

## DUAL-CHANNEL FRONT-END DOCSIS® 2.0+ STB IC WITH CHANNEL BONDING

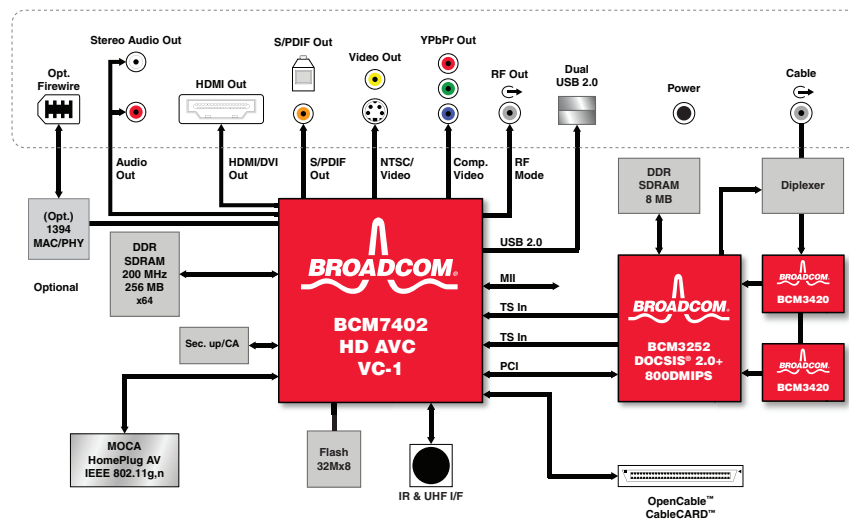
### FEATURES

- Dual QAM in-band demodulators
- Out-of-band (OOB) demodulator for support of DVS-178 and DVS-167
- 800DMIPS dual-threaded R4K MIPS processor
- DOCSIS®/EuroDOCSIS™ 2.0+ including DSG and channel bonding
- DOCSIS and channel bonding code supplied by Broadcom®
- DAVIC MAC
- USB 2.0 MAC and PHY (full data rate USB supported)
- PCI
- Boot from unified back-end Flash (i.e., Flash connected to BCM7038, BCM7400, BCM7401, or BCM7402)
- Ethernet MAC and PHY
- BOM savings include integrated regulators, VCX0, and upstream amplifier
- IPv6 supported

