GRASS VALLEY GROUP

GVEOUS™ HD

HIGH DEFINITION DIGITAL VIDEO EFFECTS SYSTEM

PRELIMINARY DATA SHEET



An excellent addition to your Grass Valley Model 110 HD switcher

KEY FEATURES

- Frame-based high definition processing
- Compact, 4RU chassis with RS422 control and GPI/O
- Available as dual twin HD (4 video or 2 video plus key channels) or single twin HD (2 video or one video plus key channel).
- Shares common feature set with Gveous standard definition models, including SurfaceFX™, UltraWarp™, and OrbitalFX™
- Target Framestore, five channel color correctors, and aux channel outputs are included
- Hard drive storage for effects and textures
- Dual twin channel 10 bit Video + Video or Video + Key or Video + Key + Shadow.
- Two channel wide range defocus. Defocus each channel and each component individually.
- Four channel 3D lighting with bump-mapped texture.
- Four-channel Z depth combiner or priority based layering.
- Planar 3D position and rotate with perspective and Z.
- In Video + Key mode, the key has independent warp address generator.
- In Video + Key + Shadow mode, shadow has independent warp address generator for cast shadows.
- Pattern generator and Supermatte wipe generator
- Soft edge border and crop on each input.
- Defocus shadow independent of key. Shadow can be fed from key or a separate input

GVeous HD sets the performance benchmark for high definition digital video effects. This real-time, high definition effects system shares the features of the GVeous system for standard definition video and uses frame-based processing for sharp visual effects at 1920x1080 resolution. Using the same user interface and control panel as GVeous for standard definition, it's easy to upgrade to HD without operator retraining.

Twin-Channel Power

GVeous introduces a new way of thinking about channels. In traditional systems, a two channel effect involves only two video images. Channels in GVeous are not limited to video, but can process video, key or drop shadow. This flexibility comes from the unique twin-channel processing that gives you the power of two DVEs in a single DVE board. You can also add a second twin channel board to get the power of four DVEs in one system.

Each GVeous twin channel processor board has a main channel that takes in full bandwidth video. The second channel can process one of three signals: a video signal, a key signal or a drop shadow. These three modes give you the flexibility you need to create exciting effects.

Video/Video. The DVE board independently processes two video sources. All transform, warp, and lighting effects are adjustable separately on each video channel. The DVE processor internally generates the key signals associated with these signals.

Video/Key. The DVE board independently processes one video and one key source. All transforms are available to the key signal independently from the video. The key signal also has clip, gain, and phase controls.

Video & Key/Shadow. In this mode, the DVE board derives a full bandwidth drop shadow from the key input. It processes the video and key (which are tied together) in one path, with independent control of the shadow in the other path.

Each transform engine has its own timeline, and there is a separate timeline for global controls. This feature lets you build different effects on different channels, then offset their start times, and the global timeline, independently.

reTouch™ Color Corrector

The Color Corrector option gives you independent color correction control for each of the three keyers and the four background buses. You can color correct in YUV color space, or translate and upsample the video to 4:4:4 RGB for control of White Balance, Black Balance, Gamma, and Knee on each of the R, G, and B components. The video is then downsampled back to 4:2:2 before being sent to the mixer for layering . You have all the flexibility and features you need to match sources or to solarize, posterize and invert each color component with precise control.

Precision Transform Engines for Incredibly Clean Effects

The GVeous transform engines upsample video information vertically to create a full frame of data for every field. With 23x12-point video filters and four-point store output interpolators built-in, you get superb image quality for picture expansion and compression. All picture transform information is calculated to 1.2nS spatial precision with full 10 bits per pixel precision.

SuperShadow™ Drop Shadow Effects

With independent control of all transforms and warps you have amazing flexibility with drop shadow effects. You can ripple them, warp them and italicize them. All independent of the main video.

UltraWarp™ 3D Effects

Create exciting 3D graphic effects to wrap video on Cylinders, Rings and Cubes. You also get the Lens feature which will magnify and highlight any area of the picture you want. Of course, you get those effects we've all come to rely on such as page turns, slabs and warps

SurfaceFX™ Light Source and Texture Generator

Give your effects an exciting new look. Each GVeous channel can have two color light sources which can be positioned anywhere in 3D space with either a Bar, Flood or Spotlight shape. Each light source can independently produce both a high-light and a shadow, which will interact with page turns and ripples for an extremely realistic effect.

