

SINGLE-CHIP DIGITAL CABLE SET-TOP BOX IC WITH DOCSIS® 2.0+, HD AVC/VC-1/ MPEG2 DECODE (SD OUTPUT), AND DCAS®

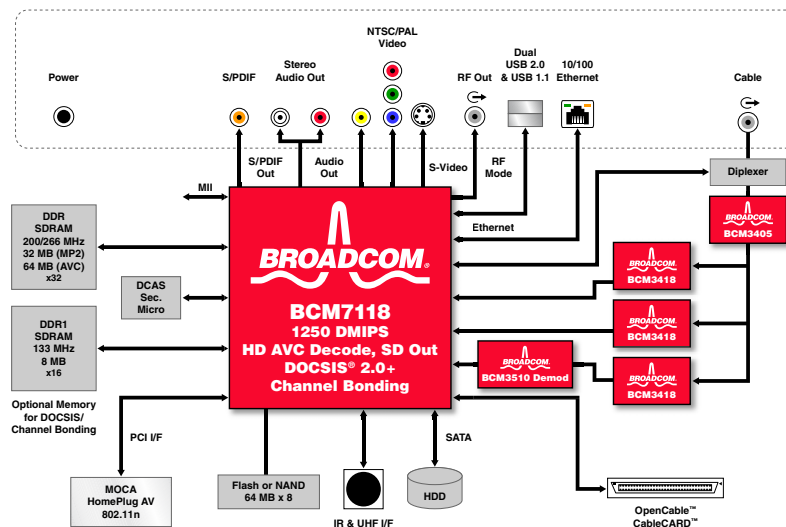
FEATURES

- Dual 1024/256/64-QAM variable symbol rate receivers supporting ITU-T J.83 Annex A/B/C
- QPSK out-of-band receiver and a QPSK to 256-QAM upstream burst modulator
- DOCSIS® 2.0 modem supporting DSG and channel bonding
- HD AVC/VC-1/MPEG2 decoder, standard definition output
- DAVIC 1.2/1.5 MAC
- Flexible audio decoder supporting AC-3, AAC, MP3, Musicam, and more
- Advanced 2D graphics engine
- NTSC/PAL video encoder
- USB 2.0, USB 1.1, and Ethernet on board (MACs and PHYs)
- S-ATA for optional hard disk drive and Personal Video Recording (PVR)
- Advanced security including secure boot, code authentication, OTP, and more
- Broadcom supplied drivers including DOCSIS 2.0, DSG, channel bonding, and IPv6

