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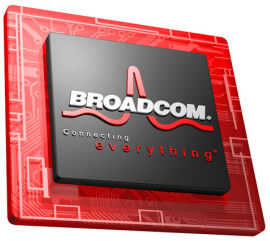
BCM11181 PRODUCT Brief



HIGH DEFINITION 720P MULTIMEDIA COPROCESSOR

FEATURES

- **Coprocessor for IP Communications Applications**
  - The BCM11181, coupled with the BCM11107 IP communications processor and PhonexChange™ voice, video, and multimedia software enables:
    - H.264, 30fps, WVGA (bi-directional) video phones
    - H.264, 30fps, HD (720p) (bi-directional) personal telepresence video phones (requires two BCM11181s)
- **High Definition (HD) Video**
  - HD (720p) H.264 encode and decode, both High Profile, at 30 fps
  - Supports all major video compression algorithms, including H.263, MPEG-4/2/1 and VC-1
  - Supports full-duplex H.264, H.263, and MPEG-4 video at WVGA resolution
  - Direct TV Connect
    - HDTV via HDMI with HD content protection (HDCP)
    - Component video, S-Video, and composite video
- **Graphics**
  - 2D/3D graphics accelerator to support rich user interface, including 3D icons and effects
  - 3D graphics hardware capable of 32 million triangles/second
  - Supports OpenGL® ES 1.1/2.0 and OpenVG™ 1.0 standards
  - Support for real-time 3D contour texture and image mapping
- **Hi-Fi Audio**
  - Supports all major audio standards, including MP3, AAC, AMR, WMA, and MIDI
- **Ultralow Power for Green Designs and Battery-Powered Applications**
  - Audio decode <10 mW
  - HD H.264 Video+AAC record <450 mW

Programmable Architecture

- Silicon-efficient, software programmable, dual-core, vector architecture allows in-the-field feature additions and codec upgrades.

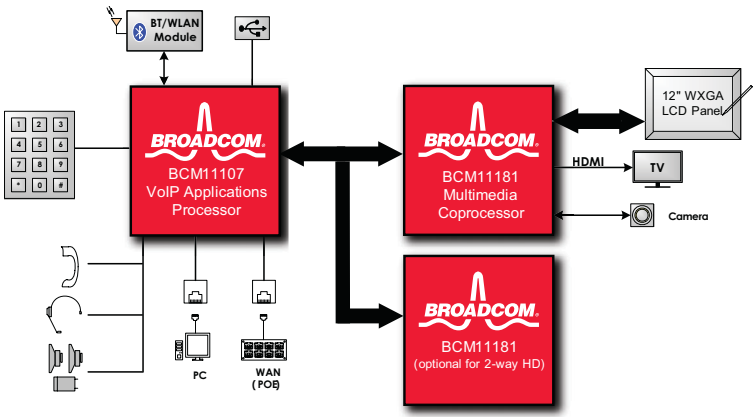
SUMMARY OF BENEFITS

- **Image processing power to support compelling image and video display, including 3D transitions and graphics**
- **Rich and immersive user interface acceleration with 3D menu features**
- **Video capture at high-quality HD 720p or VGA resolution**
- **Professional quality still-image capture from low-cost sensors and lens systems with high-performance, embedded Image Signal Processor (ISP)**
- **Video stream decode and playback up to HD resolution**
- **Broad consumer content interoperability with large preintegrated codec library and hardware digital rights management (DRM) support**
- **Extended listening and viewing sessions with power optimized VideoCore® III architecture. Low power consumption supports green designs.**
- **Field upgradeable to support emerging multimedia standards**
- **Rapid systems integration**
  - Broad range of integrated peripherals
  - Linux® operating system supported
  - OpenGL ES 1.1/2.0, OpenVG 1.0 and OpenMAX™ IL 1.1 software drivers and libraries
  - Complete product development kit with reference applications
  - Optional third-party partners to provide extra support, extended IP, and product adaptation

APPLICATIONS

- Media-rich telephony and service-over-IP (SoIP) products, including video IP phones, telepresence systems, and network-connected digital picture frames
- Advanced media players
- Personal navigation units

