

HIGH PERFORMANCE HD/SD SWITCHABLE CHARACTER GENERATOR, STILL & CLIPSTORE

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Introducing Clarity3000

Housed in a compact 3RU chassis Clarity3000 is a single channel HD/SD switchable graphics system configurable with a mix of character generation, still store, DVE and 3D tools along with optional video clip and audio capability.

Clarity3000 is the foundation of a solution to your specific graphics requirements. A range of hardware and software options provide an application tailored toolset with minimum investment.

Live Production

Clarity3000 is a natural fit into any production control room, configured either as one channel with preview output or two independent channels.

The CG-3D option adds real-time, data driven 3D animations with lighting effects. Simple 3D objects can be created quickly while more complex objects can be imported in common 3D file formats. 3D scenes can be data driven in support of business graphics, elections or sports results.

Combining text, cell animations, clips, DVEs, 3D animations and audio stings Clarity3000 makes simple work of animated graphics that hold the eye without the complexity or cost of multiple devices.

Master Control Suites

Broadcast transmission facilities find Clarity3000 in the master control suite where its reliability and flexible automation capabilities are key. An onboard down-



Clarity3000 is a multi-function, multi-format graphics system ideal for live production such as sporting events (above). Flexible automation capability is well suited to branding, promotions & speciality channels (right).



stream keyer with automatic relay bypass ensures continuity of signals flowing through Clarity. Redundant power supplies and RAID1 system disks further enhance reliability.

The live squeezeback, clips and audio options turn Clarity3000 into a branding and promotional powerhouse. One system capable of running everything from simple station IDs, newscrawls, time & temperature to squeeze & tease promotions with complex audio ducking, voice-over insertion and variable graphic end tags.

Choose manual or automated operation. Clarity3000 supports integration with numerous automation systems through both emulation of legacy protocols and a native XML interface. Onboard page scripting capability and data extraction from databases and spreadsheets further extend integration possibilities.

HD/SD Post-Production

Right out of the box Clarity3000 is a superb solution for multi-format linear editing facilities. With flexible, easy-to-use text and image handling Clarity3000 makes light work of title and credit sequences, including credit rolls whether in SD or HD programs.

Able to easily convert pages between SD and HD formats Clarity3000 enhances productivity when finishing programs in multiple formats. Exporting pages to common movie and image formats allows integration between linear and non-linear edit suites, as well as simplifying offline approval of page layouts.

Optional 4:4:4:4 RGB colorspace operation provides the highest possible image quality for high-end linear editing facilities.



Key Features

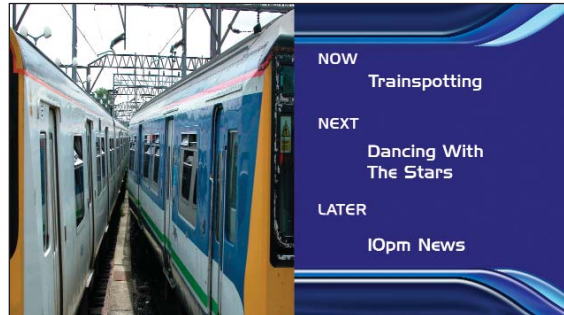
- **Text Fields**, template fields lock position, font, size, color and edge effect. Innovative auto-compress feature ensures fields do not overflow. Fields can be filled manually or from external data sources using the Clarity XML remote control protocol. Direct linking to Excel spreadsheets and databases is also possible.
- **Logos**, images with alpha can be inserted into text layers with full control over position, size and transparency. Collections of logos can be grouped together in a LogoFont and keystrokes assigned for instant recall.
- **Text Import**, text can be cut and pasted via the Windows clipboard or imported from an ASCII or Unicode file. The file import supports embedded commands for page breaks and style changes.
- **Text Animation Effects**, Flash, Type and Wipe effects can be applied to text with configurable animation parameters. Animations can be sequenced under timeline or manual control.

Cool Move real-time text animation effects, including Crawl, Croll, Roll, Reverse Roll, Shred, Shuffle, Type, Wipe and Wave, are also included.

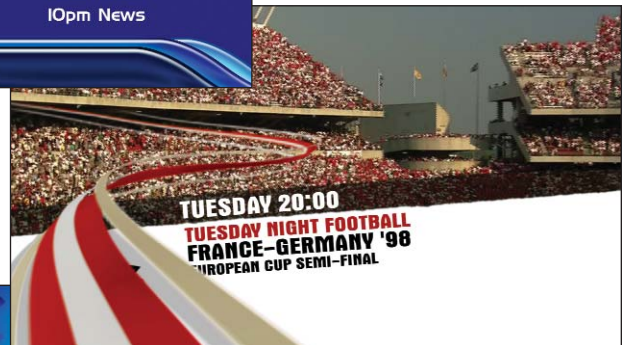
Clarity3000 supports multiple continuous tickers, which can be updated in real-time from external data sources including Excel spreadsheets.

