



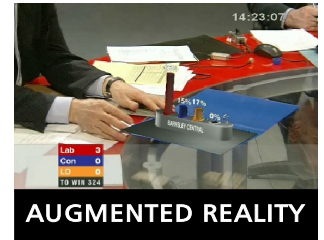
software

Technical Specifications: tOG Live



software

tOG Live



tOG Live: the playout engine for all RT Software tOG products

tOG 3d Live is RT Software's core render technology responsible for the creation of all our 3D Graphics. It is a stand alone PC system that incorporates all the functionality of our various technologies and provides real time 3D rendering bringing you the very latest in 3D rendering techniques.

Whether it is Sports, Character generation or Virtual reality, tOG 3d Live provides state of the art real time 3D Rendering with best in class SD and HD output. Our emphasis has always been to provide the highest quality rendering capability in the business at a truly competitive price. With over 15 years experience we know what broadcasters need to separate themselves from their competitors.

It is OpenGL2.0 compliant but more importantly, incorporates the complete nVidia CG2.0 shader framework, and it is built in from the ground up, not added as an afterthought. Effects such as per pixel lighting are available as standard.

KEY FEATURES

- Leading edge OpenGL2.0 compliant Real Time rendering
- Fully integrated per pixel Lighting for Infinite, Local and Spot Lights
- Fully integrated nVidia CG2.0 Shader effects compliant with Mental Mill
- Multi Layer compositing
- Full support for SD/HD Video Out up to 1080i and 1080p with fill and key
- Multi channel video in at SD and HD
- Mpeg output streaming to web, disk or NLE
- Mpeg and Audio input streaming off disk or across the web
- MOS 2.8 compliant
- 3rd party protocol modules in C#, java or c++
- 1 - n or n - 1 network connections
- Full preview on same machine
- OEM Integration available



BROADCAST QUALITY OUTPUT

Designed to broadcast industry video and audio standards, tOG Live reliably delivers broadcast quality SD or HD output, as well as offering other methods of playout and storage.

D1 Output

tOG Live provides truly flexible D1 output with emphasis on quality. It supports all video standards currently in use around the world. This includes SDI output for PAL, PAL WS (with proper anamorphic aspect control), NTSC, and PAL-M.

HD Output

HD capability is provided as standard on all tOG 3d Live systems providing 1080i, 1035i and 720p and only depends on hardware configuration. The tOG 3d Live system is 10bit with fill and key and full 1080p 3G is currently in development.

Tools Ensuring Great Results

Graphics systems can have the best rendering in the world, but without careful attention to output the result can look sub standard. tOG 3d Live includes 3, 5 or 7 tap flicker filtering to retain quality right through to the viewer. Shaped or Un Shaped output also allows mixing outputs on most desks. The tOG 3d Live

output can be genlocked to analog bilevel, trilevel or SDI.

Audio Pass Through

use the embedded or AES/EBU Audio pass through provided as standard. in the tOG Live system to remove the need for external delays when keying.

Laying-off MPEG to Disk

For future use, or maybe playout by an automation system, lay off any tOG 3d graphics to disk using a variety of mpeg formats.

Direct Web Streamed Output

tOG Live provides mpeg streaming compliant output with sub pixel accuracy for even the lowest transmission rates.

DIRECT PLOUT OF LIVE INPUTS

tOG 3d supports the input of live video inputs and MPEG streams, making them available as a texture in a scene or a "DVE" like background.

Multi-Channel Live Video Input tOG 3d Live supports the input of up to 2 full RGBA live video streams, which are then available direct to render—not just DVE backgrounds. This enables the application of video inputs as textured objects to any form of geometry with full UVW mapping. Whilst there are cost benefits and footprint savings in handling DVE effects within tOG, these should always be tested for quality assurance.

