

BCM7100 SINGLE-CHIP CABLE SET-TOP BOX SYSTEM

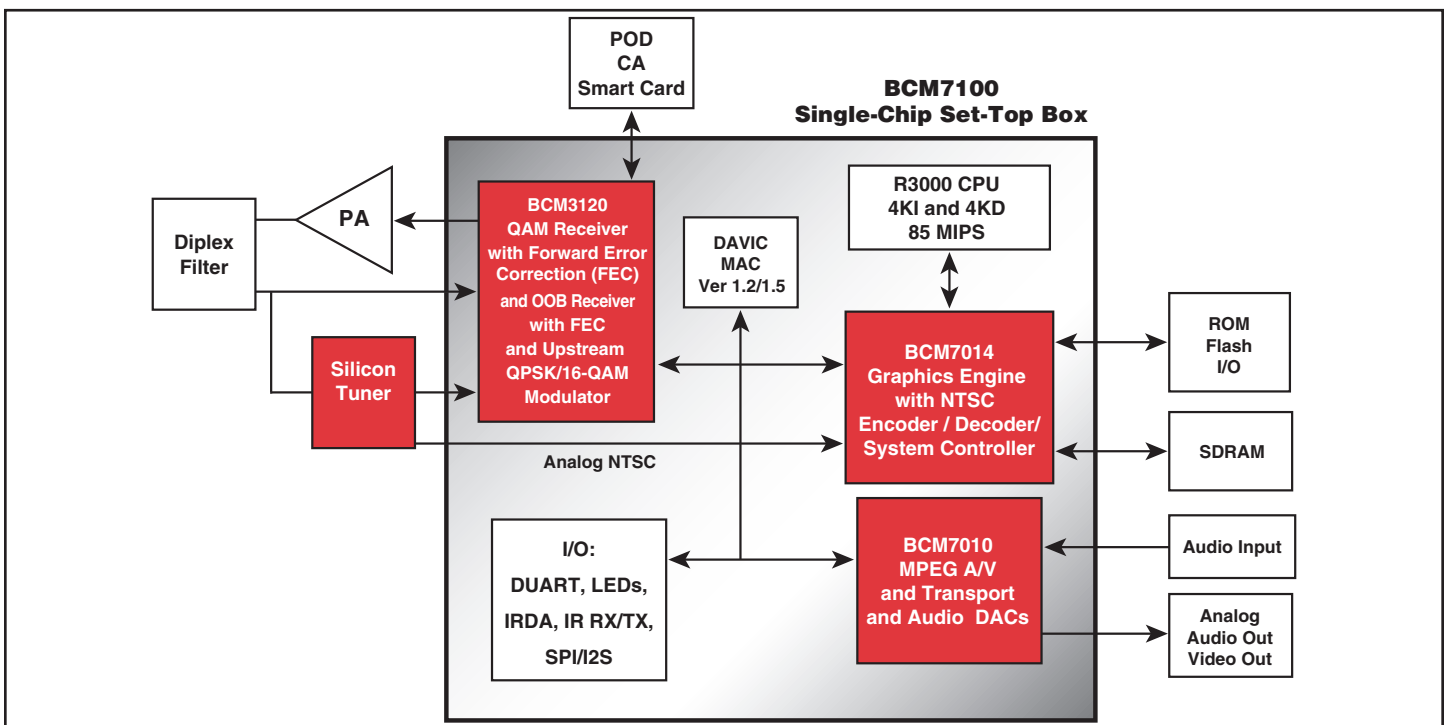
BCM7100 FEATURES

- **Audio/video subsystem**
 - MPEG2/DC2/DVB transport
 - MPEG2/DC2 video decoder
 - MUSICAM/Dolby AC-3 audio decoder
- **Advanced 2D/3D graphics subsystem**
 - Studio-quality text and graphics
 - NTSC/PAL analog video decoder/encoder
 - System bus bridge with DMA
- **QAMLink® cable set-top box transceiver**
 - In-band and out-of-band demodulators
 - Burst upstream transmitter
- **MIPS-based microprocessor subsystem**
- **On-board DAVIC 1.2/1.5 MAC**
- **Key system peripherals**
- **POD support including DVS 213 DES descrambler**