For end credit production high quality endless page roll and crawl is supported. The speed can be fixed or auto-calculated based upon a total time for the roll. Markers can be inserted to control speed changes and pauses, or the speed can be varied dynamically from the keyboard.

- **Flexible Image Handling**, Clarity3000 can read over 100 common image formats including TIF, TGA, PCT, PSD, JPG and PNG.
- **Page Transition Effects**, CG pages can be sequenced with transitions like Fade, Wipe, Push, Slide and Roll with controllable radius and softness.
- **Page Export**, CG pages can be exported in numerous standard image formats or rendered out to AVI or MOV files convenient for use in non-linear editing systems.
- **Page Scripting**, Clarity3000 can use vbscript macros to embed intelligence into template pages. Scripts can automatically fetch and format data for presentation without impacting other external automation.



Seamlessly combining text, stills, clips, audio and DVEs in one easily controlled device makes Clarity3000 a most creative tool for channel branding & promotions as well as live production such as daily news.



- **Productivity Tools**, Clarity3000 includes productivity features like Job Maintenance, which manages associated graphics content including fonts, logos and images. The job and its associated files can be copied as a packaged ZIP file for archive or transfer to another Clarity system. CG pages can also be exported as JPEG files for client approval.
- **Format Agility**, Clarity3000 supports all common SD and HD standards and frame rates, quickly selectable via a simple software setting. In addition, "cross-lock" capability allows operation in many output formats without changing the systems genlock source.

Clarity also provides tools to quickly and easily convert page layouts between all supported page formats.

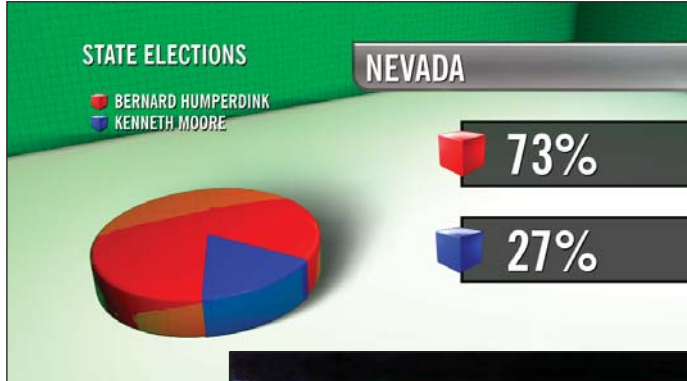
- **SNMP Monitoring** provides a convenient means by which to check the status of critical sub-systems.
- **Relay Bypass**, for applications such as master control branding the use of fault sensing bypass relays ensure that video and audio signals passing through Clarity

stay on-air in the event of system fault or power failure.

- **High Reliability**, RAID 1 system storage and redundant power supplies provide enhanced system reliability.
- **Generous, flexible I/O** - Clarity3000 provides one HD/SD SDI program output with key. For added flexibility it also provides a dedicated preview output, also with key. A pair of analog component monitoring outputs are also provided for convenience.
- **Multiple DVEs** - In HD Clarity3000 provides two HD-SDI inputs with frame syncs. These may be used as V+K or as separate video sources for the system's internal keyer and DVEs.

When operating in SD an additional pair of Aux inputs are provided permitting up to four live DVE squeezebacks in a single Clarity3000 channel. All DVEs feature a constant two frame latency and matching audio delay to maintain lip sync.

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(left) The 3D-CG option provides dynamic creation of 3D objects in response to live data such as sports or election results.

Clarity3000 supports multiple, simultaneous automation interfaces making it the ideal system for the fast paced live display of sports data, news and shopping channels.



Clarity3000 Hardware Options

- **CG-3D** - CG-3D offers true realtime 3D animation with parametric control of elements, lighting and moves. Capable of both automated control and input, CG-3D requires no 3D experience on the part of the operator.

Complex models can be imported from specialty 3D systems (including Autodesk 3DS) and can be combined with built-in controls, parametric primitives, lighting control and keyframe structures.

2D text and graphics layers from Clarity can be texture-mapped onto 3D models, including live video feeds, animated text, cell animations, images and clocks.

Automated data input - for example sports statistics or election results - can be fed directly onto the surfaces of 3D objects or control the appearance of 3D objects.

