



IP SET-TOP BOX SINGLE-CHIP DECODER

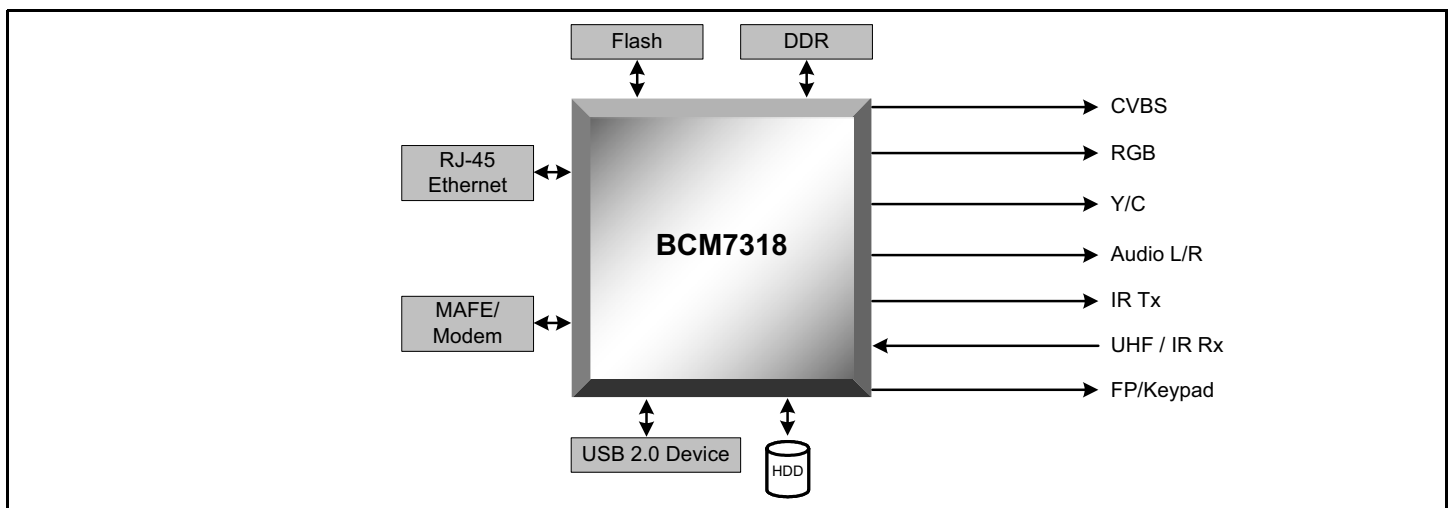
FEATURES

- **Data Transport Processor**
 - Support for DIRECTV and MPEG transport streams
 - DES/DVB descrambler
 - Supports NDS ICAM, XTV and VGS
 - Support for Play/Record from/to hard disk
- **MPEG-ATSC Compliant Audio/Video Decoders**
 - MP@ML MPEG2 video decoder
 - Decode of MPEG Layer 1 and Layer 2 audio
 - Support for Dolby[®] AC-3 and Compressed PCM
- **Broadcom[®] Graphics Engine (BGE)**
 - Supports three graphics, 1 x video and H/W cursor planes
 - 2D video-scaling support
 - Integrated PAL/NTSC/SECAM encoder
 - ITU-656 input support
 - PaxeI[™] graphics engine
- **MIPS32[™] CPU Core at 266 MHz**
 - MMU support
 - MIPS16e[™] ASE support
 - EJTAG debug support
- **IDE Host Adapter**
 - ATA 5 command set, Ultra ATA-66 I/F
- **Integrated 10/100 Ethernet Controller + Phy**

