

# StreamMaster®

## Modular Media Processing Platform

### Modular, 'deploy anywhere' media processing platform

**Real-time 3D graphics, transcoding, logo and graphics insertion, content rendering, master control and DVE.**



StreamMaster Media Processing is the underlying technology platform upon which a variety of innovative solutions are based to help broadcasters manage the processing, branding, master control and delivery of content to customers. The solutions described are configured as standard branding and playout solutions based on how broadcasters currently operate. As a software defined technology platform, however, features and functional blocks are constantly being added to offer broadcasters a future-proof platform and even more flexibility as operations change over time.

StreamMaster Media Processing enables broadcasters to execute processing functions on media content. Running on COTS hardware on-prem, in a data-center and in the public cloud StreamMaster Media Processing enables authoring, transcoding, logo and graphics insertion, content rendering, real-time master control, real-time graphics and DVE.

#### Create

Next Generation  
Creative Tools

#### Produce

Graphics Creation  
and Playout

#### Prime

Master Control  
and Channel Playout

#### Brand

Software Defined  
Graphics and Branding

#### Deliver

Software Defined  
Integrated Playout

# Create

## Next Generation Creative Tools for Graphic Templates

Create is an all-new design environment for creating graphics templates to be used across all Gallium and StreamMaster solutions. Using industry standard 3D design and animation techniques, Create allows artists to design sophisticated graphics with more built-in logic than ever before.

With an updated user interface and the flexibility for teams to collaborate from multiple locations, Create makes it faster and easier to get your new design ideas successfully on-air.

Create offers more flexibility using industry standard video clips and a fully scrubbable timeline with WYSIWYG feedback, users can work faster and with greater confidence from their standard workstation.

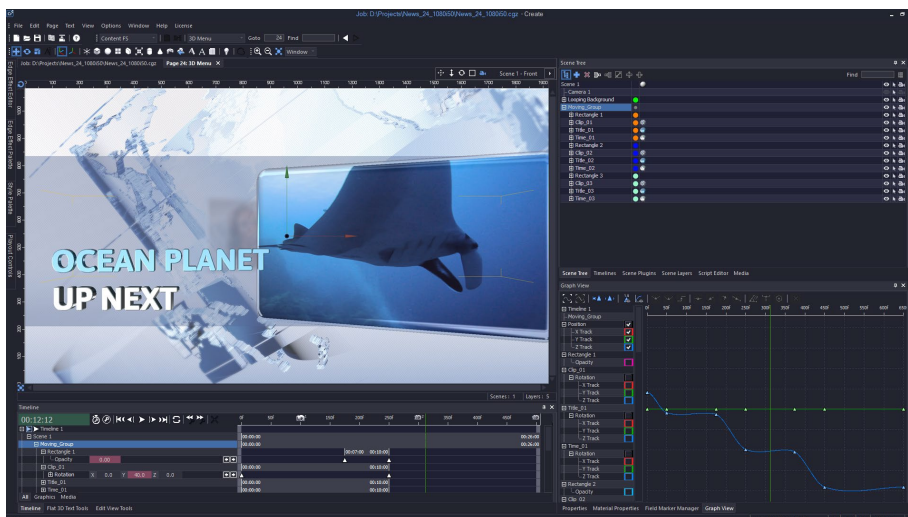
Templates built using Create's powerful but easy to use tools are fully dynamic and can be updated in real-time responding to incoming data and operator interaction.

### Modern Workflow

With easy import of video clips, images and 3D models, the workflow can take advantage of assets made in external software such as After Effects, Photoshop or Cinema 4D. Video clip support includes most broadcast MXF formats as well as QuickTime with alpha.

Clips, images and text fields can be updated with new data moments before going on-air and can continue to change when on-screen. Using the JavaScript engine almost any parameter of a template can be dynamically updated live on-air.

New page logic, using layer states and interlayer triggering, allows independently designed graphics to interact seamlessly with each other in a multi-layer playout configuration.



