



SINGLE-CHIP SET-TOP BOX WITH PVR

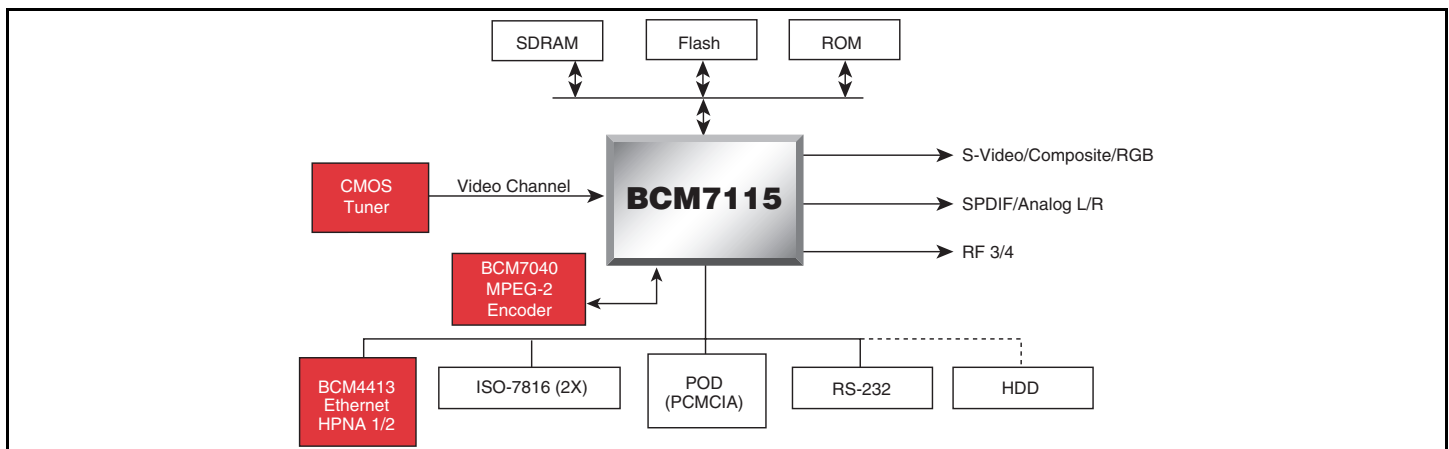
FEATURES

- 1024/256/64-QAM variable symbol rate receiver supporting ITU-T J.83 Annex A/B/C
- QPSK out-of-band receiver and a QPSK to 256-QAM upstream burst modulator
- DAVIC 1.2/1.5 MAC
- Dolby® AC-3/Musicam® audio decoding
- 2D/3D graphics engine
- NTSC/PAL video decoder
- NTSC/PAL video encoder
- BTSC decoder
- External bus interface (EBI) serving as local bus
- High-performance, 200-MHz RISC MIPS32™ processor with 8-KB I and 8-KB D caches
- USB host with dual port (OHCI)
- Peripheral devices include IEEE 1394 interface, POD interface, V.90 softmodem support, LED, UARTs and IDE controller
- Personal video recording (PVR) support with IDE controller, 3DES, and dedicated DMA engines
- Single unified memory architecture
- Software device drivers supporting multiple operating systems and middlewares
- BCM7040 MPEG-2 encoder interface