System Block Diagram



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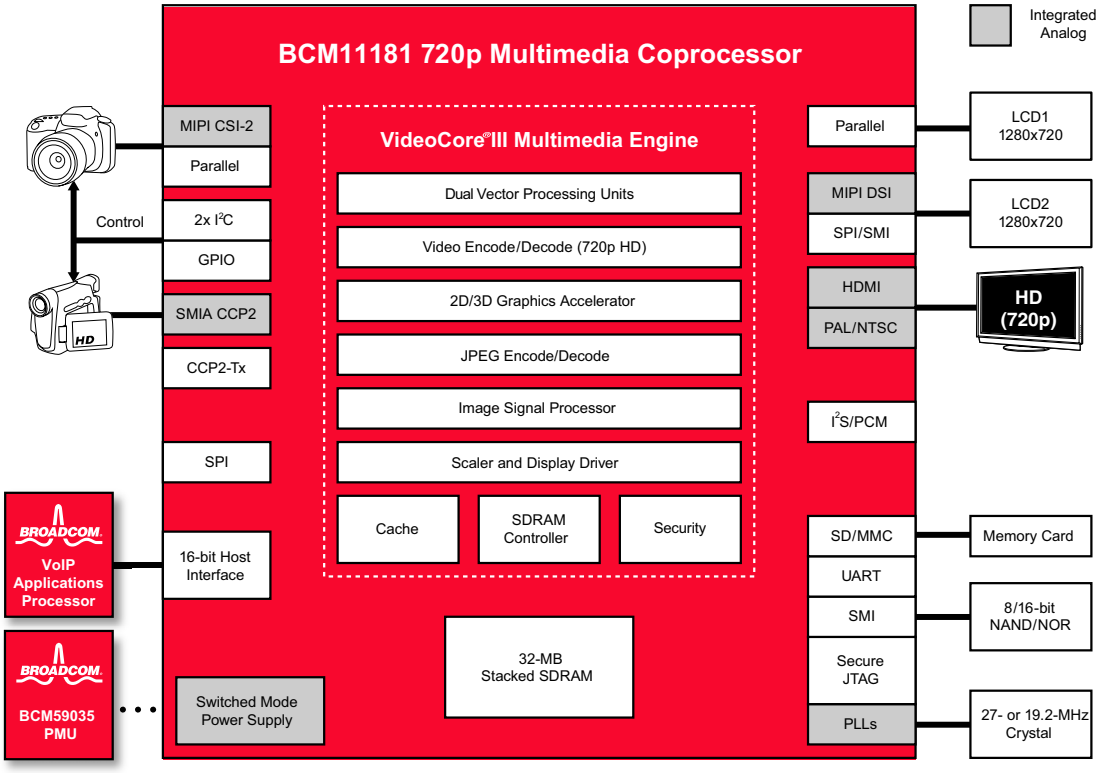
OVERVIEW



Functional Block Diagram

The BCM11181 coprocessor provides high-performance, high-quality multimedia features for consumer and enterprise voice-over-IP (VoIP) telephones and service-over-IP (SoIP) products, network-connected digital picture frames, and similar advanced multimedia products. The BCM11181 low-power design enables green desktop product designs as well as portable, battery-powered products.

The BCM11181, coupled with the BCM11107 VoIP applications processor and Broadcom's PhonexChange IP communications software, yields an ideal solution for providing advanced HD-quality multimedia and graphical user interface features for next-generation carrier-grade consumer SoIP products and video-capable enterprise VoIP products. A single BCM11181 can support HD video playback or video conferencing at up to WVGA resolutions. Adding an additional BCM11181 coprocessor enables high definition resolution video conferencing.

Video formats, including H.264, MPEG-1, MPEG-2, MPEG-4 ASP, and VC-1 (for WMV), can be played directly without transcoding. HDMI 1.3a with HDCP encryption and Component, S-Video, or Composite connections allow high-quality video playback on television displays. Recording 720p HD video is supported in H.264/MPEG-4 AVC High Profile format, resulting in a quarter of the storage required compared with MPEG-2 standards. While simultaneously recording HD 720p video and audio streams, power consumption is approximately 450 mW.

The BCM11181 delivers a high-quality imaging solution, exceeding the requirements of consumer portable digital cameras. An advanced on-chip ISP is capable of handling sensors up to 12 Mpixels with on-the-fly image processing at 120 Mpixels per second and JPEG compression at 10 full quality photos per second. Even with reduced lens and sensor quality, crystal clear images with good color balance in a wide range of lighting conditions are enabled.

Consumer and business products are moving to high performance 2D and 3D features to deliver a richer user interface and to offer compelling presentation of still-image and multimedia content. The BCM11181 incorporates a tightly coupled 3D graphics hardware accelerator that provides a complete OpenGL ES 2.0 solution capable of 32 million triangles per second and OpenVG 1.0 capable of 94 *tigers* per second. Low-power consumption is not compromised with graphics intensive applications.

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BROADCOM CORPORATION
5300 California Avenue
Irvine, California 92617

11181-PB00-R 03/13/09

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