

## Technical Specifications

### INPUTS

- 2x Composite Video (CVBS), NTSC PAL & SECAM.
- 2x YC/S-Video, NTSC PAL & SECAM.
- 2x Component analog video YPbPr or RGBS for SD, ED & HD.
- 2x HDMI with HDCP, also compatible with HDCP DVI using appropriate third-party cable. HDMI input supports up to 8 embedded audio channels.
- 1x SVGA analog, 640x480 to 1280x1024 via 15HDD for PC or games system.
- 2x TosLink fiber-optic audio link.
- 2x S/PDIF digital coaxial audio.
- 4x 2 channel analog audio.

### One Expansion module can be fitted, available modules are:

- 1x or 2x HD-SDI serial digital component video via single BNC, also supports SD-SDI or
- 2x additional HDMI channels to give a total of 4 HDMI.

### SUPPORTED INPUT FORMATS

HD 720p, 1080i, 1080psf, 1080p24, 1080p25 and 1080p30 @ 60Mhz

HDMI only - 1080p50, 1080p59.94, 1080p60

ED 480p, 576p (not SDI option).

SD 576i (625i), 480i (525i).

VESA graphics formats from 640x480 to 1280x1024.

Full multistandard support for Composite & S-Video in NTSC, PAL & SECAM formats with automatic standard recognition.

Graphics inputs feature automatic image optimization capability as well as user-controllable configuration.

### OUTPUTS

- 1x Analog RGBHV via 15HDD connector.
- 1x HDMI with HDCP. HDMI output supports up to 8 embedded audio channels, backwards compatible with DVI using standard adapter cables (not supplied).
- 1x TosLink fiber-optic audio link.
- 1x S/PDIF digital coaxial audio.
- 1x 2 channel analog audio.

Note: With HDMI/DVI HDCP input active, the only active video output is HDMI/DVI with HDCP. S/PDIF digital coaxial audio and TosLink fiber-optic audio outputs are simultaneously provided with an HDCP encrypted HDMI audio input/output but are non-recordable due to copy-protection requirements. This is necessitated by the HDCP licensing rules. Please ensure your display device is HDCP compatible if you wish to connect HDCP encrypted source devices to Vantage-HD.

### SUPPORTED OUTPUT FORMATS

Output resolution user selectable from 640x480, 800x600, 852x480, 853x480, 1024x768, 1024x1024, 1280x720, 1280x768, 1280x1024, 1360 x 768, 1365x768, 1366x768, 1366x1024, 1400x788, 1400x1050, 1920x1080, 2048x1080. User configurable custom output timings are also available.

### USER CONTROLS

- Front-mounted navi-keypad with on-screen display.
- Remote control via IR remote (included).
- RS232 serial control for use with third-party control systems.
- USB port for uploading firmware updates.

### POWER REQUIREMENT

Vantage-HD has a separate lap-top style power pack so as to ensure mains hum, transients and spikes are not introduced into the audio or video circuitry. This power pack provides a smooth, regulated DC supply to Vantage-HD from 100-240VAC power outlets. Power consumption is approx. 50W max.

### WARRANTY

1-year return to base warranty covers parts and labour, shipping excluded.

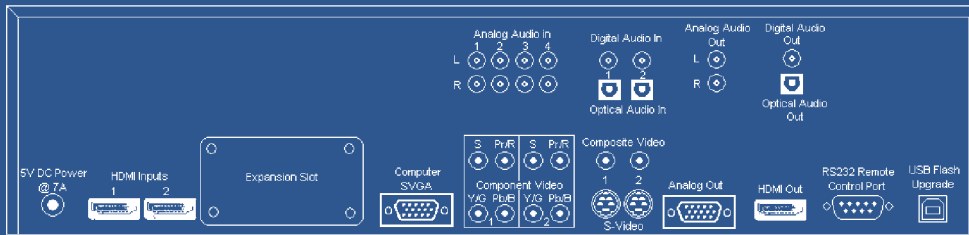


### PHYSICAL INFORMATION

Vantage-HD looks great with its designer-styled black-on-black front panel. The all-metal case is functional too since it provides excellent screening between Vantage-HD and any other equipment such as amplifiers and audio processors.

Approximate dimensions for Vantage-HD are 16.4" wide, 10" deep, 3.5" tall, excluding connectors and switches.

Allow at least 2" clearance at the rear of Vantage-HD for cable connections. Vantage-HD has side vents around which air needs to be able to circulate, allow at least 0.5", ideally 1" or more at each side for cooling.



## CALIBRE - creating technology for tomorrow's world today

Established since 1988, Calibre designs and manufactures specialist LCD displays and image processing devices for OEMs active in markets such as aerospace, premium in-flight entertainment, military surveillance and radar, process control and surgical/medical applications.

Vantage-HD now brings Calibre's huge wealth of video processing expertise to the home theater market, making professional quality display processing available to everyone.



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## awesome high-definition digital image processing

**Vantage-HD** is a state of the art ultra-high speed real-time image processing system capable of performing at speeds in excess of 1Tera-flop, more power than that of many super computers. It runs state of the art video processing algorithms from Teranex using the highly acclaimed Silicon Optix Realta HQV™ processor.

