Product Brief

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Overview

BENEFITS OVERVIEW

Zoran's Activa 150 DVD Recorder Multimedia Processor combines high-quality, best-of-class DVD playback capability with Zoran's exclusive authoring engine. Activa 150 is specifically designed to enable easy-to-use, yet robust authoring of DVD-Video and DVD+/-VR formats for mainstream consumer audio/video products.

DVD recorders based on Zoran's Activa 150 provide:
- Support for all DVD recordable formats DVD+R/+RW, DVD-R/-RW, DVD-RAM
- Intuitive, consistent OSD for use with multiple devices (ODD, HDD, flash card, etc.)
- Support for Electronic Program Guide (EPG)
- 100% compliance with vital industry format verifiers to ensure compatibility with the large DVD player installed base

The Activa 150 is specifically designed to support standalone DVD recorders and a broad range of value added applications including:
- Wide array of disc format support, including MPEG-4 and DivX
- HDD/PVR functionality
- HDMI digital output with HDCP
- HD-JPEG
- USB connectivity
- Flash card connectivity
- Gemstar EPG

The Activa 150 is the ideal IC solution for DVD recorders, digital entertainment media centers, MaestroLink network enabled products, combo DVDR systems (DVDR+HDD, DVDP+HDD, VCR+PVR, TV+PVR, STVB+PVR), and PC capture/edit cards.

Features Description

DVD PROCESSING

The Activa 150 is the ideal solution for universal DVD recorders, as it provides full support for DVD-Video and DVD-Audio playback, DVD-Video and DVD+/-VR authoring, and copy protection. This single-chip solution performs DVD demultiplexing and parsing, MPEG-1/2/4/DivX video decoding, subpicture decoding, highlight processing, and audio/video synchronization.

Content Protection for Prerecorded Media (CPPM) and Content Protection for Recordable Media (CPRM) support is integrated. The graphics processor and OSD units provide great flexibility in creating sophisticated EPG and user interfaces, which at the same time, are easier to use than competing solutions.

A unique capability of the Activa 150 is to deliver high-quality, intelligible, 1x-2x variable audio playback while in fast forward mode, effectively allowing the consumer to digest a movie in faster than real-time.

DVD A/V RECORDER PROCESSOR

The Activa 150 is the cornerstone of a digital recorder system. With 128Mb-512Mb of SDRAM support and integrated RISC CPU, real-time authoring of DVD-Video and DVD+/-VR is simplified.

The larger memory also allows for various watch and record options, such as best quality variable bit rate (VBR) encoding simultaneous with DVD disc playback, as well as HDD playback with DVDR disc record. The flexible Activa 150 architecture supports DVD-R/-RW/-RAM/+R/+RW and CD-R/-RW formats.

For content security, Content Protection for Recordable Media (CPRM) is provided. Additional proprietary security is provided for protecting content to HDD and networked content via Maestrolink.

The high-performance ATAPI interface allows up to two drives (DVD+-Rx and HDD), allowing multiple product SKUs by just changing the drives and software.

DivX DECODING

Activa 150 has hardware accelerators for optimal DivX decode performance and compatibility. Activa 150 can play streams up to 10Mbps at up to 720x480/30fps. With support for Quarter PEL (QPEL) and Global Motion Compensation (GMC), it provides full compatibility with high resolution streams.

HDMI OUTPUT I/F

High Definition Multimedia Interface is an emerging display standard to allow direct digital high definition connections between the DVD recorder and the display. When used with Zoran's companion HDXtreme IC (ZR36721), Activa 150-based products deliver a stunning high definition video quality from standard definition content. In addition, JPEGXtreme™ allows the viewing of JPEG images in native HD (2MP) resolution.

MAESTROLINK NETWORKED MULTIMEDIA

The Activa 150's powerful bit stream processing capabilities make it ideal for a digital recorder-centric A/V client or server enabled by Zoran's MaestroLink technology. Other applications, such as video-on-demand and home networking, are also supported.

