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BCM3560 R(0) D



DIGITAL TV SYSTEM-ON-CHIP

FEATURES

• Complete Analog and Digital Television System-on-Chip

ATSC and Digital Cable Ready Compatible

- ATSC, 4-1024 QAM and Out-of-Band Receivers Direct CableCARD[™] Interface

On-chip Analog Signal Processing

- 3D Y/C Comb Separation
- On-chip IF Demodulator
- Dual NTSC/PAL analog video decoders Supports direct 480i, 480p, 720p, 1080i analog inputs
- BTSC Decoder

Integrated Video Processing

- Picture Enhancement Processor (PEPTM) Independent color and luma adjustment blocks Multiframe Per Pixel Motion Adaptive Deinterlacing
- **Digital Video and Audio Capability**
- ATSC-compliant, All-Format MP@HL MPEG-2 High Definition (HD) Video Decoder
- Dolby Digital and MPEG Audio Decoder
- Digital Video Input/Output supporting HD/SD and VESA formats

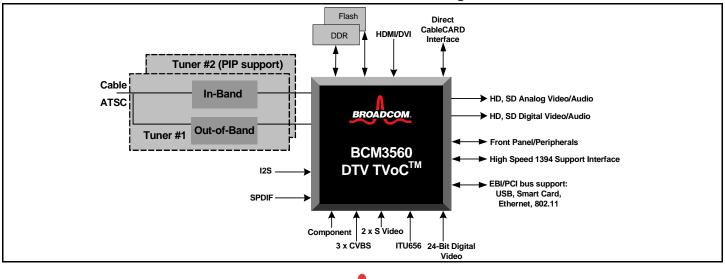
Picture-in-Picture NTSC/PAL HD/SD Video Encoder

- **Integrated Analog Circuitry**
 - On chip A/Ds for video, IF and OOB signals
 - Four DACs for baseband video outputs
 - Dual channel audio DACs for L-R audio
- Supports composite, S-video and analog component video inputs
- High Quality Graphics and Video Scaling capability
- Integrated HDMI/DVI Receiver with HDCP support
- On-chip 250 MHz 32-bit CPU

SUMMARY OF BENEFITS

- Highly integrated solution combining the functionality of a complete television on a single chip.
- Superior ATSC signal reception and demodulation under both static and dynamic multipath conditions.
- Integration of field proven QAM and out-of-band receivers.
- PEP advanced video signal processing provides an elevated viewing experience through edge and color enhancements.
- Motion adaptive per pixel deinterlacing produces superior • display of interlaced video on progressive displays.
- 3D/2D comb filter with per pixel adaptive motion detection • delivers superior Y/C separation.
- High quality on-chip video scaling provides extensive Picturein-Picture support and non-linear conversion of 4:3 images for display on 16:9 televisions.
- On-chip support to convert all inputs (480i, 480p, 720p, 1080i) to all outputs (480i, 480p, 720p, 1080i) in both digital and analog formats.
- Advanced graphics engine provides rich user interface • environment.
- Direct support for interfacing with LCD, Plasma and DLP panels preserves signal integrity and image quality.
- Comprehensive integration of A/Ds and DACs supports direct audio/video inputs/outputs simplifying system design and cost.
- Full peripheral support eliminates need for additional components including, LED/Keypad, smartcard, I²C/SPI master, IR receiver/blaster, PWM and dual UARTS.

BCM3560 Functional Block Diagram



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