

# FaultLine™

## Video-over-IP Monitor

### Technical Specifications

FaultLine™ Video-over-IP Monitor software provides full bandwidth, real-time analysis of MPEG-2 Transport Streams, and QoS/QoE metrics, for multicast IPTV streams and unicast VOD streams.

#### Key Features

- Capture and analyze *all* video streams present at line rates up to 1 Gbps.
- Analyze up to 1,024 simultaneous video streams.
- Automatic discovery of all multicast IPTV and unicast VOD streams.
- Flexible sample interval options allow you to store up to 250 hours of data with the database logging option.

#### Encapsulation and Protocol Support

- Support for 188-byte and 204-byte MPEG2-TS packets over UDP or RTP/UDP
- MPEG-2 SPTS and MPTS
- Video formats: MPEG-1, MPEG-2, H.264, MPEG-4 part 2
- VLAN Tagging
- IGMP v2/3

#### RTP Measurements

- RFC 3550 – packet loss and jitter
- Throughput per stream

#### MPEG2-TS Measurements

- ETSI TR 101 290 First Priority Events
  - TS sync loss errors
  - Sync byte errors
  - PAT errors
  - CC errors
  - PMT errors
  - PID dropout errors
- ETSI TR 101 290 Second Priority Events
  - Transport errors
  - CRC errors: CAT, PAT, and PMT
  - PCR errors: repetition, discontinuity, and accuracy
  - PTS errors
- PCR jitter (1 millisecond resolution and accuracy)
- PCR transmission rates
- PAT and PMT table rates
- Packet loss and duplicate packet counts
- Throughput per TS, program, and PID
- NULL PID throughput overhead



#### Throughput Measurements

- Throughput by stream: RTP, MPEG-2 TS, MPEG-2 program, and MPEG-2 PID.
- Throughput by protocol: Ethernet, IP, TCP, UDP, RTP, MPEG2-TS, SIP, HTTP, FTP.

#### Active Tests

- Actively join any configured channel group (STB emulation). FaultLine will pull video streams from a non-mirror port
- A zap time measurement that shows the distribution of channel zap times across the STB, the network and the encoder
- IGMP join success test. Reports the number of times FaultLine has attempted to join each channel in each channel group and the results

#### GUI

- Select and view statistics by groups and streams.
- User configurable thresholds and alarms with log messages, email messaging, and SNMP trap notification.
- Filter Event Log messages by a user-supplied text string.
- Run two copies of FaultLine on the same PC at the same time connected to two separate NICs
- "Run from File" using from a Wireshark® pcap file

#### Import, Export and Reporting

- Save MPEG2-TS and zap time statistics to a tab-separated text file for analysis & printing
- Import a CSV file of friendly channels names and channel numbers (i.e. ESPN, Fox News, CNN...) to display in place of stream IP addresses
- Save the Event Log messages to a text file

#### Product Configuration

- PC requirements: 2 GHz Dual Core x86 with 2GB RAM and NDIS PCI Express NIC
- Operating Systems: Windows 2000, XP, and Vista.

