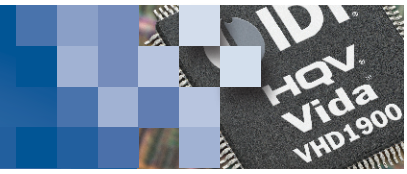

HQV® Vida™ Advanced Video Processor

Third Generation Hollywood Quality Video® (HQV®) technology provides a new standard for video processing and powerful clean up of lower quality, highly compressed video.

Benefits of Vida video processor

- Significantly and automatically improves user viewing experience
- Powerful on-the-fly clean-up of streaming video, regardless of source

Applications for the IDT Vida processor include:

- Blu-Ray Disc players
- Set-top boxes
- Audio-video receivers
- Personal video recorders
- Digital TV
- Digital media adapters
- Media player docking stations
- Video processing boxes

Description

The highly integrated IDT HQV® Vida™ advanced video processing IC provides a new standard in high quality video processing. Featuring the next generation of IDT HQV video processing algorithms for noise reduction, motion adaptive de-interlacing, scaling and detail enhancement, the Vida processor also offers several new enhancements:

- **HQV StreamClean™** is a powerful new noise reduction technology that incorporates adaptive mosquito noise reduction, block artifact reduction and temporal noise reduction to selectively reduce difficult-to-remove image artifacts from lower quality, preprocessed video sources.
- **HQV Resolution Enhancement** technology generates pristine and detailed upscaled images to make standard definition content look near-HD in quality and even further enhances detail in HD content.
- **Auto HQV™** enables hands-free adjustment to optimize image quality of content from different sources or content that varies in quality. Auto HQV analyzes the video content and adaptively adjusts image and noise processing parameters to optimize image quality and reduce artifacts.

The IDT Vida processor also features 14-bit internal processing and 12-bit output for deep color processing, and 3D gamut conversion for xvYCC processing. These capabilities provide accurate conversion of regular and wide gamut content to the display's native gamut. In addition, it features 6-axis color control with independent adjustment of any color's hue and saturation.

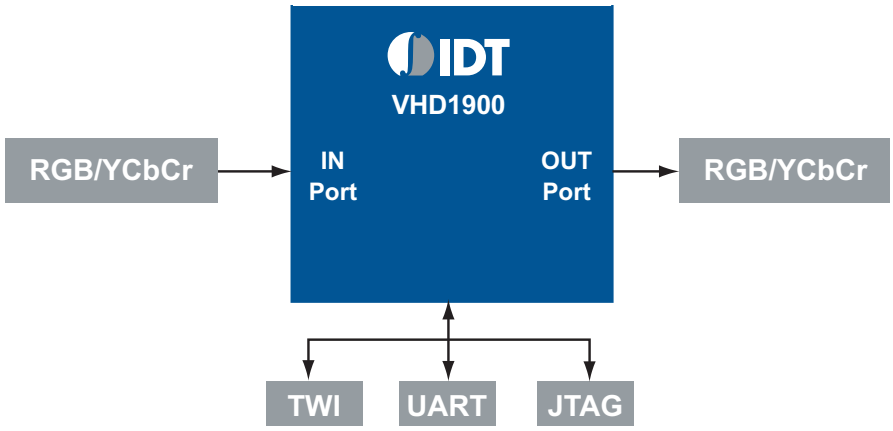

Figure 1. IDT HQV Vida image processor block diagram

Features

Advanced noise reduction

The powerful HQV noise reduction algorithms use advanced adaptive motion, power and spatial estimation techniques to selectively reduce image artifacts. The following noise reduction algorithms are available:

- Temporal noise reduction (TNR)
  - Film grain, random noise and sensor noise
- Block artifact reduction (BAR)
  - Block Artifacts caused by over compression
- Mosquito noise reduction (MNR)
  - Noise around the edges of objects due to compression losses

Motion adaptive video processing

- Four-field, motion adaptive, de-interlacing
- Multi cadence support
- Adaptive motion processing for trick-mode play and poor quality video

Scaler and resolution enhancement

- Edge-adaptive up-scaling
- Per-pixel resolution enhancement
- Support for wide, zoom and non-linear panoramic scaling

Adaptive contrast enhancement

- Optimizes image dynamic range
- Improves black and white level detail

Advanced color support

- 12-bit color space conversion on input and output
- 12-bit color Gamma conversion
- xvYCC/custom display color gamut mapping
- Full 6-axis hue and saturation control
- Hue, saturation, brightness and contrast (HSBC) adjustment

High bandwidth input and output

- 36-bits/pixel deep color input and output
- Input and output resolutions up to a maximum of 1920 x 1080p at 60 Hz (video) and 1920 x 1200 at 60 Hz with reduced blanking (graphics)

System support

- No external DRAM memory or Flash required
- Integrated micro-controller

Packaging

- Compact 128 pin TQFP package

Part number

- IDT VHD1900EVG

Applications support kit

- Vida video processor evaluation board
- PC based configuration software
- Complete user's guide
- Reference schematics
- Bill of materials

Discover what IDT know-how can do for you.

www.IDT.com/go/Vida

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