



REON VX

Advanced Image Processor

FEATURES

HQV IMAGE PROCESSING

- True 1080i-to-1080p four field motion adaptive de-interlacing
- Multi Directional Diagonal Filtering (MDDF)
- Automatic per-pixel film and video detection
- Automatic film 3:2 and 2:2 cadence detection
- Edge anti-aliasing
- SD Codec Noise Reduction
- 3D temporal pixel motion and noise adaptive processing
- Adaptive Image Contrast Enhancement
- Color Spectrum Control

SUPPORT FOR GRAPHICS RESOLUTIONS UP TO WUXGA

- Graphics input and output up to WUXGA
- Video input and output up to 1080p

TRUE 10-BIT PROCESSING END-TO-END

- 10-bit resolution throughout
- Extended image dynamic range
- Accurate reproduction of over 1 billion colors

HIGH QUALITY TWO-CHANNEL PROCESSING

- Dual-channel HD/SD de-interlacing
- Advanced picture-in-picture (PIP) and split-screen windowing modes

HIGH-PERFORMANCE EMBEDDED RISC CPU

- System control, algorithm flow management, and OSD generation
- 2D graphics acceleration and advanced animation
- Integrated Web server support for remote access and statistics gathering

EWARP VX GEOMETRY PROCESSING

- AnyPlace™ extreme 80 degree horizontal and 60 degree vertical off-axis keystone correction
- Continuously variable 2D scaling from 1/4 shrink to 8x zoom
- Support for up to 20% lens pincushion and barrel distortion correction
- Edge blending
- Electronic pan, tilt, and zoom of real-time video

SYSTEM CONNECTIVITY

- PCI rev 2.2, USB OTG, GPIO, UART, and two wire serial interfaces
- 32-bit or 64-bit DDR I or DDR II interface @215MHz

PACKAGE

- 27 x 27 mm, 580-ball PBGA, lead free

HQV™ IMAGE QUALITY FOR

ADVANCED CONSUMERS DISPLAYS

Reon VX is a highly integrated SOC which is targeted for high-volume display applications. Reon VX is the next generation of advanced video processor from Silicon Optix and delivers the Hollywood Quality Video (HQV) experience to consumers at a cost effective price point. Reon VX is the first video processor in its class to include codec noise reduction and color spectrum controls as standard on-chip features.

Reon VX features true four-field motion adaptive de-interlacing and advanced multi-directional diagonal filtering to provide best-in-class de-interlacing of standard definition and high-definition signals.

The advanced scaling capability of the eWARP VX Engine enables the delivery of superior quality, artifact free video for the highest fidelity consumer experience in home entertainment products, including plasma TV, LCD TV, RPTV, home theater projectors, AV receivers, and DVD players.

Reon VX has a fully independent secondary video path that enables dual video or graphics inputs to be independently processed and positioned anywhere on the display in PIP/PAP/POP formats. It also contains a powerful OSD engine with pixel or area based transparency mapping.

An embedded 179 MHz RISC CPU provides the central control for the chip and manages many I/O interfaces, including a USB OTG (On-the-Go) controller. These features simplify system design and enable competitive mainstream products with no compromise on feature sets.



HQV TRUE 1080i-to-1080p DE-INTERLACING

Rather than discarding half the resolution of high-definition (HD) images, as today's image processors typically do, HQV technology uses the full four-field processing window for HD video deinterlacing and cadence detection, thus preserving the rich details in HD imagery.

HQV SD/HD MULTI-DIRECTION DIAGONAL FILTER (MDDF)

A true 10-bit diagonal interpolator that removes any "jaggies" and/or stair-stepping artifacts from de-interlaced video sources, without blurring the image.

HQV NOISE REDUCTION

A fully automatic per-pixel adaptive software algorithm that adds a fourth dimension of pixel-by-pixel noise and motion measurement, detecting and reducing the analog and MPEG noise that currently plagues DVD and broadcast sources.

HQV DETAIL ENHANCEMENT

Watching standard definition (SD) images on HD displays often produces a blurring effect resulting in a disappointing visual experience. HQV detail enhancement improves the image detail on a pixel-by-pixel basis, delivering SD that approaches HD quality.

HQV AUTOMATIC FILM MODE CADENCE PROCESSING

A quantum improvement in automatic handling of film and video sources such as 3:2 and 2:2 sequences common to broadcast and DVD. HQV cadence processing ensures that users will be viewing film and video sources in the original format without loss of resolution. HQV technology is first to offer 3:2 insertion that is needed for the new HD Blu-Ray and HD-DVD formats coming soon to the consumer market.

HQV AUTOMATIC PER PIXEL VIDEO/FILM DETECTION

Rather than making frame level decisions for video vs. film processing, often causing artifacts in video titles over film backgrounds, HQV makes pixel-level decisions, processing film pixels as film and video pixels as video.

HQV COLOR SPECTRUM CONTROL

Selective color region enhancement allows certain regions (e.g. skin tones) to be accentuated. Reon VX also contains advanced color edge enhancement that corrects artifacts due restricted chroma bandwidth and provides full detection and correction for Chroma Upsampling Errors.

TRUE 10-BIT PROCESSING

Reon VX offers a complete input-to-output 4:4:4 color processing and a full 10-bit internal data path, thus enabling the rendering of over 1 billion colors.

EQUAL QUALITY TWO CHANNEL PROCESSING

Reon VX's powerful image processing engines can process two full HD or SD resolution channels thus enabling equal image quality for each video window in PAP mode.

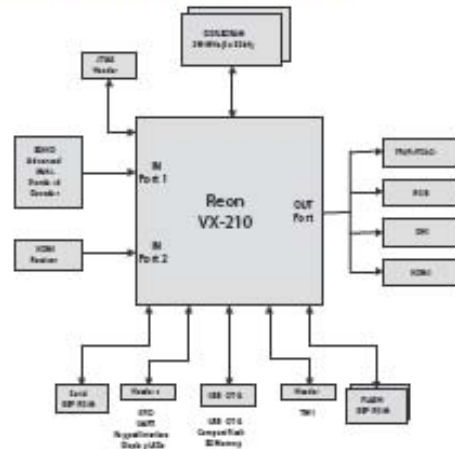
EWARP VX GEOMETRY PROCESSING

For applications requiring image warping, the Reon VX proprietary eWARP VX engine allows for AnyPlace flexible projector placement while maintaining the highest quality graphics, fine text, and crisp HD video.

REONVX SKU TABLE

SKU	Number of Channels	HQV NR	eWarp VX Engine	Output Resolution
Reon VX-50	1	Yes	No	WUXGA/1080p
Reon VX-51	1	Yes	Yes	WUXGA/1080p
Reon VX-110	2	No	Yes	SXGA/720p
Reon VX-200	2	Yes	No	WUXGA/1080p
Reon VX-210	2	Yes	Yes	WUXGA/1080p

REONVX SYSTEM DIAGRAM



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