Vaddis® 7

Driving the Digital Lifestyle

Advanced Featured DVD SoC

| DVD | Digital Camera | Digital TV | Imaging | IP Cores |

ZR36778
Product Brief

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ZORAN®

Overview

Vaddis 7 is an advanced DVD multimedia processor SoC, which enables a new generation of DVD players to play DivX, XviD, MPEG-4, and DVD-Audio content. It is the newest member of the Vaddis product line with a unified shared memory architecture controlled by a single internal CPU. Zoran customers can leverage their current software and system development to deliver new features and new products.

The Vaddis 7 integrates video and audio post processing to enhance the entertainment experience. De-blocking and de-ringing maximizes the video quality by reducing artifacts in low bit rate streams. Audio post processing such as bass management and 3D enhance the listening experience.

This SoC enables new system features such as direct FLASH card interfaces and HDMI output (when used with Zoran's HDXtreme™ ZR36721). This flexibility makes Vaddis 7 ideal for DVD standalone, combo, and portable DVD players.

DivX Support
Vaddis 7 utilizes hardware accelerators for maximum DivX performance and compatibility; playing streams of up to 10 Mbits per second at full D1 resolution and 720x480 @ 30 frames per second. With support for Quarter PEL (QPEL) and Global Motion Compensation (GMC), it provides full compatibility with high-resolution streams.

HDMI
High Definition Multimedia Interface is an emerging display standard enabling a fully digital high definition video and audio connection from the DVD player to an HDTV. When the Vaddis 7 is used with the Zoran HDXtreme IC (ZR36721), DVD performance is delivered in a cost optimized solution. JPEGXtreme™ enables the viewing of JPEG images in high resolution on an HDTV screen.

DVD-Audio
Vaddis 7 supports DVD-Audio including decryption, decoding, and audio post processing functions. This SoC performs CPPM decryption, Meridian Lossless Packing (MLP), LPCM decoding, and bass management. The full fidelity offered by DVD-Audio is available with the use of 192kHz / 24-bit audio DACs.

FLASH Card Applications
A direct interface from Vaddis supports Secure Digital (SD), Memory Stick (MS), Compact Flash (CF), and XD eliminating the need for an external interface IC and reducing system cost. Vaddis 7 supports playback of JPEG, MP3, WMA, and MPEG-1/2/4 files from Flash.

Single Pixel Processing (SPP) Progressive Scan
Zoran's proprietary progressive scan technology enables exceptional video quality for viewing on a progressive scan television. SPP enables pixel-by-pixel processing of the video, while the Vaddis applies high quality deinterlacing to all areas of the scene, including areas with limited or high motion. In addition to four 10-bit 54 MHz DAC outputs, the Vaddis has a digital video output supporting progressive digital video out.

Enhanced Audio Capability
Vaddis 7 incorporates a 135 MHz 32-bit audio processor enabling post-processing audio applications. It is capable of supporting the following audio standards: Dolby Digital, Pro Logic I/II, DTS, MPEG Layer II, multi-channel LPCM, CD-DA, MP3 and Microsoft Windows Media Audio (WMA). In addition, audio post-processing algorithms from Zoran's SiliconSoftware® library can be applied to enhance the listening experience. These algorithms include Virtual Surround Sound, 3D Headphones, Graphic Equalization, Karaoke and Music Modes. Virtual Surround Sound gives the listener a multi-channel effect using only two speakers.