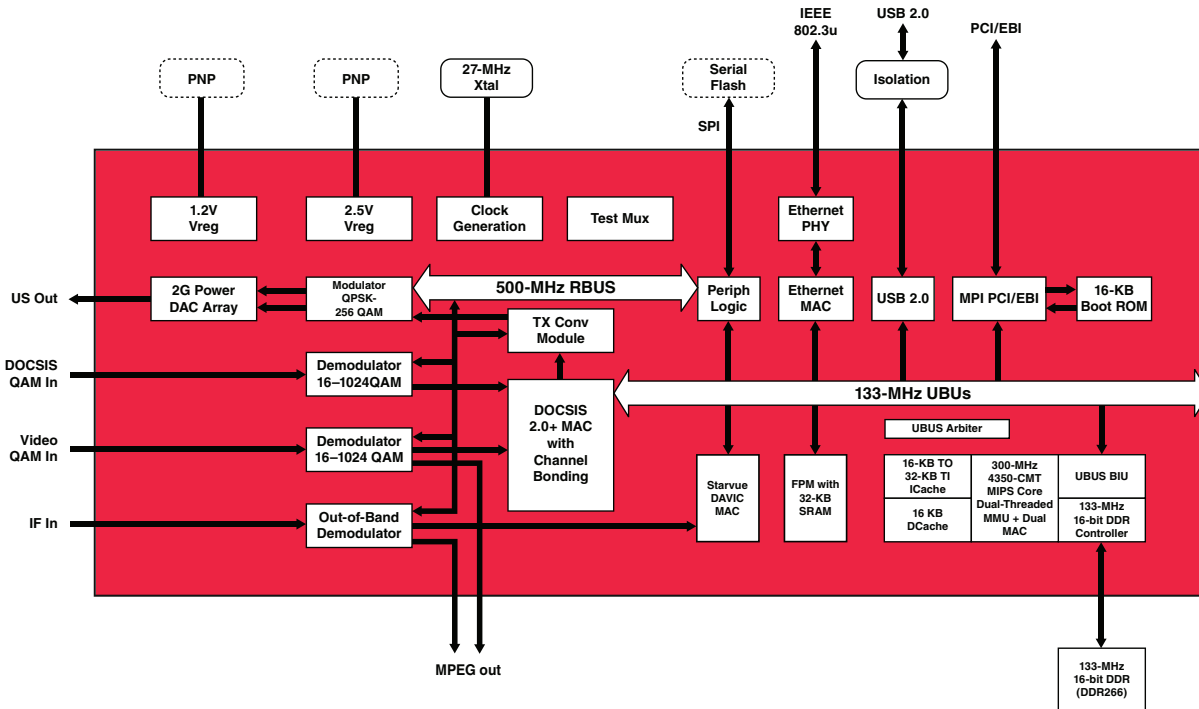
### SUMMARY OF BENEFITS

- The BCM3252 provides a complete front-end solution for next-generation set-top box products. North America and international markets enable a single design to be deployed on a worldwide basis.
- Able to support IP video data rates at up to 80 Mbps, allowing for future transition to an all IP network.
- Software switchable from broadcast (video channel configuration) to channel bonding, enabling in field-network configuration transitions.
- High-performance processor capable of supporting DOCSIS/EuroDOCSIS 2.0+, channel bonding, and other network-centric applications.
- OOB provides support for existing OOB channels that are used today. Facilitates move to DSG and DOCSIS.
- USB 2.0, PCI, and Ethernet make for flexibility in connection to back-end devices, BCM7038, BCM7400, BCM7401, and BCM7402.
- BOM savings resulting from integration enable lower overall set-top box cost.
- Broadcom-supplied code for channel bonding and DOCSIS enables quick time-to-market.

**Basic Interactive DOCSIS 2.0+/DSG HD Set-Top Box Block Diagram**



# OVERVIEW



**BCM3252 Block Diagram**

Broadcom’s ICs provide the solution for the next-generation interactive DOCSIS 2.0+, DSG HD AVC set-top box. The main sections include a front end (tuners, QAM, and DOCSIS), addressed by the BCM3420 and BCM3252, and a back end (HD AVC/VC-1/MPEG2 decoding, audio decode, HDMI, and peripherals, etc.), addressed by the BCM7402.

The BCM3252 IP Video Pipeline IC provides the integrated front-end solution for high-end set-top boxes. It has a high-performance processor that can address the tasks of DOCSIS 2.0+, channel-bonding resequencing, and network protocols such as TCP/IP, UPnP, and IPv6. The BCM3252 is both DOCSIS- and EuroDOCSIS-certified.

The OOB and upstream modulator of the BCM3252 conforms to the DVS-167, DVS-178, and DOCSIS standards. The GPIO on the BCM3252 can be configured to output CableCARD™ signals, which connect directly to the CableCARD socket.

The BCM3252 supports both the individual program channel mode (up to two video channels) and the channel-bonded mode (up to two DOCSIS channels). These modes can be switched from one to the other

via software, making the BCM3252 ideal for networks that will move to channel bonding in the future.

Broadcom’s latest CMOS tuner, the BCM3420, addresses the low power needs of set-top boxes and extends the range of tuning up to 930 MHz.

The BCM7402 is a single HD AVC/VC-1/MPEG2 decoder with graphics subsystem. It contains a MIPS32® processor dedicated to applications and OS. Included in the BCM7402 are integrated video amps, MAC and PHYs for USB 2.0, USB 1.1, 10/100 Ethernet, flexible audio core supporting today’s major audio codecs, and other next-generation set-top box features. The BCM3252/BCM7402 systems also support a single unified Flash for reduced component BOM and systems cost savings. A full 80-Mbps IP video stream is supported in channel bonding mode in the BCM3252/BCM7402 set-top.

The BCM3252 and BCM3420, along with the BCM7402, provide the solution for the next-generation basic interactive DOCSIS 2.0+/DSG HD AVC set-top box products, meeting the requirements for US cable operators and international operators alike.

The BCM3252 is in volume production today.

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