



INTEGRATED DOCSIS®/ EURODOCSIS™ 3.0 CABLE MODEM SOC

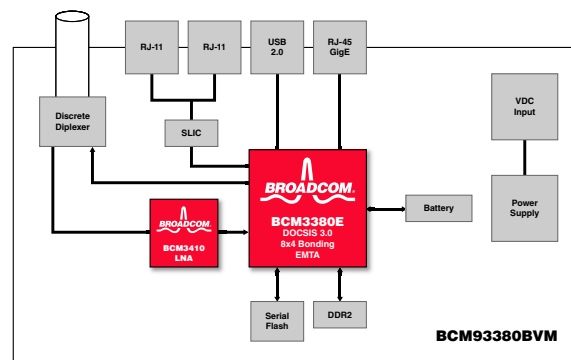
FEATURES

- **DOCSIS®/EuroDOCSIS™ 3.0 compliant MAC**
 - Eight channels downstream
 - Four channels upstream
 - Integrated octal demod and quad modulator
- **Integrated 64-MHz wideband receiver**
 - Two independent 32-MHz blocks
 - 1-GHz plant support
- **Integrated quad power amp**
- **Advanced Processor Architecture**
 - 1000 DMIPS VIPER™ Processor Core
 - Four hardware assist engines
 - High speed DDR2 interface
 - Total processing capability of 500 kpps
- **Integrated IPTV Solution**
 - Complete QAM to IP processing on chip
 - Hardware MPEG to IP conversion engine
 - Dedicated connectivity to IP-STB
- **Complete set of advanced peripheral interfaces**
 - Two USB 2.0 Host/Device ports with integrated PHY
 - Two 10/100/1000 Mbps Ethernet ports with Ethernet^{AV}, 1 with integrated PHY
 - One PCI Express® interface
 - Two SIM card interfaces for fixed mobile convergence
- **Advanced VoIP Subsystem**
 - 2-line Audio Processing Module with integrated codec and HVG
 - Direct interface to low-cost external dual SLIC
 - PCM interface for expansion beyond two voice lines
 - Battery Management Unit
 - CablexChange® software support

