

4-in-1 Video Decoders with PCI Express Media Bridge

TW6865

The TW6865 is a highly integrated solution that supports multi-channel video and audio capture via PCIe x1 interface for PC DVR system and video analytic application. It contains high quality four-channel NTSC/PAL/SECAM video decoders that convert analog composite video signal to digital component YCbCr data, and utilize adaptive 4H comb filter for separating luminance and chrominance to reduce cross noise artifacts.

TW6865 contains a high performance proprietary DMA controller that fully optimizes the utilization of PCIe x1 bandwidth and enables it to transfer video and audio data at a high throughput rate that closely approaches the theoretical limit of PCIe1 interface. TW6865 is able to simultaneously decode and transfer 4 real time D1 video, or up to 16 channel non-real time D1, plus 8 channel audio.

TW6865 decreases the complexity and workload of client-side software development, and significantly reduces the strains on PC hardware and resources. TW6865 also includes a software development kit (SDK) with Windows and Linux compliant drivers and reference application software.

Features

Video Decoders

- Accepts all NTSC(M/N/4.43) / PAL(B/D/G/H/I/K/L/M/N/60) standards with auto detection
- Integrated eight video analog anti-alias filters and 10-bit CMOS ADCs
- IF compensation filter for improvement of color demodulation
- Color Transient Improvement (CTI)
- White peak AGC control
- Programmable hue, saturation, contrast, brightness and sharpness
- High quality proprietary fast video locking system for non-real-time application
- High performance adaptive 4H comb filters for all NTSC and PAL standards

Audio Codecs

- Integrated eight audio ADCs
- 8/16 bit audio word length
- Sample audio with 8/16/32/44.1/48kHz

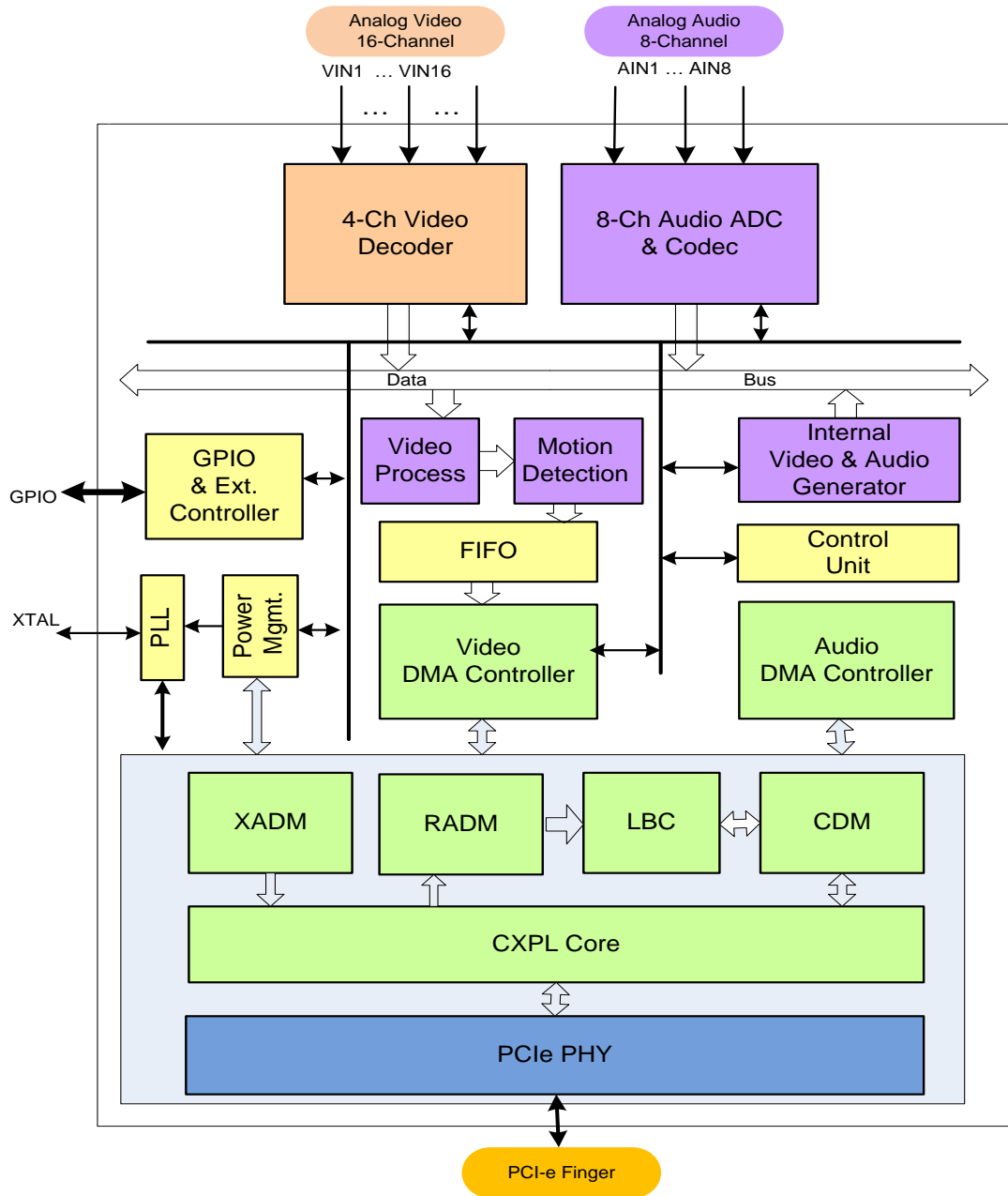
DMA Controller

- Highly-efficient DMA design can support up to 4 real time D1 video and 8 real time audio channels, or up to 16 non-real-time video with optimization of full PCIe1 bandwidth
- Multiple video format output support: UYVY/Y422, YUYV/YUY2, IYU1/Y411, Y41P, YUV420, RGB555 and RGB565
- Integrated internal video and audio generator simplifies system test and development
- Built-in motion detection engine for each video channel
- Hardware-friendly design enables smooth data transfer and virtually eliminates unwanted big-block data jamming among PC devices, resulting in optimized PC internal bandwidth consumption
- PCIe Configurations
- PCI Express Base Specification 1.1 Compliant
- Flexible PCIe packet size configuration: 128 byte, 256 byte and 512 byte options

Applications

- PC-based DVR system
- Video analytic system

Block Diagram



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