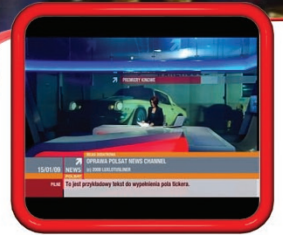


# PowerWall



## PowerWall - very high resolution graphics for large video displays

As large video walls become more widely used in the broadcast environment, a need has arisen for a cost-effective solution for delivering compelling graphical content at very high resolutions.

Orad's PowerWall is a turnkey system for video walls, based on the industry proven HDVG platform that provides a 4k resolution output from a single box.

Whether the productions are news, entertainment, sports or elections, Orad's PowerWall can be integrated into the production workflow.

### HDVG4K

At the heart of the system is the HDVG4K. This single unit outputs 4 genlocked HD signals, which are then provided to the "splitter box" used for the video wall. These four outputs can be tiled across the video wall to whatever video wall size is required, retaining the aspect ratio of the display (2x1, 2x2, 3x1 and 4x1). The resolution can range from 3840x1080 in the 2x1 setup, 3840x2160 in the 2x2 setup, up to 7680x1080 in the 4x1 arrangement, all from a single HDVG4K.

This high resolution provides studios with the ability to zoom in on the screen without the graphic content becoming pixelated.

The HDVG4K can accept up to 4 HD or 8 SD live video insertions, as well as video clips in most industry accepted formats, which can be mapped to different graphical elements on the video wall. All of these video elements become an integral part of the templates and do not need to be overlaid as 'picture-in-picture' objects.

By running from a single box, all on-screen elements (tickers, videos, animated items, etc), will remain synchronized across the whole of the video wall, with no tearing visible on any sections of the output.

### No compromises on design

PowerWall's graphics content is created using 3Designer, Orad's award winning graphic creation package. 3Designer is used to create templates for any type of broadcast, including news, special election broadcasts, sports casting, weather segments, business reports and more.

While working in 3Designer, the entire video wall is treated as a single scene, so full screen graphics will be created without tearing where video wall tiles meet. Guides and markers can be placed on the template enabling the display and align elements to be subdivided precisely.

The templates contain both graphics and animations; different scene elements can be dynamically updated and controlled during production. Each layer can also be mapped as a texture on the surface of another object, opening the way for stunning new types of animations and effects that are normally only possible in post-production.

3Designer also offers state-of-the-art 3D and decorated text capabilities. A unique algorithm was developed to ensure the maximum text quality at any given text size, thus avoiding text blurriness or pixelization. In addition, 3Designer fully supports Unicode and multiple regional language environments, multi-line and multi-style texts, shrink-to-fit, alignment and kerning adjustment.

In order to enhance the level of photorealism, 3Designer is also fully equipped with texture and layer blending modes, and shaders such as bump mapping, displacement mapping and other video effects.

3Designer also provides an API which allows programmers to write their own shaders and implement them using 3Designer.

### Seamless workflow integration

Taking graphics to air is straightforward. The content can be controlled by Orad's 3DPlay or Maestro applications, both of which are already in use extensively in the broadcast environment.

Both 3DPlay and Maestro can be seamlessly integrated with existing newsroom and automation systems giving a flexible production environment, allowing journalists, artists and producers to work freely with the new display possibilities.

Templates controlled by Maestro or 3DPlay can be pumped with external data from databases such as Oracle, SQL, ODBC, Excel, XML, and more.

Each scene can encapsulate an unlimited number of data connections. The connection to the database is done using drag and drop methods and no scripting knowledge is required. A set of query tools allows operators to sort and manipulate the data automatically, streamlining and enhancing the production workflow.

If Orad is already part of the production workflow, then the adoption of a video wall only requires the addition of an HDVG4K system. Existing graphic content can be used in the video wall with only minimal repurposing, and control can be carried out from the same 3DPlay or Maestro production applications.