Together with expertly designed hardware and firmware from video processing specialist Calibre UK, this technology is now made available to all home theater enthusiasts.

There is no other home theater image processor with this level of flexibility which comes even close to the Hollywood Quality Video™ performance of **Vantage-HD**.

### No separate switcher needed:

**Vantage-HD** features a wide range of multiple audio and video inputs and outputs so is able to switch between all your different source equipment.

## The perfect image make-over for your home theater

- Per-pixel multi-angle aperture-adjusted motion-adaptive de-interlacing for SD and HD.
- Film mode automatically adjusts not only to 3:2, 2:2 but also works with non-standard and broken cadences.
- Per-corner warp adjustment for ultra-flexible keystone correction.
- Powerful temporal noise reduction and image enhancement algorithms vastly improve image quality on plasmas, LCDs and projectors.
- For DVD and digital cable/satellite users **Vantage-HD** provides real-time MPEG artifact reduction while leaving picture detail intact.
- **Vantage-HD** is the only home theater image processor with these features and this level of performance in its price range.



Image 1 - shows what you see now without Vantage-HD



Image 2 - using Vantage-HD the image is crisp and clear

### THE HEART OF YOUR HOME THEATER SYSTEM

- HD quality from SD sources
- Make HD pictures even better
- Outstanding motion performance
- Video and film noise reduction and image clean-up
- Multi-function video and audio router
- Multiple HDMI and analog video inputs
- Automatic audio timeline correction to maintain lip-sync

CALIBRE

## Vantage-HD gives your home theater a new image make-over

In contrast to conventional CRT televisions, fixed pixel displays now dominate today's home theater market place, from front projection to large flat panel direct-view LCD and Plasma monitors.

Few people realize when they purchase their first hi-definition TV set that the majority of TV programming is still delivered as standard definition (SD) 480 line interlaced video through composite, S-Video or component connections from cable TV set-top boxes, DVD players, VHS machines and camcorders.

Even true HDTV transmissions, Blu-Ray and HD-DVD sources are often still interlaced or have significant noise and artifacts present.

To make matters worse, in order to fill a high resolution HDTV screen, the SD image has to be enlarged but then all the flaws in the original image are enlarged too. This is why so many home theater viewers find that their new projector, plasma or LCD doesn't provide the expected increase in image quality and may even appear more noisy or less clear than their old SD system or CRT set.

It's now time to say goodbye to low resolution, poor quality images, experience Hollywood Quality Video™ in your very own home theater even from SD NTSC signals

The video processing circuits built into most home theater displays and progressive-scan DVD players have limited processing ability and run basic algorithms. These cannot match the awesome power of **Vantage-HD's** 1T-flop DSP with 30-bit 4:4:4 scaler datapath for maximum image clarity, 12-bit component video ADCs and studio quality 10-bit video decoder with super-adaptive comb filter and 4 x ITU656 oversampling.



Even conventional external scalers don't fix all picture defects. All scalers are not equal, even those considered benchmarks in home theater cannot reduce MPEG noise and cannot run their full de-interlace algorithms on HD signals due to a lack of real-time processing power.

**Vantage-HD's** powerful DSP overcomes these limitations to bring Hollywood Quality Video™ into your home.

One particular problem with scalers and modern displays is that the video becomes delayed compared with the audio due to the video processing time. This leads to lip-sync errors which significantly degrade the home theater viewing experience.

**Vantage-HD's** multi-channel audio processing automatically adjusts the audio time-line to suit its internal video processing delay. This can be manually fine-tuned by the user to compensate for delays elsewhere in the home theater system such as in the display device or through a surround-sound processor. Audio time-line correction operates on all audio channels—digital coaxial, digital fiber-optic, analog and HDMI audio. It's easy to see that **Vantage-HD** is far more than just another scaler.

Audio re-synchronisation to maintain lip-sync for analog, digital, optical and HDMI audio

**Vantage-HD** provides a level of image enhancement and picture clean-up previously only found in film/TV post processing studios on equipment costing from \$50K up to \$250K, way outside the budget of most home theater users. Now Calibre have harnessed Silicon Optix' Realta HQV™ processor to make this technology affordable for the first time to home theater users.

**Vantage-HD** even improves the quality of 720p and 1080i, not just SD. Only **Vantage-HD's** tremendously powerful, highest quality real-time image processing can de-interlace both SD and HD, reduce noise and artifacts, scale the picture and still retain all of the fine detail and content of the original source.

**Vantage-HD** includes multiple low-angle aperture-adjusted motion-adaptive de-interlacing of both SD and HD images, far exceeding the performance achieved by competitor technologies with full de-interlace performance on 1080i formats as well as 480i and 576i, unlike the benchmark competitor product which cannot perform this degree of de-interlace perfection.

Film-based material is expertly processed with fully automatic detection of all pull-down cadences including broken cadences and non-standard cadences typically found in animation sequences, as well as the common 3:2 and 2:2 formats, all with automatic scene change detection to ensure clean cuts between scenes and the ability to process mixed scenes where film and video are overlaid. For DVD and digital cable/satellite users **Vantage-HD** provides real-time SD MPEG artifact reduction while leaving picture detail intact.