For the final touch, you have surface textures – built from either live video, or framestore. The texture signal will modulate the surface of the image, creating highlights and shadows from the projected light source. You can then use these textures with some warp patterns to produce realistic highlights and shadows in your effects.

Target Framestore for Time-Based Motion Effects

Trails, Sparkles and Motion Blur are just some of the effects that are added with Target Framestore. Since it works with the Z-axis depth information, you can move live images in front or behind the stored images automatically.

Defocus for Soft Effects

By adding defocus capability to GVeous, you can get those wide band luminance and chrominance blurs that are so desired today. With dual channel control, you can use it on one or two video signals, or on one video and one key signal. You even have independent control of horizontal and vertical settings.

TimeFrame Effects Editor and Motion Control

Loaded with features, the Time Frame Editor makes it easy to build timelines and for effects editing. You also get complete motion path control for realistic movement through transitions and effects. Battery backed up memory gives you 100 effects on-line, using a pool of more than 2000 keyframes with up to 300 keyframes per effect. Use the included high-density drive to store and recall effects and engineering setups.

SPECIFICATIONS

SYSTEM I/O

Video Inputs

- 12 High Definition, SMPTE 292M 10 bit Serial Inputs at 1.5Gb/s for Video or Key

Video Outputs

- 6 High Definition, SMPTE 292M 10 bit Serial Outputs at 1.5Gb/s. Outputs are selectable as combined video, combined key, channel video or channel key

Reference

- Looping, tri-level HD sync or black burst

SYSTEM CHARACTERISTICS

Scan Format

- 1920 x 1080

Frame Rates

- 50i, 59.94i, and 60i

Number of Channels

- Single or Dual Twin Channels, each Twin Channel can be Dual Video or Video Plus Key with Full Bandwidth SuperShadow™.

COMMUNICATIONS

Serial

- Three RS422 ports which support, SMPTE, GVG Peripheral Bus and switcher aux. bus protocols, and Sony. 1 port configurable as RS232.

GPI

- 12 inputs, 12 outputs, fully programmable. Includes intelligent on-air tally and front/back on-edge switch

PHYSICAL

GVeous Electronics Frame

DIMENSIONS	CM	IN
Height 4 RU	17.8	8.75
Width	48.3	19.0
Depth	40.6	16.0
Weight	36.3 kg	80 lbs.

GVeous Control Panel

DIMENSIONS	CM	IN
Length	48.3	19.0
Width	27.9	10.9
Depth	14.2	5.6
Weight	4.5 kg	10 lbs.

GVeous Control Panel Power

- Power: 5W
- Voltage: 90-250VAC, auto sensing
- Frequency: 50/60 Hz, auto sensing

GVeous HD Electronics Frame Power

- Power: 400W
- Voltage: 90-250VAC, auto sensing
- Frequency: 50/60 Hz, auto sensing

Initial Warranty Coverage

Grass Valley Group products are built to exact standards and are backed by an excellent hardware and software warranty – one year or 15 months from date of shipment. Under warranty services you will receive these critical services:

- Technical phone support (regular business hours)
- On-line frequently asked question database
- Emergency "down" service support
- Advance exchange on product modules

Support Packages Available

We have built our support packages around critical product life cycles with a focus on helping reduce the cost of maintenance.

First Time Product Purchaser Discount

Support services that ensure your product gets off on the right foot are offered to first-time product purchasers at reduced package prices.

- Extended Support Contract
- Impak™ Training
- SmoothStart™/Mini SmoothStart

Ongoing Support for All Products

Service Packages designed to make your job easier, and excellent for non-technical staffed sites, or reduced staff facilities. Packages that provide long-term support and more on-site assistance, at reduced package prices.

- SureStep complete on-site package
- NextStep personalized phone training
- Quarterly preventative maintenance
- Remote diagnostic setup services

Other Services Available

- 1-5 year comprehensive contracts
- Advanced exchange contracts
- Customer product training
- Technical support service contracts
- On-site professional services
- Spares kits and repair services
- Software update services
- Customized service contracts
- System network consulting

*Some country and product restrictions apply

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