
ARIES 3 DVD Player REFERENCE DESIGN

FEATURES

- Complete DVD Player Reference Design
- Powered by VM Labs' ARIES 3 DVD Decoder
- Full support for DVD-Video, Video-CD, HDCD, CD-DA, and CD-ROM (MP3)
- Low-cost design for entry-level and mid-range products
- Fully compatible with NUON interactive content
- Comes pre-loaded with latest DVDplus Firmware
- Complete kit includes Power Supply, DVD Loader, MPEG board, Front-Panel board, Remote Control Unit, NUON Compatible Joystick Controller, Sample NUON Interactive Demo Disc, and one NUON Interactive Hollywood Movie.
- Comes with complete documentation, schematics, layout, all design files and application notes
- Supplied with standard overlay-type Graphical User Interface template. GUI design/customization toolkit also available.

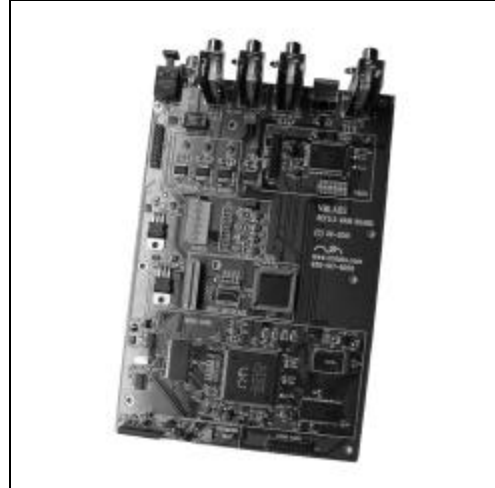


Figure 1: The Aries 3 DVD Reference Design

DESCRIPTION

The Aries 3 DVD Reference Design is a complete example DVD player product. The player has been designed both to assist customers in the evaluation of VM Labs' Aries 3 DVD Multimedia Processor, and to allow the rapid development of low-cost and step-up DVD player products.

The design is based on VM Labs proven Aries Decoder architecture and the associated DVDplus Firmware, which ensures that the player delivers the highest quality video playback and the best DVD feature-set available today.

The player is fully NUON Compatible, allowing the playback of NUON interactive content such as 3D games, enhanced Hollywood movies, and other entertainment applications.

The DVDplus Firmware supplied with the unit includes one standard overlay-type UI that allows easy access to and control of all the player features. The UI is customizable and allows changes to the color and insertion of a brand or manufacturer logo.

The Aries 3 DVD Reference Design uses example high quality and readily available components. The design is provided with all the necessary files to allow manufacturers to modify the basic design to meet their own component preferences or sourcing requirements.

The unit is provided without a case to facilitate easily building the player into an existing DVD player housing to create customized demonstration units.

The unit ships with the latest model 503R DVD loader from Thomson OKMCO. This drive offers excellent reliability and error recovery to ensure data access from the widest variety of discs. Support is also available for ATAPI and other industry standard DVD loader types. Please contact VM Labs directly for more information on using the reference design with other drives).

The Aries 3 DVD processor on the MPEG main board is the heart of the DVD player. In addition to the video and audio decode and trick-play functions, the Aries 3 processor also performs all system management and CPU functions. Data read from a disc is passed from the drive to Aries 3 where it is decoded and output digitally to the video encoder and audio DACs. User control of the player's functionality comes from inputs received through the front-panel. Aries 3 interprets these commands and initiates the appropriate action and responses.

The main board consists of the Aries 3 decoder, 2x 64Mb of SDRAM (which enable the player to be NUON Compatible), 2MB of flash memory (contact VM Labs for instructions on developing systems with only 1MB of flash), a video encoder, 2 to 8 audio DACs, and ancillary components.

The Aries 3 Reference design provides the quickest route for development of DVD players based on a proven architecture and incorporating the latest playback feature-sets.

DVD PLAYBACK FEATURES

Basic DVD Playback and Trick-Play Functions

The Aries 3 Reference Design provides an extensive list of high quality playback features for DVD and VCD including – Stop, Play, Pause, Frame Advance (step), Fast-Forward and Fast-Rewind (2x, 4x, 8x, 16x, 32x, 64x, 132x), Smooth –Reverse (1x rewind with full motion decode), Slow-Forward and Slow-Reverse (1/2x, 1/4x, 1/8x), and Repeat A-B

Enhanced DVD Features

Frame-by-Frame Real-time Strobe, Infinite Zoom with pan and scan, Virtual Light Machine (turns standard audio CDs or MP3s into exciting graphics), Advanced Speaker Set-up, Powerful and Compelling on-screen User Interface

Audio Modes

The Aries 3 Reference Design will recognize and decode the following audio formats – Dolby Digital (AC-3), Dolby ProLogic, DTS (S/PDIF output), MPEG 2 multichannel, MPEG 1 (MP3), HDCD, CD-DA, LPCM

Graphical User Interface

The Reference Player includes a high-quality onscreen user interface to allow set-up and control of the players regional and decode options. This UI is fully customizable using a UI toolkits available direct from VM Labs. VM Labs also offers UI design and verification services

Navigation and Compatibility

The Labs proprietary DVDplus Firmware provided with the Reference player includes high-quality DVD navigation software that has been proven in mass-production products.

VM Labs continually tests for title compatibility against all major DVD releases, and regularly monitors DVD title compatibility against the DVD catalog. Firmware upgrades are made available whenever it is determined that there is a playability error – usually with titles that fall outside of the DVD book standard.

DELIVERABLES

Reference Design Components

Aries 3 MPEG main-board, front-panel PCB including VFD, power supply unit (110V), DVD loader, remote control unit, NUON joystick controller, NUON interactive demo disc, NUON hybrid Hollywood title.

Documentation

Reference player applications note; Reference player feature walk-through; NUON DVD reviews; VM Labs contact sheet; VM Labs NDA

Schematics and Gerber Files

Schematic files for all PCBs in Orcad 9.X format to allow modification of the reference design.

Gerber files for all PCB layouts to allow manufacture without modification

Bill of Materials

Complete Bill of Materials list for all components used in the design to assist in accurate assessment of manufacturing cost

DVDplus Firmware

The player comes with the DVDplus Firmware loaded into flash memory. The firmware supports all features outlined in this document. A binary image is also provided for the firmware to allow for replication.

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