## StreamMaster Create - Continued

### FEATURED & BENEFITS

- A highly intuitive and powerful graphics template creation interface
- Frame accurate graphics for automated playout or live production
- Customizable workspace which can be saved and shared between users
- Keyframe animations with a familiar F-Curve editor
- Searchable scene tree used to organize objects in the scene
- Multiple timelines with scrubbing to show real-time clip playout
- Animate blurring and transparency effects
- Industry standard layer and blending effects
- Full 3D environment with lighting and 3D materials
- Support for external 3D models and live texture mapping
- Plugin library for convenient access to page logic using drag and drop
- Powerful JavaScript engine for advanced logic
- Real-time software preview using local StreamMaster
- Option for SDI preview with control of external StreamMaster device
- Runs on Windows 10 workstation or virtualized



## Produce

### Multi-channel, Multi-operator Virtualizable Solution for Graphics Creation and Payout

StreamMaster Produce is a software-defined, game-changing, multi-channel, multi-operator, virtualizable solution for graphics creation & payout offering broadcasters flexibility, workflow efficiencies & cost savings. Implemented purely in software for virtualization either on-prem, in a data center, or the public cloud it naturally supports IP and/or SDI I/O.

Using StreamMaster Media Processing technology, first launched for payout applications in 2015, StreamMaster Produce includes a graphics engine that has an Open API and integrates tightly with third party automation systems.

### FEATURES & BENEFITS

- Software defined graphics creation engine
- Virtualizable on-prem, in a data center, and in the public cloud
- Naturally supports IP and/or legacy SDI I/O
- Open API for automation control
- Modular software defined architecture is codec, resolution and frame rate agnostic
- Configurable soft and hard panels for manual control in live production applications
- Embraces 3rd party technology for best of breed in all functions
- Local or networked control application

#### Software Defined Virtualizable Architecture

StreamMaster Produce is built on a modular software defined architecture that inherently enables system flexibility. It is codec, resolution and frame rate agnostic, making it futureproof as new codecs and standards can be supported via a simple software update.

StreamMaster Produce can operate as a standalone system or under external automation control.

The fully virtualizable architecture means it can incorporate other software defined functions. Subtitling, for example, could be combined with branding graphics for content protection. Updates are straightforward as existing functionality is retained with the license fee due only for the new feature applied.

A wide range of graphics formats can be played back in real time with no transcoding or conversion. Two types of graphics layer are supported, logo layers and sophisticated template layers, with the number of each controlled through software licensing.

Multiple 3D layers leverage the full power of the 3D graphics engine to create sophisticated, template based graphics. Multiple independent channels of graphics can be controlled from a single operator's position.

