

HIGH DEFINITION VIDEO DECODER CHIPSET

FEATURES

- **Two-chip solution for a PCI Express®-based high definition (HD) video decode**
 - BCM70010 for multistandard high definition video decoding
 - BCM70012 interfaces the BCM70010 with PCI Express (PCIe™) and performs the media security tasks.
- **Multistandard high definition video decoding in the following formats:**
 - H.264/AVC HP at L4.1 1080i, 40 Mbps
 - H.264/AVC HP at L3.0 480i
 - H.264/AVC HP at L3.2 720p
 - SMPTE VC-1 AP at L3 1080i, 40 Mbps
 - MPEG-2 MP at ML
 - MPEG-2 MP at HL
- **Uncompressed video output**
 - YUV 4:2:0, YUV 4:2:2
 - NV12 planar YCbCr format
 - YUY2, UYVY packed YCbCr format
 - 480i, 480p, 576i, 576p, 720p, 1080i, 1080p support
- **Strong media security**
 - Hardware security processor
 - AES-128-encrypted content over PCIe
 - Uncompressed data encryption and scrambling support
 - Firmware verification
 - Digital signature
 - X.509 certificate
 - Hardware authentication and verification
- **One-lane PCIe host interface**
 - Memory-to-memory video decode architecture
 - PCIe 1.1-compliant
 - Clock request and Active State Power Management (ASPM) support
- **Low-power high definition decode**
 - Optimized for notebooks
 - Support for all ASPM modes
 - Decoder power down when not in use

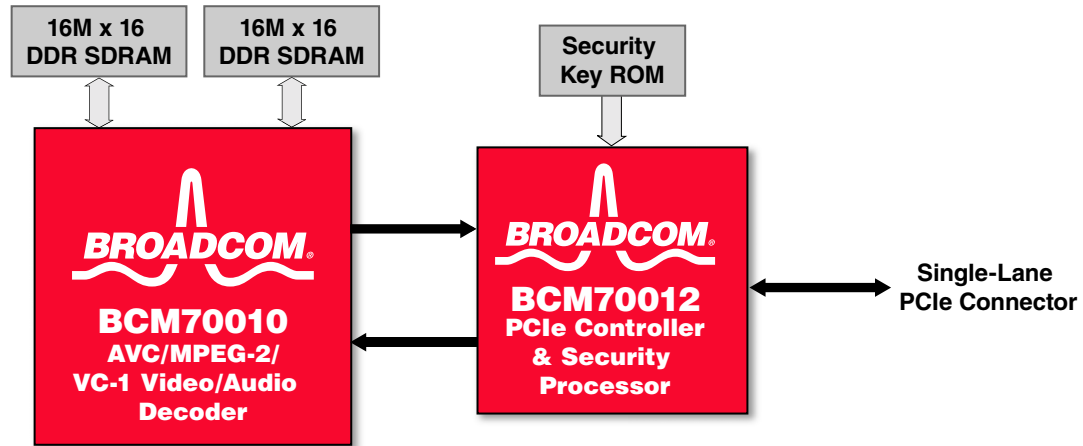
APPLICATIONS

- HD DVD and Blu-ray™ disc playback on PCs
- Protected media playback on PCs
- HD Media playback on PCs
- BCM970012NB–PCIe mini card for notebooks
- BCM970012PQ–PCIe adapter for desktops
- BCM970012IC–ExpressCard™ 34

COMPONENTS

- H.264/MPEG4 part 10 decoder
- VC-1 Simple, Main, and Advanced profile decoder
- MPEG-2 decoder
- Integrated security processor

OVERVIEW



BCM70010/BCM70012 Chipset Architecture

The BCM70010/BCM70012 chipset introduces the advantages of next-generation high definition H.264 and VC-1 video compression algorithms to PC applications like the playback of Blu-ray and HD DVD disks. The chipset is a single-stream HD AVC/VC-1/MPEG-2 decoder solution capable of full HD real-time decoding. The high performance and low power consumption of the solution allow reduced CPU utilization and support for mobile platform designs.

The chipset fully supports the MPEG-2 standard so that compatibility with existing media (DVD) can be maintained.

The chipset supports any compliant resolution from QCIF up to 1920x1088.

The chipset is available for motherboard designs as well as in module form:

- BCM970012NB–PCIe mini card
- BCM970012PQ–PCIe desktop adapter
- BCM970012IC–ExpressCard 34

VC-1

- Complies with the SMPTE 421M-2006 specification
- Supports Advanced profile Level three with a 40-Mbps maximum encoded bit-rate restriction.
- Supports Simple and Main profile decoding

H.264

- Complies with the ISO/IEC 14496-10 specification
- Support for AVC High profile streams up to Level 4.1 with a 40-Mbps maximum encoded bit-rate restriction
- I, B, and P slices
- CABAC and CAVLC entropy decoding
- Field/frame and picture adaptive decoding
- Macroblock adaptive field/frame decoding
- All intrablock and interblock sizes
- Supports Simple and Main profile decoding

MPEG-2

- Complies with the ISO/IEC 13818-2 specification
- Supports the Main profile up to High level at 125 Mbps

Strong Media Security

The chipset incorporates a security processor that allows player software to secure all transfers of premium media content over the PCIe bus.

In addition, all firmware is verified via a digital signature to ensure the integrity of the compressed media.

Unique keys stored in hardware allow each module to securely authenticate to playback software and maintain integrity of premium media content.

Broadcom®, the pulse logo, Connecting everything®, and the Connecting everything logo are among the trademarks of Broadcom Corporation and/or its affiliates in the United States, certain other countries and/or the EU. Any other trademarks or trade names mentioned are the property of their respective owners.

Connecting
everything®



BROADCOM CORPORATION

5300 California Avenue
Irvine, California 92617

© 2007 by BROADCOM CORPORATION. All rights reserved.

70010_70012-PB01-R

12/05/07

Phone: 949-926-5000
Fax: 949-926-5203
E-mail: info@broadcom.com
Web: www.broadcom.com