

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

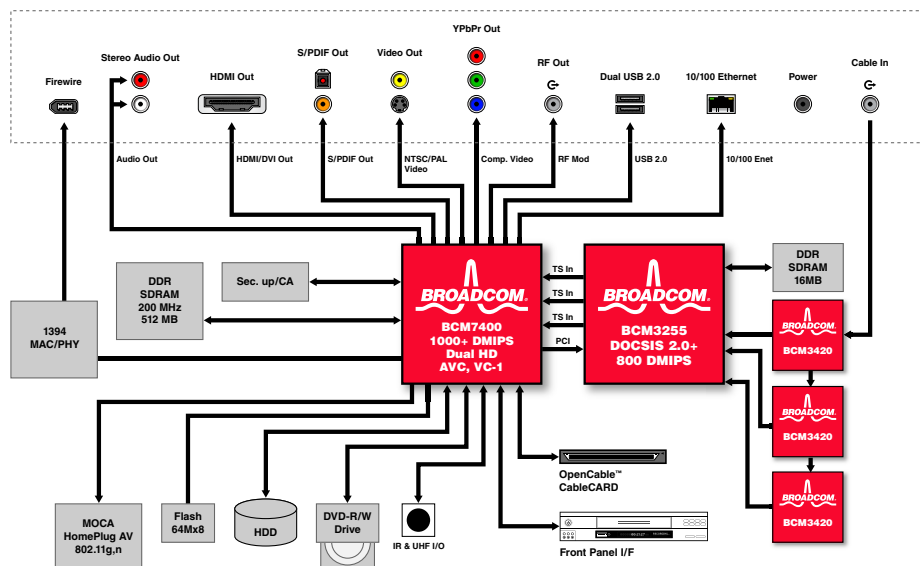
FEATURES

- Three QAM in-band demodulators
- OOB demodulator for support of DVS 178 and DVS 167
- 800-DMIPS dual-treaded 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 (that is, Flash is connected to a BCM7038, BCM7400, or BCM7401)
- Ethernet MAC and PHY
- BOM savings include integrated regulators, VCX0, and upstream amplifier
- IPv6-supported

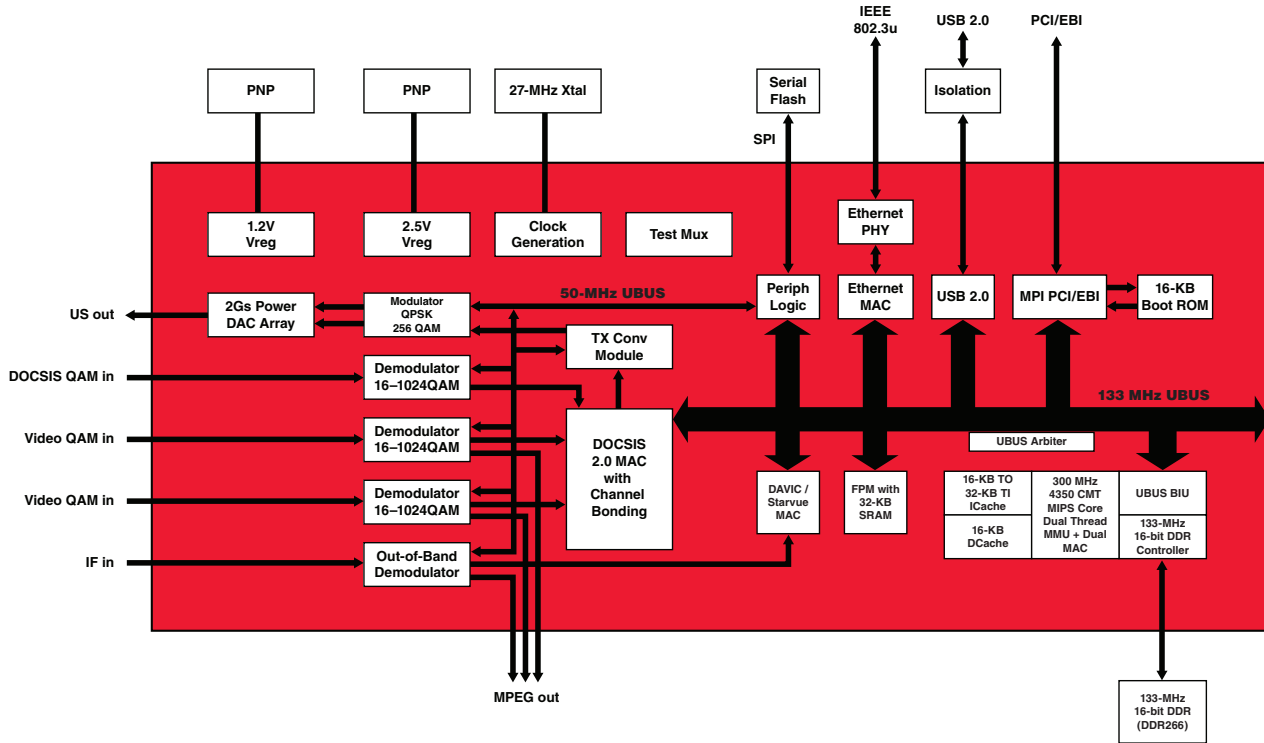
SUMMARY OF BENEFITS

- The BCM3255 provides a complete front-end solution for next-generation high-end set-top box products and media centers. 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 120 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, BCM7400, BCM7401, and BCM7038.
- 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.

HD AVC/VC-1 Dual DVR DOCSIS 2.0+ Set-Top Box



OVERVIEW



BCM3255 Block Diagram

Broadcom's ICs provide the solution for the next generation of HD PVR set-top box products. Main sections include a front end (tuners, QAM, and DOCSIS) addressed by the BCM3420, BCM3255, and a back end (HD AVC/VC-1/MPEG2 decoding, audio decode, HDMI, and peripherals, etc.) addressed by the BCM7400.

The BCM3255 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 TCPIP, UPnP, and IPv6. The BCM3255 has been both DOCSIS- and EuroDOCSIS-certified.

The OOB and upstream modulator of the BCM3255 conforms to the DVS 167, DVS 178, and DOCSIS standards. The GPIO on the BCM3255 can be configured to output CableCARD™ signals which connect directly to the CableCARD socket.

The BCM3255 supports both the individual program channel mode (up to three video channels) and the channel bonded mode (up to three DOCSIS channels). These modes can be switched from one to the other via software, making the BCM3255 ideal for networks that will move to channel bonding and IP video in the future.

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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 BCM7400 is a dual HD AVC/VC-1/MPEG2 decoder with graphics subsystem. It contains a dual-threaded MIPS processor, floating point unit (FPU), and is capable of 800+ DMIPS. This processor controls the front end and runs the applications, middleware, and other set-top box functions. Two HD AVC/VC-1 video streams can be decoded and independent graphics engines enable completely independent outputs. Fully independent audio decoding is done in the BCM7400 and picture-in-picture is supported. The BCM7400 is highly integrated, including peripherals, further reducing the overall component count for advanced dual-decode PVR boxes.

The BCM3255 and BCM3420, along with the various back-end devices from Broadcom, meet the next-generation requirements for HD PVR, media center set-top box products, and provide flexibility for future network configurations.

The BCM3255 is in volume production today.



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