BCM93725
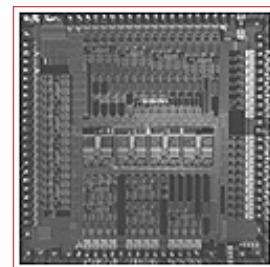
PRODUCT Brief

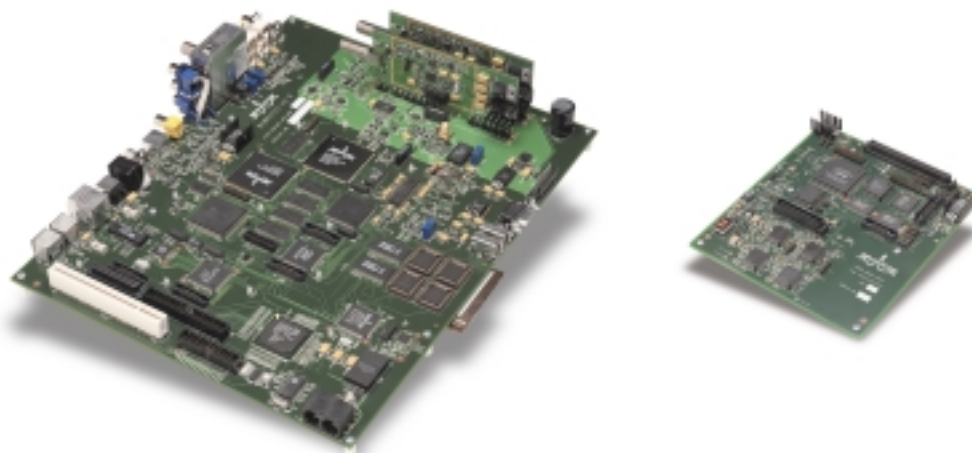# BCM93725 ADVANCED SET-TOP BOX REFERENCE DESIGN
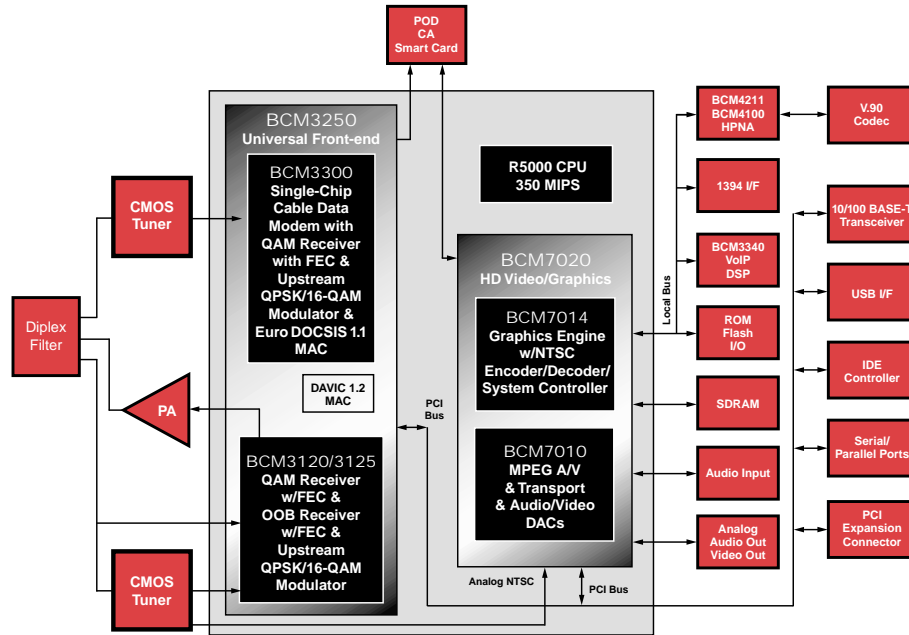
BCM93725 FEATURES