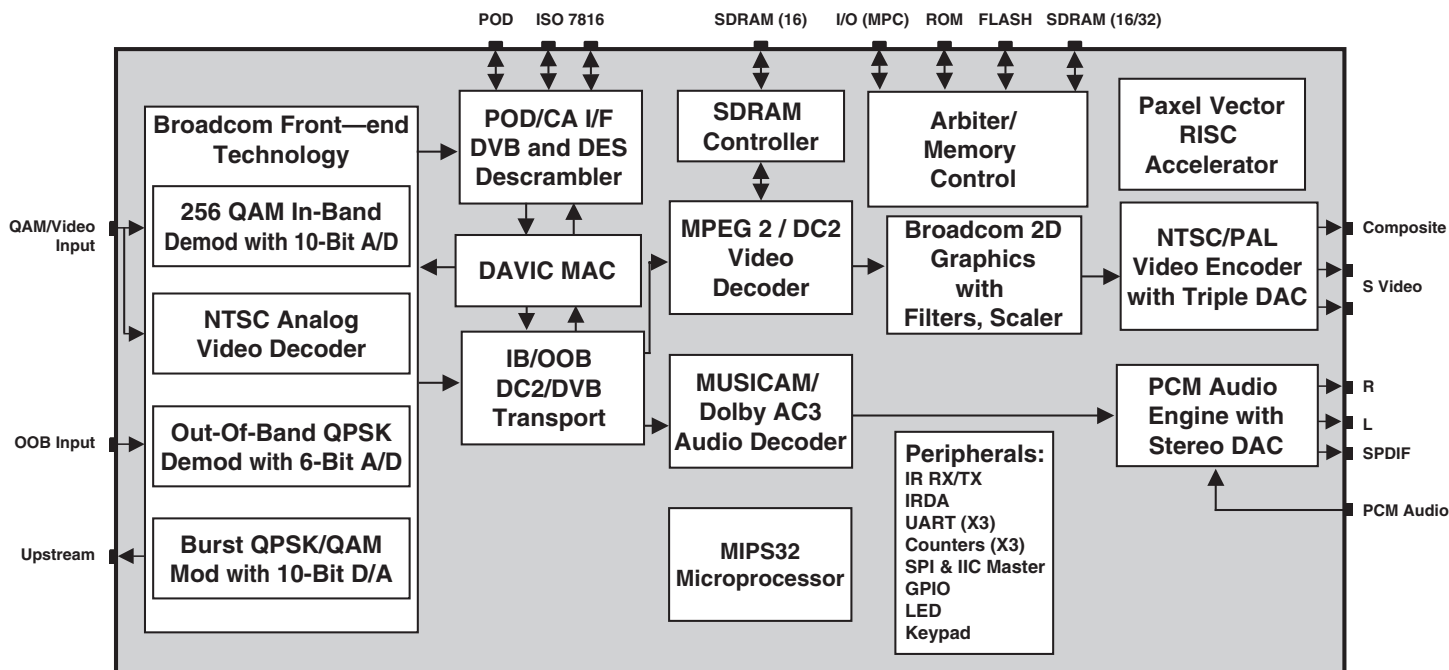
SUMMARY OF BENEFITS

- A fully featured analog and digital video cable set-top box feature set in a single chip reduces overall system cost dramatically.
- Subsystems are based on Broadcom's field-proven production-available technology.
- Can be used in cable systems worldwide with DVB, DAVIC, and ITU standards compatibility.
- Broadcom developed device drivers enable rapid software development cycle with support of industry-standard operating systems.
- Advanced graphics system allows applications such as internet browsers and electronic program guides to deliver studio-quality text and graphics on television monitors.
- Includes dual analog and digital (MPEG-2) video system.
- Supports DVS POD requirements.

BCM7100 Single-Chip Set-Top Box System on a Chip



BCM7100 OVERVIEW



The **BCM7100** is a cable set-top box system on a single chip, integrating Broadcom's field-proven BCM3120 cable transceiver technology, BCM7010 MPEG/AC-3 decoder technology, BCM7014 advanced 2D/3D graphics and system integration technology, BCM3310 MIPS microprocessor technology, all key interfaces to external memory and I/O, and the necessary peripherals for set-top box applications.

The **BCM7100** integrates Broadcom's field-proven and industry-adopted QAMLink technology. This includes an in-band 256-QAM demodulator with universal FEC supporting a picture IF input and a 10-bit ADC, a QPSK out-of-band demodulator with universal FEC and 6-bit ADC, and a burst QPSK/QAM modulator with universal FEC encoding and 10-bit DAC.

Also included in the **BCM7100** is a DAVIC 1.2/1.5 MAC able to communicate at downstream and upstream rates of up to 3 Mbps. This DAVIC MAC includes AAL5 and SAR functionality.

The **BCM7100** back-end technology is derived from the BCM7010 MPEG/Dolby Decoder and the BCM7014 Advanced 2D/3D Graphics Controller.

The **BCM7100** features an MPEG-2 DVB-compliant transport demultiplexer with advanced section filtering capability, DVB descrambler, DES descrambler, MPEG-2/DC2 video decoder, Dolby AC3/MUSICAM audio decoder with analog and SPDIF outputs, NTSC/PAL video encoder with Macrovision™ and analog output, NTSC analog video decoder with comb filtering and time-base correction. The DES descrambler is compliant with the DVS 213 requirements for the transport stream POD interface. In addition, the **BCM7100** includes Broadcom's advanced 2D/3D graphics engine, offering true studio-quality text and graphics with extremely efficient use of memory and bandwidth.

The **BCM7100** also incorporates a complete MIPS32-based microprocessor subsystem, including caches with bridging to memory and a local bus, where external peripherals can be attached. Peripherals included in the **BCM7100** are UARTs, two ISO7816 smart card interfaces, counter/timers, GPIO, a POD interface, keypad, LED, IR Tx/Rx, IRDA, I2C and SPI controllers.

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7100-PB08-R-06.13.03

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