- **Video Clips** - The video clip option for Clarity3000 provides a flexible video clip sub-system capable of both HD and SD clip storage and replay. Clip functions are tightly integrated into Clarity. Any page may use a clip background with user defined head, tail, loop, pause, speed and timing. The internal "squeezeback" function can also be

used to resize and reposition clip playback in real-time.

The clips option provides 2 HD or 4 SD streams of video+key allowing complex layering of animations as well as transitions between pages with clip backgrounds. Clips are stored on a dedicated disk array using 8:1 MJPEG compression.

The internally fitted disk array provides a minimum of 60 minutes of HD clip storage in a RAID 0 array. Clip storage provided externally may be RAID 0 or RAID 5 for increased reliability.

Clips may be imported from MOVs, AVIs and image sequences providing a direct link between Clarity and offline animation systems. Clip content can also be migrated between Clarity systems over a standard TCP/IP network, making it possible to background load new material to on-air systems.

- **Audio** - Digital audio recording and playback is also an option on the Clarity3000. Audio may be recorded in real-time via AES or embedded inputs, or imported as WAV files.

The ability to mix incoming and internally stored audio, including ducking capability, is ideal for master control branding and promotion applications.

Clarity3000 Software Options

- **Clocks** - Date, Time and Stopwatch clocks with internal, external or timecode control.

- **Subtitling** - Automated subtitle import (EBU or text) for creating pages and time code sequencing of layout

- **SmartMoves** - Advanced text animations including: Explode, Focus, Perspective Rotation, Pulse, Spin, Wobble & Zoom.

- **Perspective Rotation** - 2.5D rotations of foreground layers, including live input DVEs.

- **2D Cell animation creation** - creation and editing of 2D cells for animated logos, icons & banners.

- **Video Capture** - real-time capture of still frames from live input with key, includes SDI capture to clipstore on systems with the video clips option.

- **Automation** - supports external automation control of Clarity3000, via the Clarity XML control protocol (over TCP/IP ethernet) or legacy Intelligent Interface protocol (over RS232). It also includes the Global Fields Manager and the ability to link to Excel spreadsheets and databases.

- **Paint** - adds native YUV freehand painting, brushes, matte creation and software key generation within the Clarity editing environment.

- **VTR Control** - ability to control a VTR using Sony protocol over RS-422 serial link. Allows capture & record directly to and from tape. Requires video capture option.

- **MXF Import/Export** - Fit into a file based NLE or server workflow through the exchange of content using the popular MXF standard.

- **Internal DSK** - permits high quality keying of graphics over a live video source with manual or page based control of keyer status.

- **Live Push Back 2D DVE** - Resize and reposition live video sources sustaining the highest image quality and with a constant two frame latency through the system.

- **Additional Output Channel** - Repurposes the systems preview output as a fully independent second channel. The second channel supports text, stills, cells, access to one clip stream and its own downstream keyer. Preview for both channels is then provided on the users VGA display.

- **4:4:4:4** - Provides I/O in 4:4:4:4 dual link mode as well as RGB internal processing for the highest possible image quality.

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TECHNICAL SPECIFICATIONS

Supported standards

SD - 625, 525, 4:3 / 16:9 / custom aspect ratios
 HD - 1080i 50/59.94/60, 1080p 24/25, 720p 50/59.94/60

System

10 bit Downstream keyer with bypass
 Dual Xeon3 Processors
 Dual mirrored hot swappable SATA system disks
 DVD writer +/- R/RW
 Dual DVI display controller
 Windows XP Operating System
 2 Gb system memory
 3 USB ports
 RJ45 ethernet port
 RS232 port
 RS422 port
 4 GPI
 4 GPO
 Tally outputs for watchdog and bypass

Video Inputs

2 HD-SDI SMPTE 292M or 4 SDI SMPTE 259M
 Analog black and burst or tri-level sync reference

Video Outputs

2 HD-SDI - SMPTE 259M or 292M video and key
 Analog monitor output (HD/SD) with RGB/YUV (and YC/Composite in SD)

Preview / Auxiliary Video Output

2 HD-SDI - SMPTE 259M or 292M video and key
 Analog monitor output (HD/SD) with RGB/YUV (and YC/Composite in SD)

Audio (optional)

4 AES pairs in and out
 Embed / deembed of all groups on HD-SDI I/Os

Bypass

Relay and watchdog bypass on video & key input and AES audio

Physical

Dimensions: 3RU 440w x 134h x 560d / 17.3" w x 5.3" h x 22" d
 Weight: 25 Kg / 55 pounds
 Power: 400W 110/220V 60/50Hz
 Auto Switching Dual Redundant

Clarity3000

Block Diagram

- FEATURES AVAILABLE IN SD ONLY
- OPTIONAL FEATURES
- STANDARD FEATURES