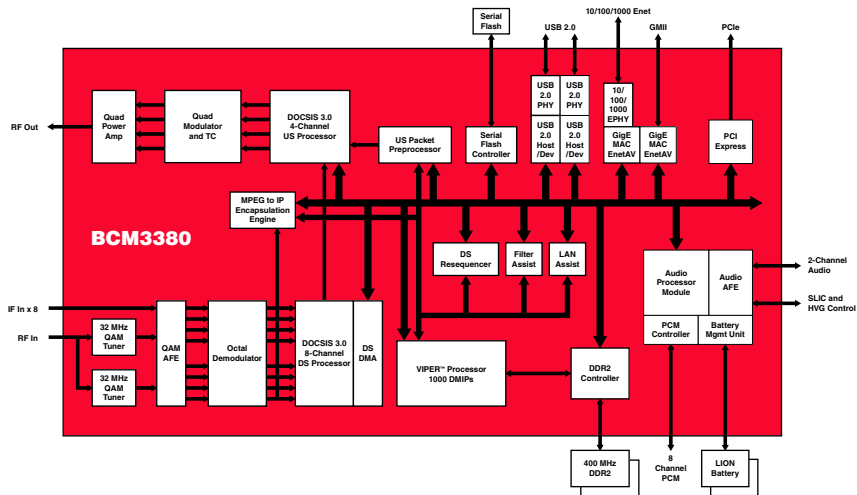
SUMMARY OF BENEFITS

- **Highest speed DOCSIS/EuroDOCSIS 3.0 solution available with downstream up to 320 Mbps and upstream up to 160 Mbps enables competitive MSO offering.**
- **Unmatched, powerful processing architecture enables line speed data rates and ability to maximize total system performance of a DOCSIS/EuroDOCSIS 3.0 system.**
- **Flexible integrated receiver or independent external tuners do not put additional burden on MSO channel lineup.**
- **1-GHz receiver support enables MSOs to expand their usable spectrum.**
- **Maximum integration reduces total system cost, eliminating the need for external tuners, power amps, or PHY devices.**
- **Integrated IPTV solution creates an end-to-end IPTV solution, enabling MSO to utilize reduced cost IP-STB without investment on the headend.**
- **Integrated highest speed interfaces enable maximum DOCSIS/EuroDOCSIS 3.0 speeds without additional cost, and provides maximum flexibility in application including Wi-Fi® Gateways, IPTV, Media Server Gateways, Fixed Mobile Convergence platforms, etc.**
- **Complete VoIP subsystem leverages proven CablexChange software for full PacketCable™ and SIP support.**
- **System compatible configurations enable multiple end products with marginal additional investment.**
- **10th generation DOCSIS technology ensures a proven, robust, and reliable solution.**

DOCSIS/EuroDOCSIS 3.0 Embedded Multimedia Terminal Adapter (eMTA)



OVERVIEW



BCM3380 Block Diagram

The BCM3380 is the industry's first fully integrated solution for DOCSIS/EuroDOCSIS 3.0 applications. With advanced support for eight downstream channels, the BCM3380 is the world's fastest cable modem SoC enabling cable operators to deliver competitive high-speed services. The BCM3380 integrates all of the necessary functionality to enable cost-optimized solutions for data modems, eMTAs, gateways, media servers, and fixed mobile convergence platforms.

Delivering over 1000 DMIPs, the advanced VIPER processor and the four independent hardware assist engines deliver unmatched packet processing power. With total capability of over 500 kpps, the BCM3380 enables line speed rates, maximizes the eight downstream and four upstream channels of DOCSIS/EuroDOCSIS 3.0, with plenty of processing power to handle gateway and other advanced applications such as WiFi or VoIP.

The BCM3380 incorporates a complete IPTV solution. By performing QAM to IP conversion on chip, the BCM3380 enables operators to offer IPTV service and directly take advantage of lower cost IP-STB hardware. The MPEG to IP integrated hardware engine within the BCM3380 encapsulates MPEG data coming from the RF interface into IP format and passes it along to any interface, such as Ethernet, USB, WiFi, etc., all without any added

jitter. Further QoS is provided by patented Ethernet^{AV} technology, which provides QoS within the Ethernet network. With a second Ethernet interface integrated on chip, BCM3380-based IPTV applications are not burdened with additional costs of external Ethernet switches. The eight downstream channel capability of the BCM3380 supports IPTV without jeopardizing the simultaneous support of a full 4-channel DOCSIS 3.0 modem.

With an integrated VoIP subsystem similar to that deployed through multiple previous generations of Broadcom voice cable modem SoC, the BCM3380 delivers a proven, robust VoIP system. By incorporating a complete 2-channel voice system, the BCM3380 relies only on an external, low-cost SLIC device to complete the VoIP subsystem. The BCM3380 provides codec functionality, battery management, as well as high-voltage generation for lowest cost VoIP implementation. Expandability beyond two voice lines is supported via PCM interface.

The BCM3380 is intended for use in a variety of applications, such as data modems, voice modems, gateways, media servers, and fixed mobile convergence platforms. With a wide variety of high-speed standard interfaces, including USB 2.0, 10/100/1000 Mbps Ethernet, and PCI Express, the BCM3380 is optimized for each application.

BCM3380 Product Configurations

Primary Application	External Tuner Support	PCI e TM	USB Port1	USB Port2	GMII	Voice	SIM Card	IPTV
BCM3380D	Data Modem	N	N	DEV	N	N	N	Y
BCM3380E	2-Line EMTA	N	N	DEV	N	N	Y	Y
BCM3380Z	Gateway	Y	Y	HOST/DEV	HOST/DEV	Y	Y	Y

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