



eVIA

Multiscreen IP Video
Delivery & Monetization



Viewing of premium content beyond the television has quickly become mainstream. It is no longer novel for consumers to view video on tablets, PCs, smartphones or other mobile devices, both within their home and on the go. As adoption grows and video service providers (VSPs) strive to upgrade their networks to meet subscriber demands and stave off encroachment from competitors, a new generation of solutions is necessary to meet the challenges that emerge from the next wave of deployments.

Full-scale rollouts of multiscreen services require more robust solutions with a high degree of flexibility, scalability and reliability. They also dictate a means of monetizing services, allowing VSPs to offset the cost of infrastructure upgrades and provide a new revenue stream.

SECOND GENERATION MULTISCREEN DEPLOYMENTS

Many deployments of multiscreen services have been undertaken by VSPs around the world, making several things clear. As the content being delivered to multiple devices increases, along with the number of end-user devices on the receiving end, more and more profiles of varying bitrates and resolutions must be created, continually increasing the transcoding demands. With this volume comes the requirement for a very high density transcoding solution with the flexibility and scalability to grow as needed without the exorbitant cost and headaches associated with low density solutions.

As multiscreen goes mainstream, this second generation of transcoding solutions must also have the reliability to deliver high-availability video services. A modular, carrier-class, chassis-based solution is the only cost-effective way to deliver the redundancy necessary to guarantee the up-time that will soon become an expectation as subscribers become more video-savvy.

eVIA: TAKING MULTISCREEN TO THE NEXT LEVEL

Once a robust service is established that meets the expectations of subscribers, the next step for VSPs is integrating a monetization component into the delivery system that will enable them to bring in new revenues, especially with the subscription model for non-television video services still in question. As VSPs add this next level of sophistication to their multiscreen delivery system, it is critical that they implement an open-standards ecosystem designed for the new adaptive streaming environment, giving them the flexibility to adapt as the ecosystem evolves.

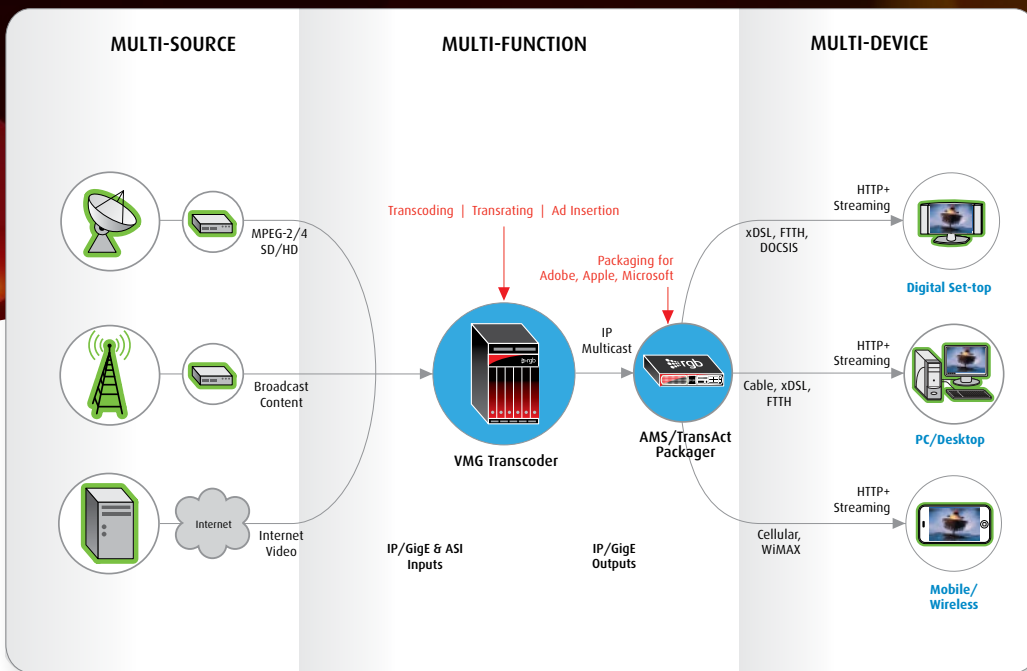
RGB Networks has developed its Enhanced Video Intelligence Architecture (eVIA) multiscreen IP video delivery and monetization ecosystem expressly to address the complex requirements brought on by a world where people want to watch video anywhere and everywhere, and by VSPs' need to maintain their revenue streams in this new environment. RGB's unique suite of products, anchored by a chassis-based transcoding platform, sets our multiscreen solution apart from first generation transcoding solutions.

