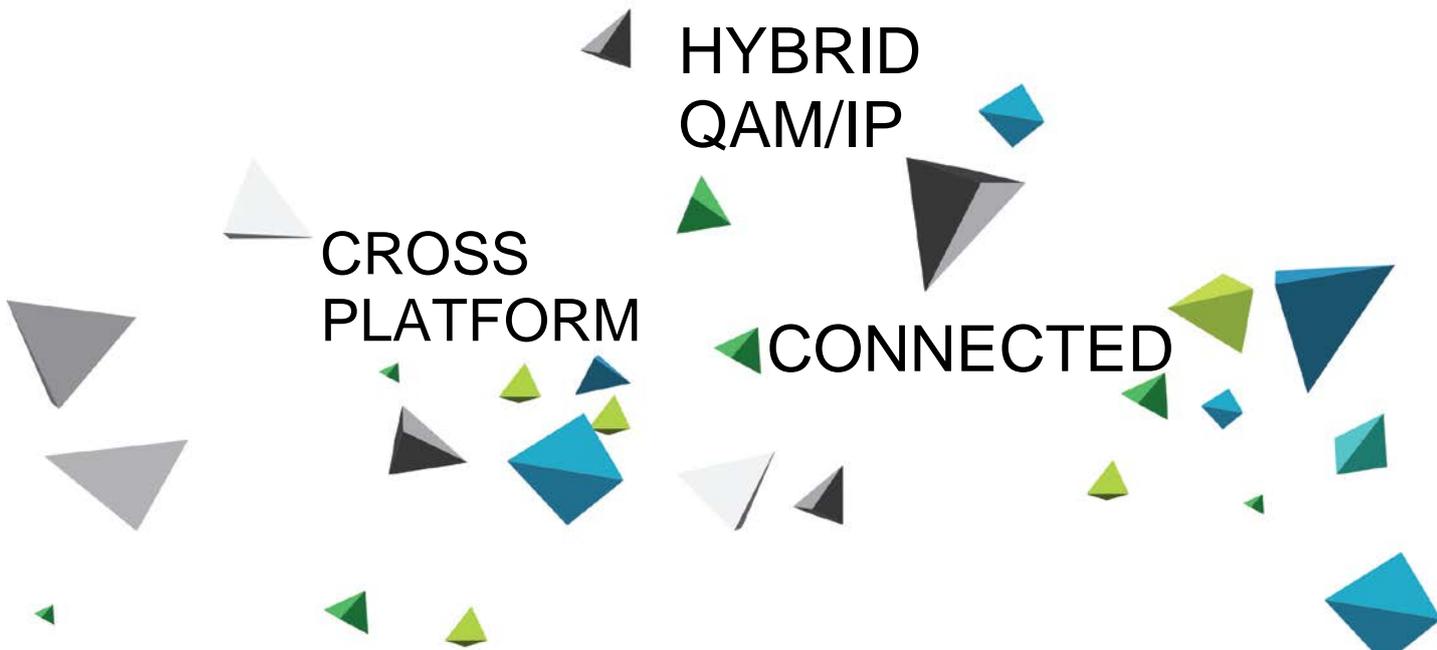




**PowerUp™**  
**Video Broadcast System**



**Headquarters**  
**108B New South Road**  
**Hicksville, NY 11801**  
**516.619.3170**



# PowerUp VBS INTRODUCTION

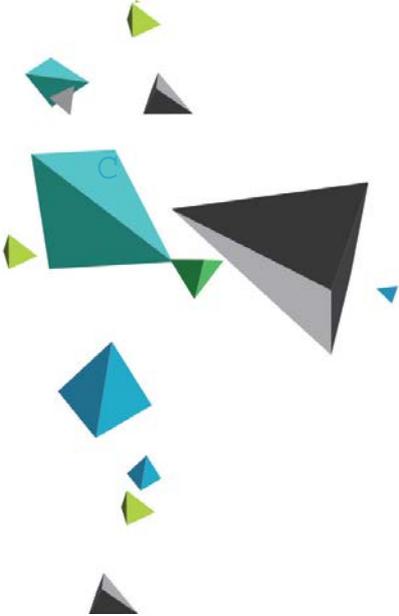
**PowerUp Video Broadcast System:  
For yesterday, today and tomorrow's  
platforms – A singular unifying  
hybrid QAM/IP stack**

PowerUp Video Broadcast System (PowerUp VBS) is the industry's first hybrid QAM/IP platform capable of powering legacy, tru2way, and next generation platforms. It features a complete, industry-leading set of solutions and tools to run interactive applications on today's cable platforms or tomorrow's multi-screen platforms.

PowerUp VBS unifies the middleware services layer with the presentation layer (browser based for HTML5 or native for legacy) and provides the industry's first singular platform capable of operating all managed devices and enabling all applications and services to be created once and then delivered ubiquitously across all ecosystems.

