



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 (PEP™)
 - 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 Picture-in-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