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Features Summary

General
- Single-chip solution for DVD-Video/DVD-Audio/MPEG-4/DivX playback, and DVD recorder processor
- Powerful, integrated 135 MHz 32-bit RISC processor
- DVDR application and user interface is rich and intuitive
- Enables timeshifting and "Watch and Record" applications

Recording
- Supports real-time DVD-Video, DVD-VR, and DVD+VR authoring
- 100% compliant with DVD-Video, DVD-VR, and DVD+VR verifiers
- Supports DVD-R/-RW/-RAM/+R/+RW, CD-R/-RW formats
- Certified Dolby Digital Consumer Encoder
- CPRM and other encryption for strong content protection
- Dual ATAPI drive support for DVD+/-Rx, HDD
- Picture-in-Picture for external source preview
- 128Mb to 512Mb SDRAM configurations available

Video
- Supports DVD-Video, DVD-Audio, MPEG-4, DivX, XviD, CVD, SVCD, VCD, DVCD, CDDA, Kodak PictureCD Decoding
- Decode of DivX versions 3.x, 4.x, and 5.1, XviD full-D1 (with QPEL and GMC)
- Decode of MPEG-4 720x480 @ 30fps (with QPEL and GMC)

- NTSC/PAL/480P encoder with six 10-bit video DACs
- Glueless HDMI i/f to ZR36721 (HDXtreme™)
- JPEGXtreme enables image display at true HD resolution w/ZR36721

Graphics
- Up to 256 entries of 24-bit YUV color palette and 3-bit transparency
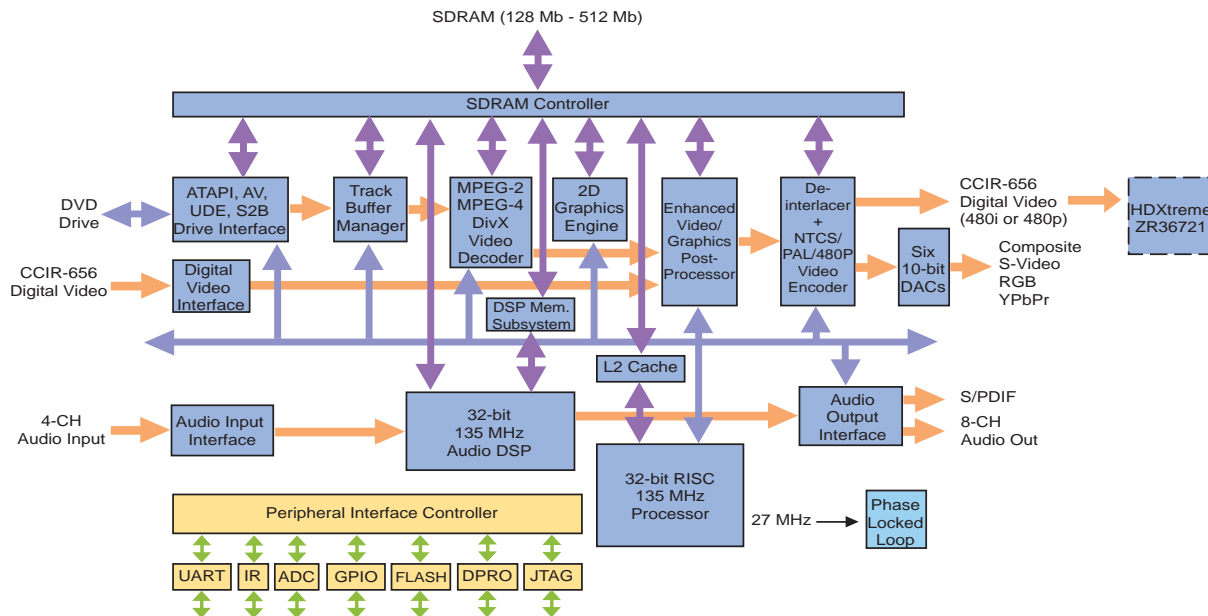- Gemstar VCR+/G-Code and Interactive Program Guide (IPG/EPG)

Audio Playback
- High-performance 135 MHz 32-bit Audio DSP
- 1x-2x variable audio playback speed while in fast forward mode
- Dolby Digital, Pro Logic, Pro Logic II, DTS, MPEG 5.1, HDCD, WMA Audio Decoding and virtual surround sound
- 8-Channel, S/PDIF Audio Outputs, 4-Channel Audio input

Other
- 2.1W power consumption in full operation
- 316-pin BGA package
- Green and lead-free (Pb-free) packaging
- Part number: ZR36750BGCG-V

Activa 150 DVD Recorder Reference Design

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

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