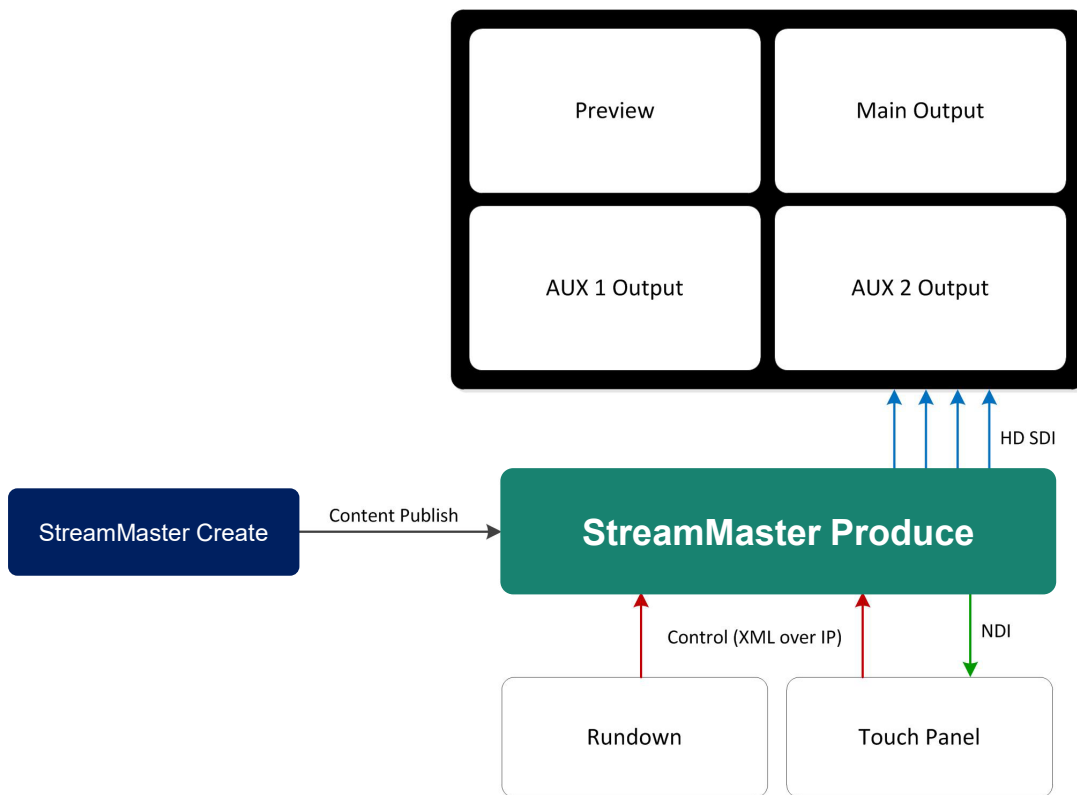
## StreamMaster Produce - Continued

### IP and SDI I/O

Enabling the transition from current infrastructure, StreamMaster Produce can combine SDI and IP inputs and outputs as well as IP proxy streams and NDI interfaces for low latency monitoring and main/preview outputs.

Automatic up/down conversion of media files is supported according to the channel output format. WAV, AIFF and Broadcast WAV are supported for secondary audio. SDI and IP inputs support industry standard formats and frame rates and StreamMaster Produce will mix formats within a single software instance.

StreamMaster will support the SMPTE ST 2110 uncompressed format in due course and due to the modular software system design new functionality can be developed swiftly and added to customer deployments quickly and easily.



### Pay by Usage

A significant advantage of a software-defined solution is the ability to create new operational benefits such as on-demand usage and pricing models. Individual features can be purchased outright or bought on a pay-as-you-go basis by the quarter or hour. New features, such as NDI, and the relevant license upgrades can be added easily and quickly thereby saving time and resources.

## Prime

### Cost Effective Graphics, Master Control and Thematic Channel Playout

StreamMaster Prime is a turnkey appliance with SDI I/O that offers a flexible feature set to satisfy channel branding and simple integrated playout requirements. StreamMaster Prime is aimed at broadcasters looking to replace legacy equipment nearing end of life while retaining existing automation and discrete playout infrastructure.

Designed for 24/7 operation in a transmission environment StreamMaster Prime leverages our renowned StreamMaster technology platform into a cost-effective SDI connected appliance that fits seamlessly into existing infrastructure. Investment in StreamMaster Prime is future proofed as the software licensed features can be transferred to a new architecture or deployment model as business needs evolve.

### FEATURES & BENEFITS

- Flexible software defined feature set enables function matching for legacy branding & master control devices.
- SDI I/O for simple integration, can be upgraded to IP at any time\*
- Supports automated graphics, multi-layer static and animated logos, clocks, text crawls, tickers, DVE moves such as squeezeback, EAS, and more
- Master control switching functionality
- Autonomous operation, VSP hardware master control panel or UI control panels available
- Upstream router control for master control applications
- Plug & play with all major automation systems through protocol emulation
- Sophisticated audio processing for multi-channel sound
- Shuffle / loudness / gain / duck / mix in voiceover & sound effects / Dolby