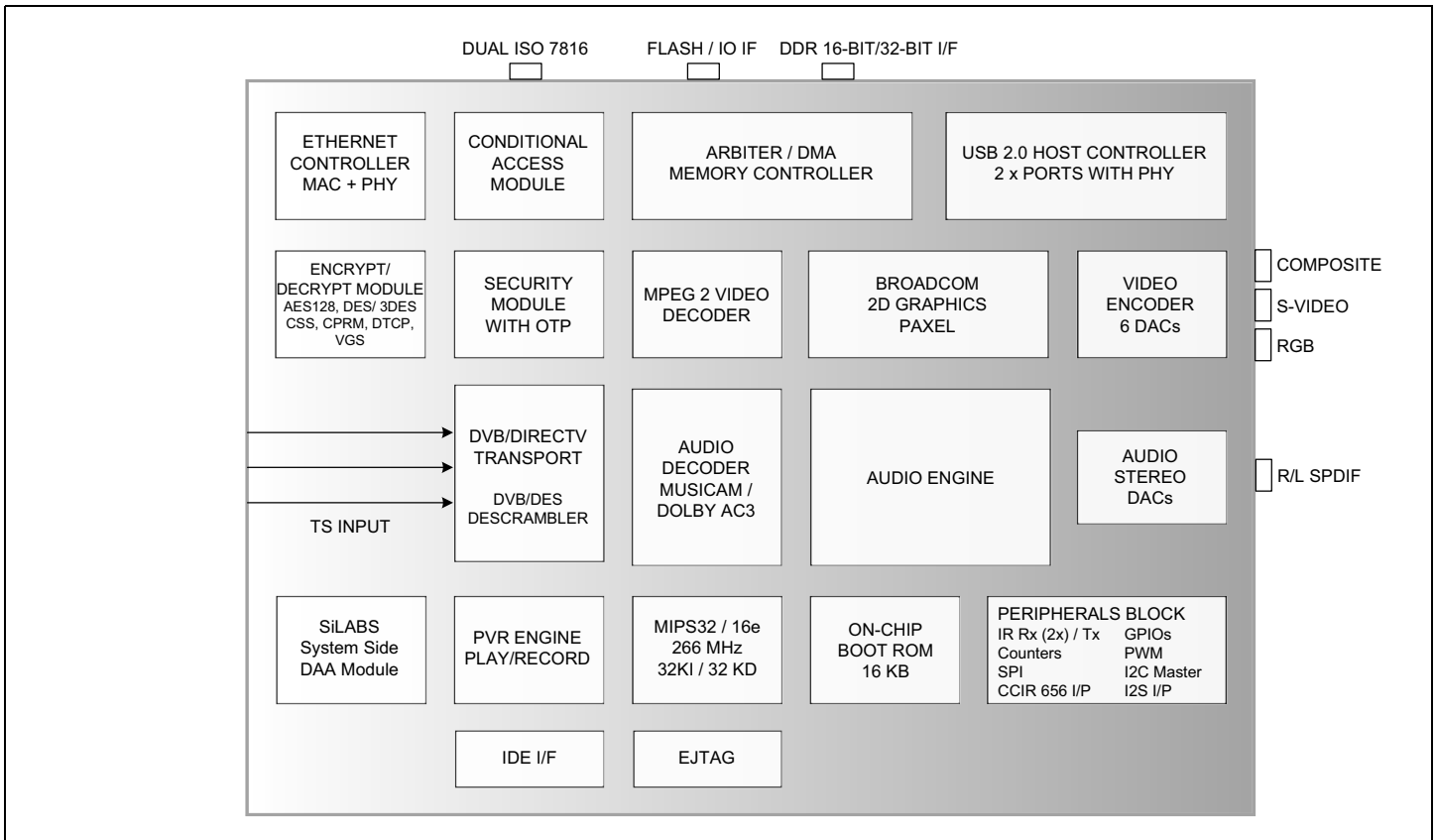
SUMMARY OF BENEFITS

- **Provides a cost-effective solution for IP-based applications that require MPEG2 A/V decoding.**
- **Fully Integrated MPEG2 A/V decoder, MIPS CPU, Ethernet controller, and peripherals for complete set-top box system.**
 - Low-cost solution for next-generation IP set-top boxes.
- **Fully integrated USB 2.0 Host Controller with 2 port Physical Interface on-chip.**
- **PVR capability enables personal viewing and scheduling, Video-On-Demand (VOD), and VCR “trick mode” effects on any video stream.**
 - Encryption ensures copy protection of recorded programming content.
 - Simultaneous support for Record and Playback.
- **Advanced 2D graphics system allows applications such as Internet browsers and electronic program guides to deliver studio-quality text and graphics on television monitors.**
- **Broadcom developed device drivers enable rapid software development cycle with support of industry-standard operation systems.**
- **Industry-leading third-party operating systems, tool chains and middleware supported.**

BCM7318 Single-Chip System Block Diagram



OVERVIEW



The BCM7318 is a fully integrated MPEG2 single-chip solution targeted specifically at the emerging IP-STB market.

The BCM7318 integrates existing volume production technologies from within Broadcom's cable, satellite and networking groups. By combining these technologies together, the BCM7318 offers a low-cost solution to satisfy the IP-STB marketplace.

The BCM7318 design is based on unified memory architecture, (UMA), utilizing a 133 MHz, 16- or 32-bit wide Double Data Rate (DDR) memory interface for added system performance.

It is capable of decoding transport streams delivered via the fully integrated 10/100 Mbit Ethernet controller, or via the IDE ATA host I/F from an external hard disk drive, or from an external TS input source such as a DVB-C/S or T NIM.

The BCM7318 offers very high levels of integration for reduced system BOM, including USB 2.0 Host + Physical I/F, 100BaseT Ethernet, Stereo Audio DACs, Video Line Drivers, VCXOs and an internal 1.3V

voltage regulator. For further cost saving, the BCM7318 integrates Silicon Labs' Si305x SSD device for SW Modem applications.

The BCM7318 includes Broadcom's advanced 2D graphics engine with integrated Paxel, offering true studio-quality text and graphics with extremely efficient use of memory and bandwidth. The Paxel can be used for hardware acceleration of graphic functions, thereby offering the ultimate user experience for GUI applications.

The BCM7318 includes a complete industry standard MIPS32 microprocessor subsystem, including 32 Kbytes instruction and data caches. The CPU operates at 266 MHz, offering over 340-DMIPS rating. The architecture also includes the MIPS16e Application-Specific Extension for code compaction.

A full range of peripheral features are supported including UARTs, dual ISO 7816 smart cards I/F, GPIO, counters/ timers, IR Tx/Rx, I2C and SPI controllers.

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