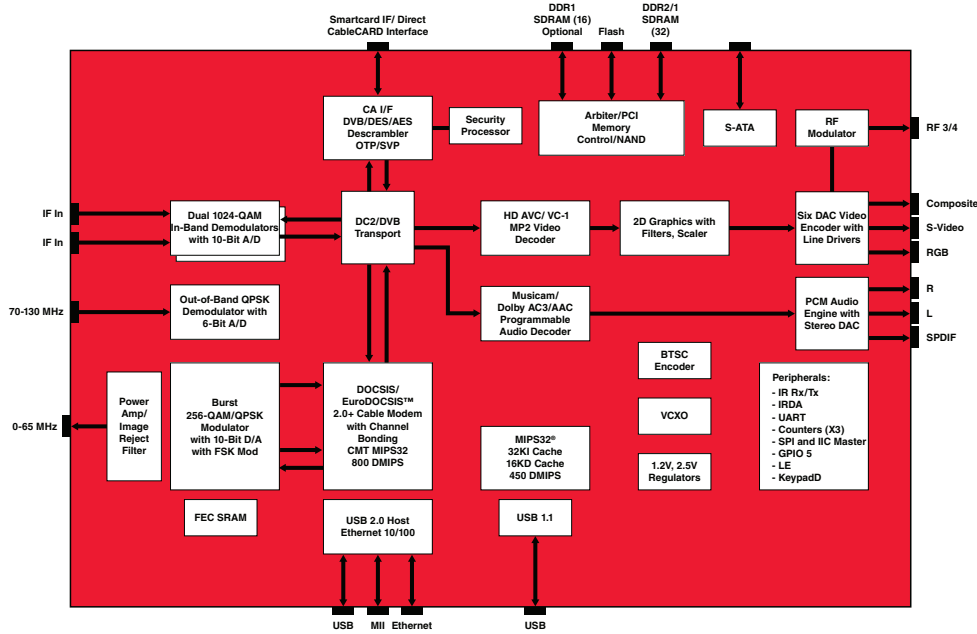
SUMMARY OF BENEFITS

- Highly integrated IC for cost-effective next-generation digital DOCSIS interactive set-top boxes
- Features such as HD AVC decode (SD output), USB 2.0, DOCSIS 2.0 with channel bonding, advanced audio, IPv6 meet cable operator next-generation requirements.
- Channel bonding enables IP video delivery in next-generation networks.
- Dynamically configurable between channel bonding mode (two DOCSIS channels) and broadcast mode (one video channel, one DOCSIS channel)
- Incorporation of next-generation security provides for the highest degree of content protection.
- 1250 DMIPS addresses next-generation applications such as OCAP and home networking.
- Allows watch and record set-top with addition of external QAM demodulator using the same IC
- PCI, External Bus Interface (EBI), and Media Independent Interface (MII) for home network and peripheral expansion
- Support of DCAS (downloadable security) and CableCARD (M-Card and S-Card)
- Support for North American market and international markets

BCM7118 System Block Diagram (HD AVC/VC-1/MPEG2 Decode, SD Output, DOCSIS 2.0+)



OVERVIEW



BCM7118 Block Diagram

The BCM7118 is a single-chip set-top box IC that combines the key aspects required for the next-generation of set-top boxes including cost-effective single-chip design, HD AVC/VC-1/MPEG2 decode with SD output, DOCSIS 2.0 with channel bonding, DSG, IPv6, and support for CableCARD and DCAS. The BCM7118 meets all standards for the world cable market and, as such, can be deployed in North America and internationally.

The BCM7118 software is based on the Broadcom Set-top API and Magnum PI. This is common with all other current generation products, including the BCM7401, BCM7402, and BCM7400. API compatibility allows for the quick movement of software from one type of box to another (i.e. standard definition output to full high definition output).

The BCM7118 includes dual 1024/256/64-QAM receivers, an out-of-band QPSK receiver, and a QPSK to 256-QAM upstream burst modulator. All major physical layer standards are supported for deployment worldwide.

Included in the IC is a full DOCSIS 2.0 cable modem with support of DSG, channel bonding, and IPv6. A dual-threaded MIPS® R4K provides over 800 DMIPS for running these applications and others.

The BCM7118 includes an HD AVC/VC-1/MPEG2 decoder. This allows boxes based on the BCM7118 to be tuned to receive HD content (cable network or home network server) and decode and display this

content. The BCM7118 is also capable of outputting 480p (specified use cases) in order to provide the best possible picture quality for decoded HD content.

The BCM7118 contains Broadcom's latest audio processor. This programmability supports AC-3, AAC, MP3, Musicam, and many additional audio formats. Future audio formats can be supported as well, with modified firmware providing upgradability.

A MIPS32 processor core capable of over 450 DMIPS is dedicated entirely to applications, middleware, etc. (i.e., OCAP, VOD, EPGs).

The BCM7118 includes a number of peripherals required for next-generation set-top boxes, including USB 2.0 dual host, USB 1.1, Ethernet, S-ATA, PCI, DCAS interface, CableCARD, and more.

Broadcom has included the latest in security on the BCM7118. This includes secure boot, code authentication, onboard OTP for unique chip ID, and more.

The BCM7118 represents the most integrated, cost-effective set-top box single-chip solution incorporating next-generation requirements. It is built on the previous generation of Broadcom silicon and software to offer a low risk and quick time-to-market for interactive broadband set-top boxes.

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