Multiple MPEG Stream Input -tOG Live supports streaming mpegs direct from disk and

even across the web. Nearly all MPEG standard can be played direct including MPEG2, MPEG4 and FLV. This includes Audio streaming. tOG 3d Live supports up to 6 PAL sized mpegs or 3 HD in real time. We also support the new Dirac mpeg standard from the BBC which allows HD streaming at SD bandwidth.



CONTROL AND PREVIEW

When it comes to control, flexibility is the key. tOG 3d provides a comprehensive protocol layer that allows as much, or as little, of the tOG 3d standard communications layer to be used in integrated graphics solutions.

Standard Protocol Layers

If you already have custom control systems and you don't want to re-write them - then don't. Just add your protocol layer to our standard Custom plug-in and we do the rest. Or use any one of our 3 standard protocol layers (MOS, XML or Ascii).

Shared Dynamic Libraries

In addition to this, we provide wrappers for our standard communication layers in the form of shared dynamic libraries. These may be included in 3rd party applications to facilitate rapid application development of custom control interfaces.

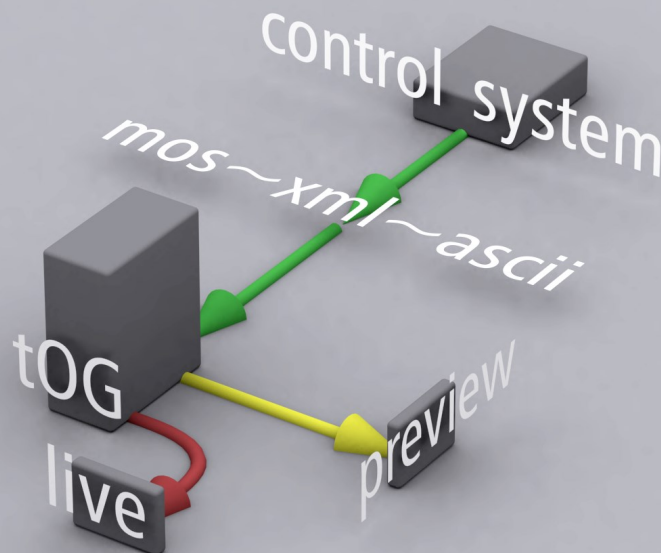
Being able to see what is about to go on air can be vitally important for good editorial control and content validation. tOG Render can easily be run up as a second system on the same machine to provide final frame preview. Our protocol systems give you full control over this functionality.

OEM Linkable Shared Library

As well as stand alone operation, the tOG 3d core rendering system can be supplied as a linkable shared library that can be included into other system supplier's applications facilitating full OEM integration.

Preview capability

Often an important aspect of gallery operation.





HARDWARE SPECIFICATION

tOG-3D Edit is a software solution operating on industry standard IT hardware and operating systems, with leading video graphics cards.



Workstations

RT Software only qualifies hardware that is proven to meet the exacting demands of live broadcast for reliability, durability and performance.

Desktop/side and rack mount systems are offered from:

Hewlett Packard.
Dell.
Super Micro.

Laptops are offered from:

Hewlett Packard.
Dell.

Graphics Sub-System

tOG solutions harness the power of Quadro GPUs made by nVidia, the world leader in visual computing technology.

Video Sub-System

To ensure the quality of tOG rendered graphics are maintained all the way to video output, tOG solutions use the highest quality video input and output cards from DVS and nVidia.




More Information

- See <http://www.rtsw.co.uk/hardware> for a complete hardware specification
- See <http://www.rtsw.co.uk/products> for more information on our other technologies

About RT Software

-  **Provides real-time 3D graphics solutions** for all on air requirements including VR studios, sports, news, elections, entertainment and academia.
-  **Founded in 2004** and privately funded, its award winning founders had spent many years working for the Computer Graphics department at the BBC.
-  **Based in London** in the United Kingdom. The company operates globally through a network of trained value added resellers.

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-  **Through one of our local resellers**
Our resellers are tOG 3d trained to provide you with local support. Please see the partners page on our web site.