

ZEN Master IPTV Blade System

Encoding and Streaming Platforms



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The ZEN carrier-grade platforms are hardware-based professional video compression, transcoding and streaming systems that house MPEG-4 AVC (H.264) HD/SD, MPEG-2 HD/SD encoding blades and the new Transcoding and Mobile Streaming Blades

The award-winning ZEN compression and streaming platforms deliver unprecedented video processing efficiency and exceptional video quality at a wide range of bit-rates. Designed for mission critical applications, the dense hardware architecture offers extensive modularity and redundancy options.

ZEN platforms encode, transcode and transrate uncompressed and compressed HD and SD sources to bandwidth-efficient MPEG IP streams optimized for IPTV and full-motion-video (FMV) services. The transcoding capabilities include real-time processing of any MPEG stream to the most common mobile and internet web streaming protocols including Apple™ HTTP Live Streaming (HLS), Microsoft™ Silverlight Smooth Streaming (SST), Adobe™ Flash Dynamic Streaming (HDS), 3GPP, RTP and more.

Advanced capabilities include encoding of secondary stream (up to 1080p HD) for remote users or picture-in-picture (PiP) applications, ancillary data support, graphic overlay and time-code insertion. A



management application suite optimized for secure Department-of-Defense IT environments up to top secret (TS) classification make the carrier-grade blade-based platforms the ideal video streaming solutions for federal and state government agencies, Telco operators and enterprises. The MPEG-4 H.264 compression codec delivers superb video quality at any bit-rate for applications ranging from situational awareness to DVD-quality streaming for the enterprise to HD video for real-time contribution and ISR applications.

The ZEN platform utilizes a highly efficient integrated controller blade that serves as the single point of interaction with the network, manages all hardware modules in the system and automatically triggers redundancy and failover. The controller aggregates all streams produced by the compression blades into a single network interface with the LAN, reducing OPEX and CAPEX costs by eliminating the need to allocate multiple ports on the network switch and individually manage encoder modules.

With up to 104 HD/SD H.264 encoders (52 primary and 52 secondary streams) integrated in a single platform, the high-density ZEN product line offers best-in-class video processing power with a compact footprint and lowest cost per video encoding port, The Z-Blade 2000 provides full control of resolution, data rate and other compression parameters for both primary and secondary streams, including built-in downscaling from HD to HD and HD to SD with frame-rate down-converting. The blade also features inputs for composite, HD/SD-SDI and HDMI signals for flexible mixing of different sources in a single ZEN deployment.

The cutting-edge Z-Blade Mobile Enterprise and the Mobile Lite Blade offer extended reach and flexible dissemination of live video to any mobile device, phones, smart TV's and over-the-top (OTT) media players over WiFi, 3G or 4G LTE networks or over the public Internet. Advanced capabilities such as video and audio pre-processing, content protection and Adaptive Bit-Rate (ABR) streaming make the ZEN platforms the ideal solution for ingesting and distributing content for any live media application.

The ZEN platform's built-in real-time encryption engine uses a 256/128-bit AES algorithm, allowing operators to securely deliver Full Motion Video and IPTV content over IP. The encrypted content and metadata is deciphered by authorized Z-Band IP Systems ZIP Portal video player users, eliminating the need to manually manage access rights to IPTV content.

The Z-Band IP Systems ZEN Harmony professional management suite provides intuitive, efficient monitoring and management of multiple ZEN platforms and hundreds of channels from one centralized



application. The system offers full redundancy including N+K capability that allows failover of a blade in one platform to a blade located in a different platform to eliminate single-point-of-failure scenarios. The ZEN line is fully integrated with Z-Band IP Systems ZIP Portal video delivery and management system.

Benefits

- Complete video streaming solution covering encoding, transcoding, transrating and mobile streaming
- 6th generation codec offers best-in-class HD & SD video quality
- Scenario-specific form factors and density: 1RU/4RU/10RU
- Hot-swappable components with built-in automatic failover for all critical components
- Controller blade consolidates all streaming and management traffic to a single network interface
- Mix-and-match inputs and outputs offers service diversity within each platform
- Designed with highest level of availability for mission critical applications
- Comprehensive management tools, clustering and automatic failover capabilities
- Dense architecture supports up to 104 streams per platform
- Analog, HD/SD-SDI, IP , ASI and HDMI inputs

Key Features

- Encodes/transcodes/transrates up to 52 video sources per platform to more than 100+ streams
- Formats: MPEG-4 AVC (H.264) or MPEG-2/MPEG-1, SD and HD, Dolby 5.1 and 7.1 audio
- OTT: Apple™ HLS, Microsoft™ SST, Adobe™ Flash Dynamic
- Streaming (HDS), 3GPP, RTSP
- Encodes each source to two quality levels (secondary stream up to 1080p)
- Built-in AES-256/128-bit encryption for video, audio and metadata
- Clustering for efficient management and monitoring of large installation
- Streams video to mobile devices over 3G/4G LTE/WiFi networks or open Internet
- Streams each video feed to up to 7 targets (multicast and unicast)
- N+K redundancy for cost-effective automatic service recovery, network interface redundancy and diversity modes
- Wide range of bit-rate support per video port: 150Kbps-15Mbps
- IP v6 streaming
- Optimized for government and military IT environments.
- Networthiness certification by US NETCOM

Applications

- Enterprise and Corporate IPTV
- FMV Dissemination for Situational Awareness and ISR Video
- Telco IPTV
- Over-the-Top Web Streaming
- Terrestrial and Mobile TV
- Replacement of Legacy Cable TV Systems with efficient IPTV
- Training and Distance Learning
- Video Monitoring and Video Confidence