## About Orad Hi-Tec Systems

Orad Hi-Tec Systems is a world leading provider of real time 3D broadcast graphics solutions, including; news, channel branding, sports production and enhancement, special events and elections, virtual studios, and virtual advertisement. Orad's compelling solutions streamline production workflow, enhance viewer experience and improve production value. Founded in 1993, Orad is a public company listed on the Frankfurt Stock Exchange (OHT). For more information, visit [www.orad.tv](http://www.orad.tv)

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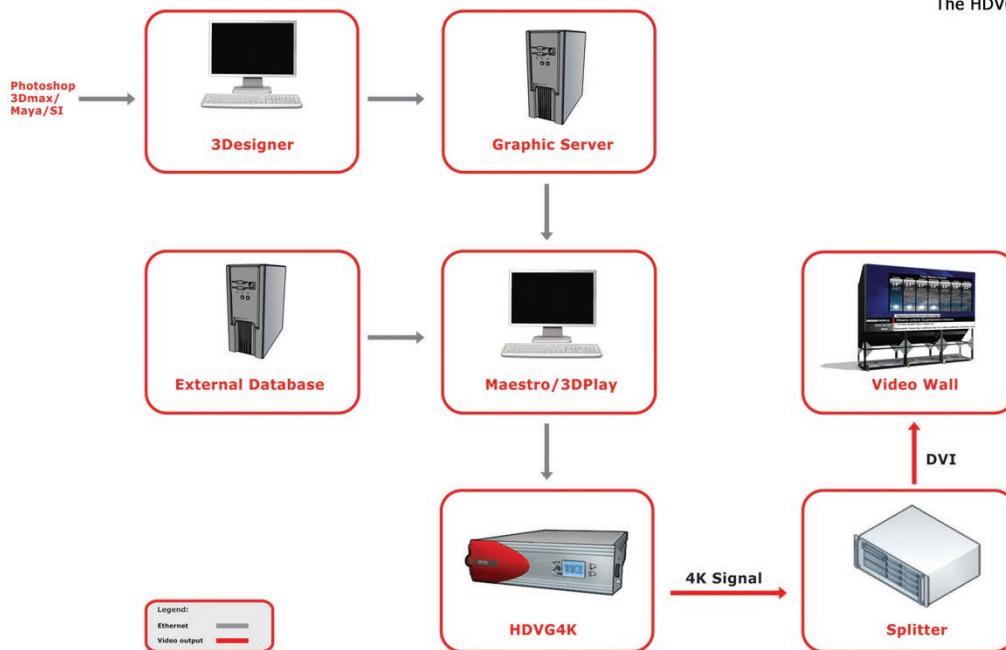
## PowerWall Key Features

- Broadcast industry proven hardware platform – the HDVG
- Single box provides all the video for the wall – no clustering required
- 4x HD SDI outputs, providing genlocked video resolution of 3840 x 2160
- 4x HD or 8x SD video insertions – combine live video with graphics
- Support for video clips in many formats (including avi, qt, dv, mxf, wmv)
- Content creation with 3Designer authoring software
- Versatile control with 3DPlay or Maestro environments
- Seamless workflow – integration with commonly used newsroom and automation systems
- Existing graphics can be repurposed for video wall

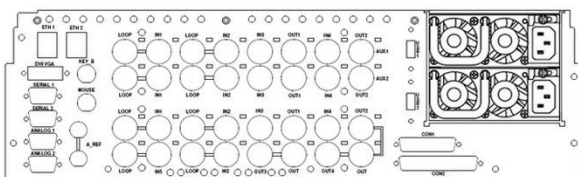


The HDVG video graphics rendering platform

## Diagram



## HDVG Details



### Turnkey System Specifications (constant):

- 2.33 GHz Intel Quad Core Xeon
- Operating systems: Linux
- RAM: 4 GB
- Internal storage: 80 GB system disk optional RAID1 with additional HDD
- Storage: DVD
- Ethernet: 2X 1000 BASE-T (RJ-45)
- Ports: 2 serial RS-232 (DB9); 4 USB 2.0 (2 front 2 rear)
- Control interfaces: PS2 keyboard, PS2 mouse, VGA

### Physical Dimension:

- Height: 130 mm
- Width: 443 mm
- Depth: 631 mm
- Weight: 22 kg (approximately)

### Redundant Power Supply:

- 100-240 V
- 47-63 Hz
- 2 X 460W (max)

### Supported Video Standards:

- HD: SMPTE 260, SMPTE 295, SMPTE 274, SMPTE 296

### Video In:

- SD up to 8 SDI channels, full resolution
- HD up to 4 SDI channels, full resolution

### Video Output:

- 4 SDI outputs

### Video Reference:

- Bi/Tri level Sync with passive loop
- All cross formats are supported in the same frame rate

### Clip Options:

- Video to texture mapping of AVI, Quick Time, DV, DVC25, MXF and MPEG files
- Optional internal RAID array

### Failover / Bypass

- Customizable background image displayed automatically