- **BCM3250 Advanced Set-top Box Frontend including DOCSIS/DAVIC Cable Modems**
  - Dual 256 QAM variable symbol rate receivers supporting ITU-T J.83 Annex A/B/C
  - QPSK Out-of-band Receiver and QPSK/16 QAM Upstream Burst Modulator
  - DOCSIS 1.1 MAC supporting Quality of Service (QoS)
  - DAVIC 1.2 MAC
- **BCM7020 High Definition Video/Graphics Subsystem**
  - ATSC-Compliant All Format MP@HL MPEG-2 Video Decoder
  - Dolby AC-3/Musicam
  - Broadcom Advanced 2D/3D Graphics Engine
  - NTSC/PAL video decoder
  - NTSC/PAL/HD video encoder
  - PCI and local bus interfaces
- **Dual Broadcom CMOS Tuners**
- **High-performance 350 MIPS RISC R5000 class microprocessor**
- **VoIP Daughter Card supporting 4-lines of voice**
- **Peripheral devices include: HPNA 1/2, IEEE1394, POD interface with PCMCIA connector, Ethernet, V.90 Softmodem**
- **Software device drivers supporting multiple operating systems**

SUMMARY OF BENEFITS

- **Highly integrated frontend and backend resulting in a cost effective advanced set-top box solution**
- **Dual CMOS tuner architecture allows for simultaneous viewing of internet and video or picture-in-picture**
- **HDTV decoder supports all formats for maximum versatility**
- **PCI architecture allows the use of low cost PC peripherals**
- **DOCSIS 1.1 Cable Modem QoS enables applications to support VoIP and Videoconferencing**
- **Support for DOCSIS 1.1, DAVIC 1.2, and DCII enable deployment in virtually all major markets worldwide**
- **Single high-performance RISC processor capable of supporting today's demanding set-top box operating systems, applications, and cable modem traffic**
- **Reference Design includes:**
  - **Schematics and Gerber files**
  - **Bill of Material (BOM)**
  - **Data Sheets and Users Manual**
  - **Software Source Code**
  - **Applications support**

BCM93725 Advanced Set-Top Box Reference Design with VoIP Daughter Card

The Broadcom® **BCM93725** is an advanced set-top box reference design supporting high definition television (HDTV) and broadband cable modem internet access. It is a highly integrated, cost effective design built on the latest generation of Broadcom silicon and software offering low risk and quick time to market for the next generation of Interactive set-top boxes.

The core chip set on the **BCM93725** includes the BCM3250 Interactive Set-top Box Frontend with DOCSIS/DAVIC Modems, BCM7020 Advanced High Definition/Video Graphics Subsystem, and a high-performance MIPS R5000 class processor.

The BCM3250 is a complete frontend advanced set-top box solution providing dual 256-QAM receivers, an out-of-band QPSK receiver and a QPSK/16-QAM upstream burst modulator. All major physical layer standards are supported allowing set-tops based on the **BCM93725** design to be deployed worldwide. The device includes a complete DOCSIS 1.1 MAC (including QoS) and DAVIC 1.2 MAC for broadband interactive services.

The BCM7020 is a device which cost effectively supports the requirements of television and set-top box systems that require high-definition, multiple stream standard-definition video decoding with the capability of simultaneous high-definition and standard-definition outputs.

Features also include studio quality text for presenting standard Windows fonts on a SD or HD television and a high performance 2D/3D graphics engine for 3D effects.

The **BCM93725** also includes a high-performance MIPS RISC processor supporting middleware, graphics, applications, and cable modem traffic. The single processor design eliminates the need for multiple processors in the set-top, substantially reducing system cost.

The **BCM93725** contains a number of peripherals required for next generation set-top boxes. Some of these include Home Phone line Networking (HPNA 1/2) for streaming of data and video throughout the home, VoIP Daughter Card supporting 4 lines of voice, IEEE1394 for connection to digital consumer electronic devices such as Digital Video Recorders (DVR), and a POD interface for external conditional access. In addition, a low cost V.90 softmodem has been included for alternative low data rate connections.

The **BCM93725** supports industry-standard operating systems such as WindowCE, Aperios, JAVA, OpenTV, PowerTV, pSOSystem, and others. In addition, Broadcom offers device drivers that are compatible with a number of operating systems and APIs.

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