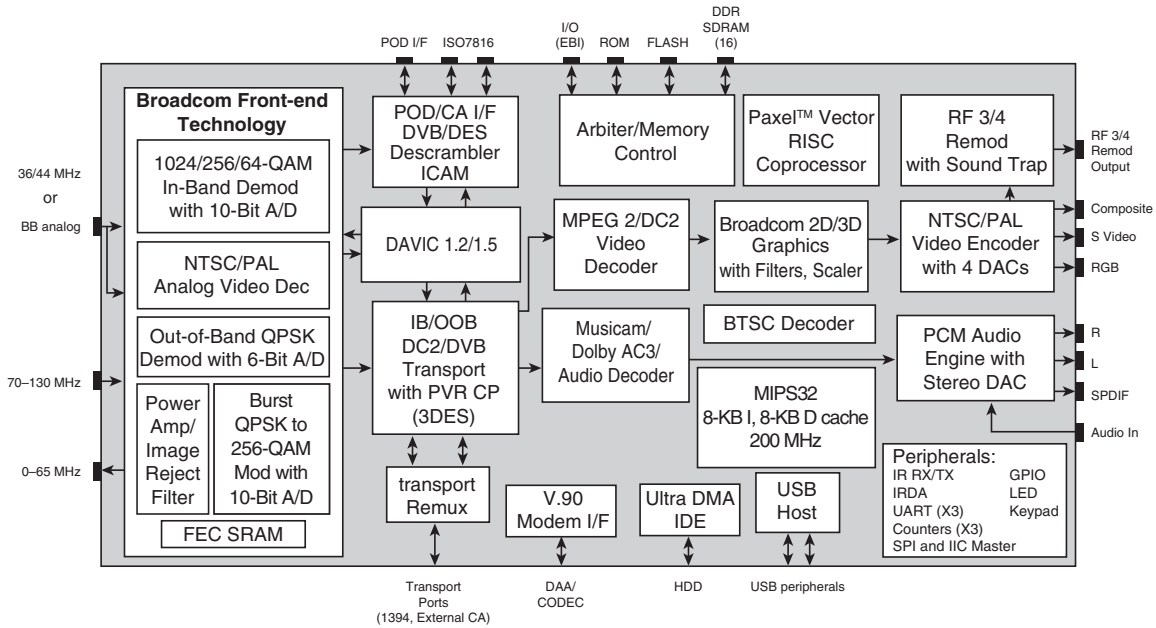
SUMMARY OF BENEFITS

- Integrated front-end and back-end results in the most cost-effective, single-chip set-top box solution with personal video recording (PVR)
- PVR engine supports time shifting on a program being viewed and recording of another program simultaneously (watch and record)
- Support for DAVIC and DCII enables deployment in major cable markets worldwide
- Industry-leading compact form factor design is enabled by high integration
- High-performance RISC processor can support today's demanding set-top box operating systems and applications
- External QAM demodulator support for PVR watch and record

Single-Chip Set-top Box with PVR System Block Diagram



OVERVIEW



The BCM7115 is a single-chip set-top box device that combines the key aspects required for the next generation of set-top boxes, including cost-effective single-chip design, personal video recording (PVR), communication via DAVIC or other protocol, and support of all major global physical layer standards for worldwide deployment.

The BCM7115 includes a 1024/256/64-QAM receiver, 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. The device includes a complete DAVIC 1.2/1.5 MAC for interactive services.

The BCM7115 also includes a standard definition MPEG-2 video decoder and 2D/3D graphics subsystem. This allows for the display of studio-quality text/graphics and 3D effects. The DVB/DCII transport of the device supports PVR. This support includes time shifting on the program being viewed and recording of another program simultaneously.

A full PCM audio engine for mixing sounds into the main audio stream is also on-chip. Outputs include left and right analog and SPDIF.

The BCM7115 also contains a high-performance MIPS32 RISC processor with 8-KB I cache and 8-KB D cache.

The BCM7115 includes a number of peripherals required for next-generation set-top boxes, including USB host, IDE controller for connection to disk drives, POD interface for external conditional access, and a glueless IEEE 1394 interface. The BCM7115 also contains support for the Broadcom V.90 softmodem.

Onboard descrambling supports all major conditional access systems and includes 3DES encryption/decryption for PVR.

The BCM7115 represents the most integrated, cost-effective set-top box single-chip solution incorporating next-generation requirements, including support of multiple middlewares and applications. It is built on the previous generation of Broadcom silicon and software to offer low risk and quick time-to-market for interactive broadband set-top boxes.

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