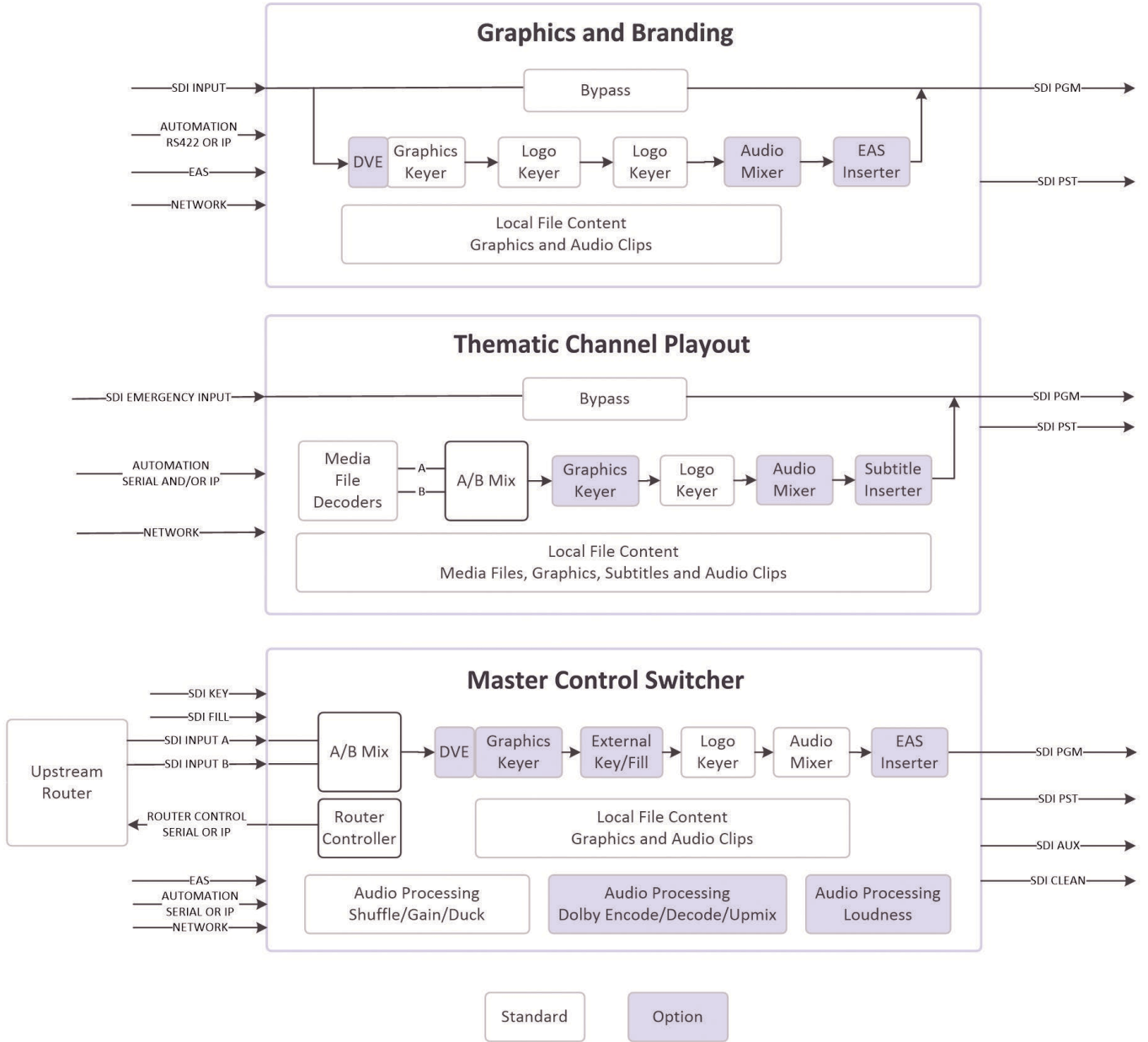
\*May require hardware upgrade

### Software Defined Architecture

StreamMaster Prime can be configured for a variety of applications within the performance constraints of the underlying hardware platform, for example:

- Graphics & Branding to satisfy the needs of most channels.
- Thematic Channel Playout for less complex requirements.
- Master Control Switcher to replace multiple devices in existing playout chain.

StreamMaster Prime - Continued



## Brand

### Software Defined Graphics & Branding

StreamMaster Brand is a software defined branding and graphics playout engine designed for 24/7 operation in a transmission environment. Using a singular workflow StreamMaster Brand is designed to meet a wide range of automated graphics playout and channel branding needs. It is an efficient and highly cost-effective solution for delivering graphics reliably and without operator intervention.

Designed for autonomous operation and with no direct user interface StreamMaster Brand enables a complete and effortless flow of on-screen information such as Branding, Promos, Stock Data, Weather news, Sports updates or News briefings. StreamMaster Brand is simple to deploy for single or multi-channel broadcast environments where reliable no-compromise playout and branding is required. It is perfectly suited for the demands of master control and highly automated playout and integrates seamlessly with all the leading playout automation systems including Channel in a Box solutions.

StreamMaster Brand can be flexibly configured to match any graphics and branding requirement, in terms of both feature set and pricing model. It is format agnostic and futureproof, supporting multiple codecs with SDI and IP transports. It can be deployed as a turnkey server or virtualized in a private data center or in the public cloud.

