both V.90 modem and voice applications.

- High-performance 160 MIPS, 140-MHz MIPS32 processor has an 8K two-way set associative I-cache and a 4K two-way associative D-cache.
- Broadcom PROPANETM software supports enhanced bandwidth efficiency and turbo modem performance.
- IPSec module with single-DES (CBC and ECB modes), triple-DES (CBC and ECB modes), MD-5 and SHA authentication in hardware provides support for Virtual Private Networks (VPNs).
- Integrated iLine32TM HPNA 2.0 home phone line interface eliminates hundreds of dollars worth of additional telephone and Ethernet wiring.
- Integrated 10/100 Ethernet MAC supports small business integrated access device applications.

Ordering Information:

BCM3351 QAMLink® Single-Chip Two-Line VoIP Broadband Gateway IC

BCM93351VCM Reference Design

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everything[™]



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