There is no other home theater image processing technology which comes even close to the Hollywood Quality Video™ performance of Vantage-HD

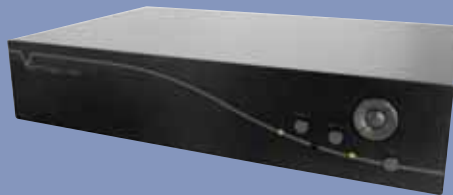


## Unrivalled flexibility and image clarity

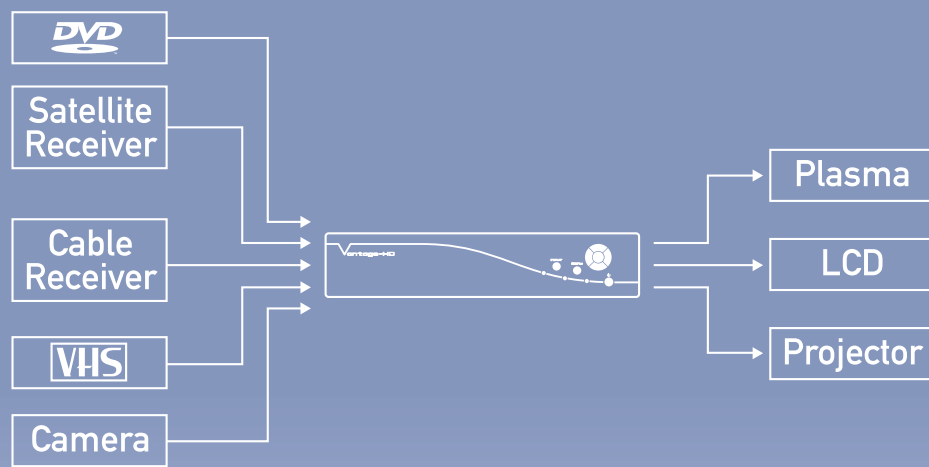
Temporal recursive and brickwall filters clean up undesirable image noise from sources such as film grain, electronic and random noise and compression during transmission or recording. Color transient improvement enhances color definition providing a natural, life-like image even from SD NTSC sources. Temporal noise reduction features operate on HD and SD video formats.

For projection use, market-leading keystone correction is provided with unrivalled flexibility and image clarity.

Vantage-HD's state of the art image warping engine allows drag-and-drop corner manipulation to easily correct for extreme off-center projection angles of up to +/-40 degrees horizontally and +/-30 degrees vertically.



## Connecting your Vantage-HD



**Vantage-HD** has special processing features suited to many types of display device, its powerful temporal noise reduction algorithms significantly clean up the inherent noise and grayscale irregularities in plasma displays. The level of improvement in your home theater viewing experience when using **Vantage-HD** with a plasma screen is simply awesome. **Vantage-HD** gives even budget plasmas a major image makeover.

Large-screen LCDs also benefit from Vantage-HD's immense image processing capabilities and powerful algorithms.

These different processing modes are user-selectable from the OSD, so if you change from a plasma to an LCD there is no need to purchase a different model of **Vantage-HD**.

Vantage-HD is not just an image scaler, it is also the switcher at the heart of

your home theater system. It features a very flexible range of inputs and outputs able to switch between different audio-visual sources without the need for a separate switcher.

The base input configuration is 2x HDMI with support for up to 8 channel digital audio, HDCP capability and backwards compatibility with DVI, 2x composite video and 2x S-Video for NTSC, PAL or SECAM sources, 2x component analog video for YPbPr or RGBS SD, ED or HD signals compatible with 480i(NTSC), 576i (PAL/SECAM), 480p, 576p, 720p and 1080i signals as well as 1080psf.

An optional expansion module can be fitted, two types are available. One adds two further HDMI inputs, the other adds a true broadcast grade HD-SDI serial digital input channel for connection to professional video sources. These modules can be fitted by a technically competent user or by your home theater installer.

## MPEG SPECIAL POINT OF INTEREST

DVD and digital cable/satellite programming is plagued by MPEG compression artifacts. Vantage-HD provides real-time MPEG artifact and block-noise reduction while leaving picture detail intact.

- Per-pixel multi-angle, aperture-adjusted, motion-adaptive de-interlacing for SD and HD out performs all competitor algorithms
- Film modes automatically adjust to 3:2, 2:2 and non-standard pull-down sequences
- Optional HD-SDI input expansion module
- Plasma, LCD and projector display image enhancement and noise reduction
- Extreme-angle projection keystone correction
- Powerful chroma artifact removal algorithms
- Uses Silicon Optix' acclaimed Realta HQV™ chipset

**Vantage-HD's** switching capabilities can easily be integrated into your home theater. A simple to navigate on-screen menu can be controlled by infra-red remote control or by an RS232 serial link for use with third-party home theater control systems. There are also front panel controls for that day when you simply cannot find where you put the remote!