#### Pay By Usage

A significant advantage of a software-defined solution is the ability to create new operational benefits such as on-demand usage and pricing models. Individual features can be purchased outright or bought on a pay-as-you-go basis by the quarter or hour.

### FEATURES & BENEFITS

- Branding and Graphics on dedicated hardware, virtualized in a data center or in the cloud
- Software defined, format agnostic, scalable and flexible
- New flexible pricing models including pay-as-you-go, pay-per-feature, OPEX or CAPEX
- Built upon the established Clarity graphics engine
- Real time 3D and multi-channel 3D DVE capable
- Open API for automation control with all major automation brands
- Internal video clip players directly supporting common broadcast media formats
- Template and timeline driven graphics, multi-layer static and animated logos, clocks, text crawls, tickers, DVE moves and more
- Sophisticated audio processing for multi-channel sound overlays with mix and duck
- Optional 3G SDI I/O with 10-bit downstream keyer with bypass



# Deliver

## Software Defined Integrated Playout

StreamMaster Deliver is a software defined integrated playout engine designed for 24/7 production of simple or complex linear TV channels in a wide variety of environments including dedicated server and virtualized in a private data center or in the public cloud.

Using a singular workflow StreamMaster Deliver goes further than standard playout systems by enabling you to maximize your brand and grow revenues through the creation of dedicated content for multi-platform delivery. Running on COTS hardware StreamMaster Deliver offers you the choice whether to host your playout, automation, master-control and branding applications on-prem, in a private data center or in the public cloud. StreamMaster Deliver offers media playback, real-time master control of live feeds, real-time graphics and DVE over SDI and/or IP streams.

As a format agnostic software-defined system, StreamMaster Deliver allows you to scale with your business and remain flexible as needs change. Software licenses are portable allowing you to move applications freely between different deployment environments. StreamMaster Deliver licenses offer totally flexible pricing models that include pay-as-you-go and pay-per-feature/functional-block, all of which are very beneficial for pop-up, event or test channels.

StreamMaster Deliver is perfectly suited to thematic, premium or live channels through clever use of COTS processing technologies and is highly cost-effective for business continuity and disaster recovery applications.

The business decision of bringing a channel to air, protecting existing channels or streamlining and enhancing existing facilities has just become easier and more flexible.

## FEATURES & BENEFITS

- Quickly bring new channels to air, on-prem and in the cloud
- Replace multiple hardware devices with a modular software defined system
- Live feeds, real time graphics (simple or sophisticated) and DVE
- Cost effective and flexible for Business Continuity / Disaster Recovery
- Portable licenses for on-prem, data center or public cloud
- Clarity Graphics built in
- IP encoder with full Graphics and Master Control built in (hard & soft panels)
- Flexible pricing models, pay-as-you-go, pay-per-feature, OPEX or CAPEX
- Open API for automation control with all major automation brands as well as support for legacy control protocols
- Powerful metadata handling to enhance content monetization
- Future-proof – new codecs, functions and formats can be integrated easily using internal or third-party IP

## *StreamMaster Deliver - Continued*

### **StreamMaster Deliver is the new channel in a box but without the constraints of the box.**

Although StreamMaster Deliver is designed to support virtualization, whether on-prem, in a data center or in the public cloud, it can also support hybrid and transitional environments. This provides you with a seamless migration from today's SDI environment to the IP world and ensures your hybrid investment is truly future-proof.

With StreamMaster Deliver all your channels, whether VOD, OTT, IP or Multi-screen can have exactly the same brand sophistication as linear channels

StreamMaster Deliver implements the functionality, graphics capability and image quality of our master control, Clarity graphics and integrated playout systems in software running on commodity hardware.

This software system is designed to support new functionality, formats and codecs as they become available taking you from HD to UHD and beyond.

StreamMaster Deliver is compatible with third party automation providers so there is no need to change workflow or operational practice, maintaining simplicity and without locking you in.

### **Pay By Usage**

A significant advantage of a software-defined solution is the ability to create new operational benefits such as on-demand usage and pricing models. Individual features can be purchased outright or bought on a pay-as-you-go basis by the quarter or hour.