INTEGRATED, MULTI-APPLICATION PLATFORM

Housed in RGB's carrier-class Video Multiprocessing Gateway (VMG™), RGB's transcoding solution is integrated with a number of other core video processing functions, including aggregation, grooming, transrating, and audio processing. By allowing streams to flow through multiple operations within the same platform, the network architecture is significantly simplified, reducing the cost and complexity of set-up, operation and maintenance with less wiring, easier management, and less space and power requirements. The VMG is tightly integrated with RGB's AMS/TransAct Packager, a flexible hardware- or software-based solution for segmenting or packaging for adaptive streaming protocols.

HIGH-CAPACITY MULTIPROCESSING PLATFORM

With the ability to output over 500 transcoded streams simultaneously, RGB's multi-function VMG offers the highest capacity video processing solution available. RGB's ultra-high-density, modular approach not only reduces the complexity brought on by the proliferation of video services, it also offers operators easy, licensed-based, pay-as-you-grow scalability that will allow them to expand their services on their own timeline as demand increases.



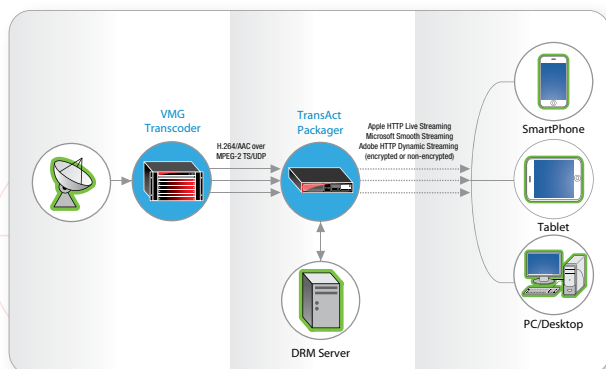
**RGB's eVIA Solution
Simplifies Multiscreen
Delivery and Monetization**

SUPERIOR REDUNDANCY AND EASY MANAGEMENT

Offering redundancy for all chassis functions, the VMG delivers carrier-class reliability. This fully redundant platform offers 1:1 or N+M redundancy for each module with real-time monitoring, redundancy for power, fans and control modules, as well as program level redundancy. All control is internal to the platform, eliminating the need for an external management system, reducing management headaches, and facilitating rapid switchover to a redundant unit.

FLEXIBLE ADAPTIVE STREAMING SOLUTION

Working seamlessly together, RGB's VMG and TransAct Packager provide a complete transcoding and packaging solution. Separating transcoding from the packaging functionality provides flexibility to deploy both centralized and distributed architectures, depending on the operator's requirements. RGB's Packager supports all prominent delivery protocols, and can insert manifest markers based on SCTE 35 signalling to support adaptive bitrate ad insertion.



**Flexible Transcoding/Packaging Architecture
for IP Video Delivery**

MONETIZING MULTISCREEN SERVICES

RGB's eVIA multiscreen IP video delivery and ad insertion ecosystem utilizes advanced adaptive bitrate streaming to facilitate targeted advertising down to the neighborhood, device or even specific individual subscriber demographics. The key benefits of delivering ad insertion in this manner is that video service providers have a simpler, cost-effective and more scalable solution than offered by traditional ad insertion methods while allowing hyper-targeting down to the most granular level. With increased revenues from targeted advertising, video service providers will be able to offer subscribers enhanced multiscreen services, such as OTT video delivery, nPVR, and Catch-up TV. The eVIA framework also gives providers the added benefits of cost-effective and seamless program substitution, blackouts and channel switching utilizing the same infrastructure.