S/PDIF Receiver
The integrated S/PDIF receiver makes Vaddis 7 optimal for DVD-Receiver applications. The S/PDIF audio signal from a set-top box or other source can be decoded (e.g. Dolby Digital or Dolby ProLogic II) using the embedded audio processor.
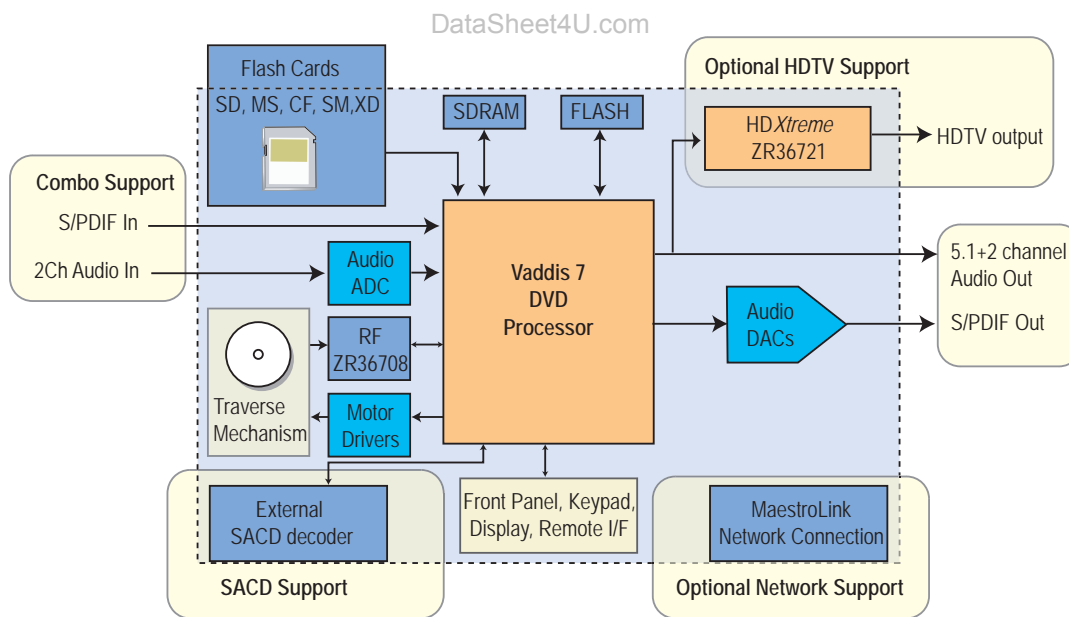

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Key Features

- DivX versions 3.x, 4.x, and 5.1, XviD full-D1 support (with QPEL and GMC support)
- MPEG-4 720x480 @ 30fps (with QPEL and GMC support)
- Full DVD-Audio support: CPPM, MLP/LPCM, Audio Watermarking
- Single Pixel Processing (SPP) Progressive Scan Video Output
- Interlaced Digital Video out (CCIR656)
- Progressive digital video out enabling HDMI solution with ZR36721 HDXtreme
- Accelerated JPEG decoding, simultaneous JPEG and MP3 decoding for slide show
- Supports JPEGXtreme to enable high-resolution image display on HDTV with ZR36721 HDXtreme
- Direct interface to FLASH memory cards (Secure Digital, Memory stick, Compact Flash, Smart Media and XD)
- Proprietary video post processing filters for improving quality of low bit rate MPEG streams
- Integrated S/PDIF receiver
- Supports: DVD-Video, DVD-Audio, DVD-RW, DVD+RW, CVD, SuperVCD, VideoCD, DVCD, Audio CD, Kodak PictureCD

- Dolby Digital, Pro Logic, Pro Logic II, DTS, MPEG 5.1, HDCD, WMA Audio Decoding
- ZoranZoom™ and panning
- Image Enhancement: Sharpness and Brightness Adjustments and Gamma correction
- 8-Channel and S/PDIF Audio Outputs
- Virtual Surround Sound, 3D Headphones, Music Modes
- Enhanced Karaoke
- Flexible support for OPUs and mechanisms
- Embedded NTSC/PAL encoder w/four video DACs
- Software compatible with Vaddis family
- On-Screen Display (OSD) processor with up to 256 entries of 24-bit YUV color palette and 3-bit transparency
- Interfaces for front panel and IR remote I/O
- External Flash/ROM/Peripheral Interfaces
- Supports 32, 64 and 128-Mbit SDRAM configurations
- 208-pin PQFP Package
- 1.6 W power consumption during typical operation
- Enables system power consumption of less than 0.1W in standby mode

For more information, contact Zoran's Sunnyvale office or the office nearest you:

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