VSA Streaming combines Viavi digital-video monitoring software with commercially available, off-the-shelf hardware to create easily deployable points of presence in your headends and network. Specifically developed for video service providers who must ensure quality of service (QoS) and quality of experience (QoE), VSA Streaming is a highly cost-effective and scalable solution that unites a system-integrated monitoring probe with all the features of a standalone digital video analyzer. This ensures monitoring results are consistent with troubleshooting information, providing a seamless transfer of information to Tier 2 and 3 groups and preventing repeat investigations with different tools.

VSA Streaming lets users monitor MPEG digital video with a breadth, depth, and accuracy never before available. It simultaneously monitors thousands of programs for TR101-290 parameters at full line rate in a 1RU platform. In addition, deeper payload measurements such as video still and video black help reveal true end-user perception of video, ensuring it is not compromised as it undergoes encoding, ad insertion, transcoding, and transport across networks.

The solution monitors loudness to verify audio levels for hundreds of audio streams simultaneously at full line rate in a 1RU platform. Monitoring and alarming is based on industry standards such as ITU loudness and Dolby® Dialogue Intelligence gated/un-gated loudness.

Closed captioning (CC) monitoring inspects video PIDs for thousands of programs. It verifies the presence of CC content and any errors associated with it, and shows the CC text to the user. The monitoring provides full visibility of CC, validating caption service health at not just the transport layer but also the user, data, caption, and packet layers. This ensures that closed captioning meets specifications for both traditional line 21 captioning as well as digital captions for IP-delivered video.

**Benefits**
- Reduces CapEx with software-based probes
- Scales from dense headend monitoring applications to low-cost edge test points
- Decreases MTTR, enabling seamless escalation of problems across workgroups
- Reduces subscriber complaints by alerting users of problems and helping quickly find QoE issues
- Avoids fines and reduces trouble tickets by ensuring compliance with national and local regulations
- Streamlines processes with in-house systems

**Features**
- 1/10 Gigabit Ethernet and ASI interfaces
- Integrated MPEG protocol analyzer for parallel troubleshooting and monitoring
- Video quality index and MOS identifies impairment issues such as still, black, tiling, and macroblocking
- 24x7 audio loudness and closed captioning monitoring
- Remote viewing for video thumbnails and full streaming video
- Open platform and powerful API supporting real-time alarms as well as polling for performance management data
- Consistent user interface and capabilities
Troubleshooting analysis has no impact on monitoring functions, eliminating the need for users to choose between monitoring or performing real-time, in-depth analysis. Because the same engine is used for troubleshooting and monitoring, escalation of problems is seamless and monitoring results are a useful starting point for troubleshooting.

Viavi provides an open, XML-based API to completely integrate monitoring functionality with third-party monitoring/OSS platforms. Lighter-integration users may choose to support a subset of these capabilities or use the SNMP trap-generation feature.

### Specifications

#### Video Stream Analyzer Hardware Requirements

**Specifications Vary by Application—Please Consult Your Local Viavi Representative.**

**Interface Options**

Gigabit Ethernet: 1 G: 1000BaseT, 1000BaseLX, 1000BaseSX, and 1000BaseZX  
10 G: SFP+ 10GBaseSR, 10GBaseLR, 10GBaseER, 10GBaseCR, ASI EN 50083-9

**Loudness Monitoring**

ITU-R BS.1770-3; Dolby Dialog Intelligence (DDI); audio level; ITU gated loudness; speech loudness; Dolby gated loudness; nonspeech loudness; speech delta; true peak; supported for AAC and AC3 audio

**SimulTrak Monitoring**

TR101-290 priority 1 and 2; PCR lock, jitter, frequency offset, drift rate; PID bit rate; program loss; stream loss, program bit rate; audio bit rate; video bit rate; null bit rate; PTS-DTS delta; late media; inter-frame delay (IDF): min, max, avg, std deviation; RTP: loss, out of order, loss periods, distance errors, loss length errors, bad timestamp, RTP jitter: min, max, std deviation; RTP RFC 3550 jitter: min, max, avg, std deviation; changes to source IP addr, MPEG info, DPI packet detected; capture on trigger with pre-trigger buffer; on-demand stream capture to HD; remote video viewing: video decode, video still/black detection, video TrueMOS, video quality index (VQI), SNMP alarming (warning, minor, major, critical) with intelligent alarms (warm up/cold down periods); XML API for alarming, data extraction; raw data available for performance management statistics and reporting

**Real-Time MPEG Analyzer**

MPEG-2; MPEG-4; AVC; H.264; TR101-290 priority 1, 2, and 3; MHP; SCTE-35; digital program insertion (DPI) analysis; MPEG-2/PSI and ATSC/PSIP; and DVB/SI table decodes and hierarchy; private table decode; SimulTrak monitoring measurements plus: stream type; PID count; GE bit rate; MPEG-2 TS bit rate; other bit rate; program count; packet count (audio, video, other); PCR: jitter (avg, max), accuracy (avg, max), frequency offset (min, max, drift rate: current, max, min); hex display; events list and logs; graphing

**Network Analysis**

Frame count; frames per second; frame size, distribution, type (unicast, multicast, broadcast); source MAC, IP addr, port; destination MAC, IP addr, port; protocol (RTP/MP2T, RTP, UDP, IPv4); VLAN identifier (outer and inner for stacked VLAN); IDF: min, max, avg, std deviation

**Closed-Captioning Monitoring**

CEA-608 and CEA-708 closed captioning; compliant with relevant standards SCTE-20, 21, 43, and ATSC A/53

VSA Streaming is managed by the VSA Monitor to provide end-to-end visibility across the network.