



BCM7040 MPEG2 DIGITAL VIDEO/AUDIO ENCODER

BCM7040 FEATURES

- Single-chip NTSC/PAL MPEG-2 encoding system
- MP@ML MPEG-2 video encoder
 - Variable resolutions:
Horizontal: 720,704,640,544,480,360,320,160
Vertical: 480,240,112 (NTSC); 576,288,144 PAL
 - Variable frame rate, up to 30(NTSC)/25(PAL) fps
 - Supports constant/variable bit rates: 1–24 Mbps
 - Variable GOP length and structure: I, IP, IPB, IPBB
 - +/-100 pixels wide motion estimation search range
 - Automatic 3/2 pulldown detection
 - Video input: selectable 8/10 bits CCIR656
 - 4:2:2 to 4:2:0 conversion
- High-fidelity 24/56 bits programmable audio DSP
 - MPEG-1 Layer II stereo encoding
 - Dolby Digital (AC-3) stereo encoding
 - Programmable frequencies and bit rates (64–384 Kbps)
- Highly programmable system multiplexing processor
 - CBR/VBR program/transport stream multiplexing
 - User data/VBI insertion
 - Programmable stream parameters
- Video pre-processing
 - 7-tap vertical/horizontal luminance/chrominance filter
- Accurate 27-MHz video/audio/PCR time stamps for exact video/audio synchronization during playback
- Dedicated serial/parallel DVB transport stream interface
- I²S/AC-97 stereo audio inputs
- PCI 32 bit/33 MHz, PCI DMA master or PCI slave and 16-bit Generic Host interface
- Integrated I²C controller
- Package: 176-pin LQFP
- Supply voltage: I/O 3.3V (5V compatible)
- Power consumption: less than 1W
- System memory: SDRAM, 1 module of 2M x 32

SUMMARY OF BENEFITS

- Fully integrated MPEG-2 Digital Video/Audio Encoder and Video/Audio Multiplexer in a single chip drastically reduces overall system and development costs.
- Video/Audio Elementary, Video/Audio Packetized Elementary, Program, and Transport Streams are generated internally to the BCM7040.
- Broadcom third generation production of field-proven and in-production technology.
- Universal compatibility through standards compliance: Video Encoding (ISO/IEC 13818-2), Audio Encoding (ISO/IEC 11172-3, MPEG-1, Layer II and Dolby Digital AC-3) and System Multiplexing (ISO/IEC 13818-1).
- Broadcom-developed reference design kit includes application board, sample application, and drivers based upon industry-standard operating systems, enabling rapid and streamlined software and hardware development, reducing time to market.
- Simple system design: BCM7040 + single SDRAM.

APPLICATIONS

- Time shift/personal video recording (PVR):
 - Set-top boxes
 - Stand-alone PVRs
 - Television sets
- DVD recorders
- Digital VCRs (VCR replacements)
- PC TV tuners
- Digital camcorders
- Video transmission
- Video over IP
- Video conferencing
- Security and surveillance