RGB'S FUTURE-PROOF SOLUTION FOR TV EVERYWHERE

Video services are becoming increasingly personalized, with subscribers embracing the benefits of watching television where and when they want. To make this 'any device' vision scale to support all their subscribers, operators must intelligently upgrade their networks, utilizing solutions proven at scale in the field, to efficiently deliver and monetize the multiscreen experience. RGB's second generation solution offers the means to support multiple video processing applications that can be applied to a large number of video streams simultaneously, therefore dramatically reducing the complexity of supporting different sources, networks and devices, while ensuring that programs appear as picture perfect as possible.

RGB'S VIDEO MULTIPROCESSING GATEWAY (VMG)

At the heart of RGB's eVIA multiscreen solution is the Video Multiprocessing Gateway (VMG), a carrier-class video processing platform that uniquely combines a number of key functions, including real-time transcoding, digital ad insertion, transrating, grooming and aggregation. This modular, integrated platform reduces operational complexity and allows for easy, license-based upgrading and scalable, pay-as-you-grow expansion of services.

In addition to its NPM controller blade, the modular VMG offers three plug-in blades to facilitate the delivery and monetization of video for TVs, PCs, tablets and mobile devices. The flexible TCM, AMP and VPM modules provide many advantages to operators:

- **Transcoding mode flexibility:** MPEG-2 to H.264 or H.264 to MPEG-2; easily enabled via the Element Manager GUI; also supports HD-to-SD downconversion
- **Industry's highest capacity:** Up to 12 HD or 36 SD programs per TCM module for large screen applications or up to 48 streams for PC/mobile applications
- **Superior video quality:** Programmable Group of Pictures (GOP) structure, as well as advanced noise filtering capabilities
- **Standards compatibility:** H.264 Main Profile up to Level 4.1 for efficient H.264 processing while interoperating with leading set-top boxes; supports DVB and North American DTV standards; fully compliant with SCTE 30, SCTE 35 and SCTE 130 ad insertion standards and interoperable with leading ad servers
- **Compact, integrated, high-availability system with built-in redundancy:** N+M modular redundancy scheme relies on standby modules that can immediately back up the operational modules with automatic failover; eliminates need for multiple, externally connected boxes
- **Hybrid technology:** Utilizes ASIC, FPGA and general purpose processors, applying the 'best tool for the job;' integrates hardware and software solutions, appropriately providing software flexibility with the robustness and processing power of a hardware solution
- **Integration with RGB's AMS/TransAct Packager:** Segments streams using adaptive streaming technology; ingests H.264 encoded video streams carried in an MPEG-2 transport stream and produces segmented output in Apple HTTP Live Streaming, Microsoft Smooth Streaming, Adobe HTTP Dynamic Streaming and Adobe RTMP formats. Can encrypt traffic using AES-128 for HLS and PlayReady for Smooth Streaming, integrating key exchange with leading DRM servers. Packaged streams are delivered directly to origin web servers or to a CDN for wider distribution to end devices. Other unique features include:
 - Internal Microsoft IIS-like functionality for Smooth Streaming manifest creation—no external IIS server required
 - Supports IGMP v3 for source-specific IP multicast
 - CDN friendly: Can act as an origin server, allowing reverse proxy from the CDN; supports expire headers; automatically purges expired content for live streams
 - TS file ingest to any adaptive streaming output
 - Source stream capture for troubleshooting/diagnostics
 - Dual transcoder input stream "striping" redundancy—allows multiple VMGs to input to a single Packager, striping the bitrates within the manifest
 - Local storage—does not require a separate NAS server

Download white papers on key multiscreen topics:

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RGB's Integrated Multiscreen Solution

RGB Networks, Inc.
 390 West Java Drive, Sunnyvale, CA 94089 USA
 T: +1.408.701.2700 | F: +1.408.701.2710
www.rgbnetworks.com