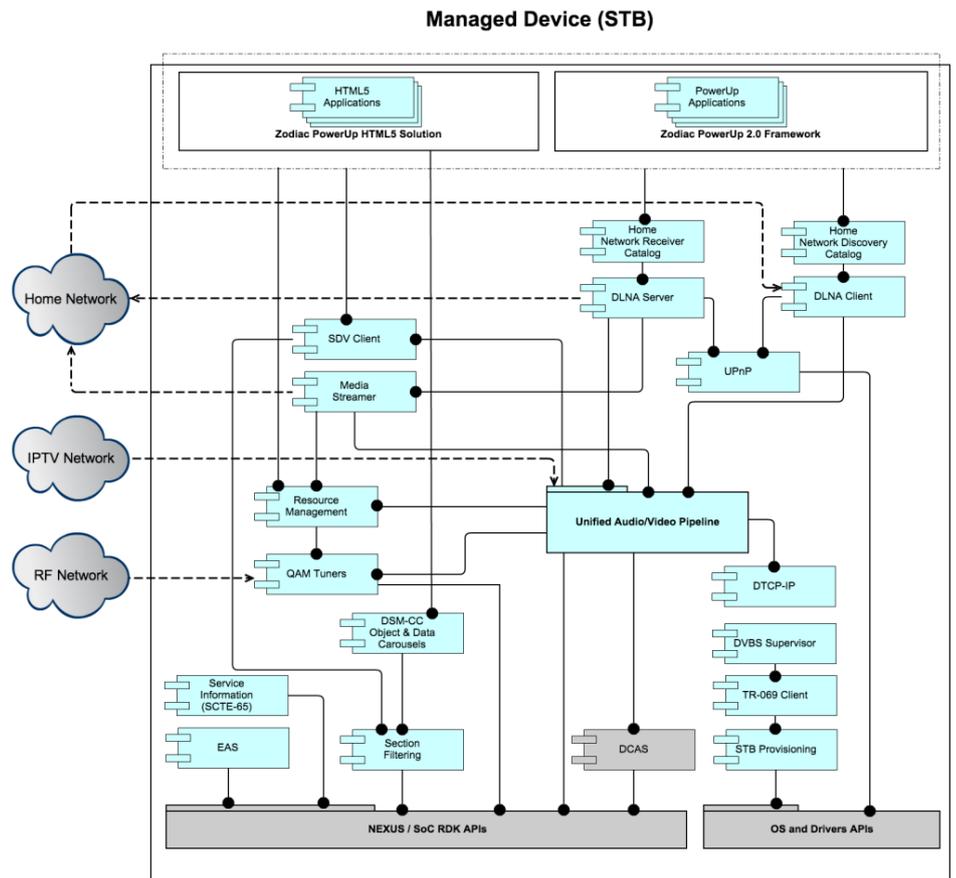
In addition, to supplement the PowerUp VBS, there is Zodiac's PowerUp Advanced Messaging Solution (PowerUp AMS), a server-based platform to integrate cloud services across TV, PCs, tablets, cell phones or any other connected devices and the PowerUp Browser Platform which delivers a web browser presentation engine with a service layer that provides a rich authoring environment for next generation IPTV STB platforms.

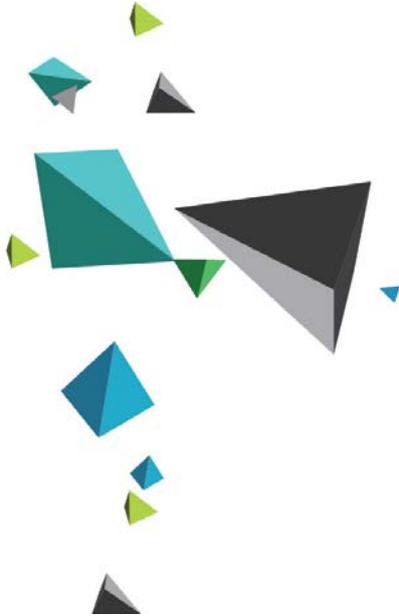
All PowerUp products complement one another on all platforms and provide seamless integration so that an application works uniformly on the other platforms, whether legacy or next-generation.



**The PowerUp VBS was designed and engineered to deliver:**

- Transparent support of and interoperability on a broad base of managed devices
- Efficiency and performance optimization across multiple platforms while maintaining near-linear scalability
- Operational integrity able to support 7x24 carrier grade environments
- Open standards compliance for flexibility and expandability
- Future-generation requirements accommodated through a standards-compliant, modular component-based design





**This has created leading industry advantages and features:**

1. Hardware Acceleration – On managed devices that support it, the VBS uses specific features of the managed device that allow for best-in-class performance optimization. This includes utilizing hardware graphics acceleration (on managed devices that support it), hardware video transcoding, and multiple CPU cores.
2. Universal support of IP-enabled, QAM-enabled, and Hybrid managed devices.
3. Unified support for QAM and IP video streams, allowing managed devices to seamlessly present video content delivered over cable, IP, and web services.
4. Cross-Platform Compatibility - Capability of operating on a variety of OEM and 3<sup>rd</sup> party platforms. Full support of Comcast SoC RDK and Broadcom NEXUS API as well as private platforms. Vendor specific hardware currently supported include Humax, Cisco, Motorola, Pace, ST Micro, Samsung.
5. Transport-agnostic subsystem for data delivery.
6. Remote control interface, allowing other devices to control the managed device (e.g., mobile phones, tablets, laptops, etc.).
7. Wi-Fi controlling. For managed devices with Wi-Fi support, VBS allows wireless connection to the home network. It can also use the managed device as a wireless access point, serving all Wi-Fi-enabled devices allowing managed devices to function as content gateways to accept and display content from other devices inside the home network.
8. Fast Channel Change – On hardware platforms that support it, PowerUp VBS uses a Zodiac Fast Channel Change technology. It significantly reduces time between switching from one QAM channel to another.
9. Unified Audio/Video Pipeline – The PowerUp VBS includes Unified Audio/Video Pipeline (UAVP), a high-level framework for creating and managing video pipelines.

PowerUp VBS Supervisor – a set of specialized tools that provides functionality for remotely controlling the managed device. Supports TR-069, an open standard for remote control and management of IP-enabled devices.