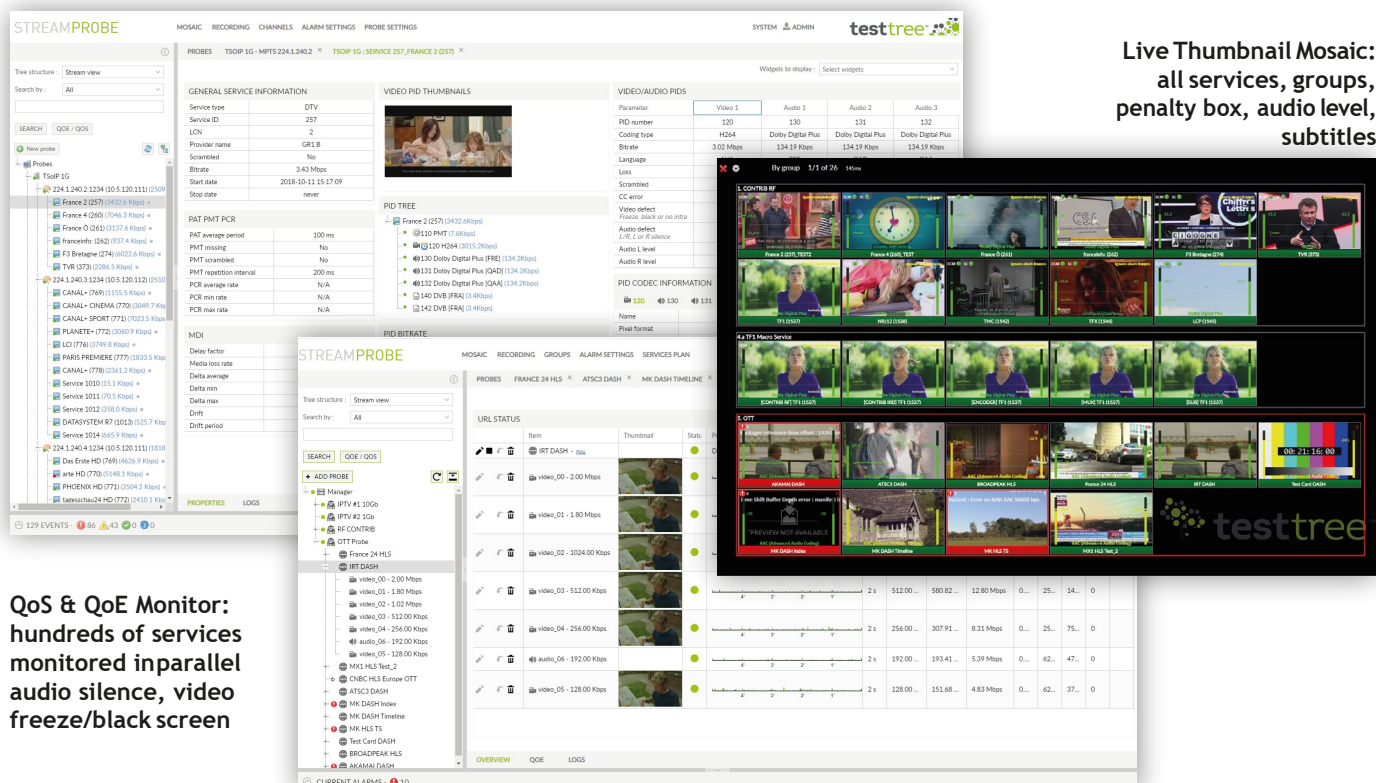


# STREAMPROBE

# ATSC 3.0/1.0

## One single Consistent Monitoring Solution for Contribution / Encoding / Packaging

Monitor your content quality (QoS/QoE) throughout the entire video processing chain.  
High density and scalable software solution.



**QoS & QoE Monitor:**  
hundreds of services  
monitored in parallel  
audio silence, video  
freeze/black screen

**Live Thumbnail Mosaic:**  
all services, groups,  
penalty box, audio level,  
subtitles

## APPLICATIONS

- **Monitoring of the content QoS & QoE: received from contribution, prior & after encoding/packaging as well as from an end user point of view**
- **Generation of Service Availability reports for SLA commitments**
- **Live ATSC 1.0 TS Recording for Compliance Recording and conflict/litigation proof**
- **All services view at-a-glance: Live Thumbnail Mosaic**

## BENEFITS

- **High density: hundreds of services monitored in real-time & in parallel in a single 1RU server; 10Gb interfaces supported**
- **Scalable: from an all-in-one system to a fully distributed architecture**
- **Software only: Linux OS, VM for virtualized environments**
- **Remotely accessible: compatible with low bandwidth control networks (GPRS/3G/4G)**
- **Northbound interface (SNMP, open API)**

## TECHNICAL CHARACTERISTICS

**SW solution: Linux OS, VM for hypervisor type 1 (ESXi >6.0)**

**Off the shelf server, 1RU or 2RU (for large number of RF receivers)**

**CPU, RAM, HDD: depending on number of streams to monitor**

**One or Multiple IP Data: 1Gbps, 10Gbps support**

**One or Multiple RF input(s) F-type 75 fi: ATSC 1.0, DVB-C QAM (J.83 A,B,C), DVB-S/S2 receiver – demodulation for TS extraction**

**RF front end module: up to 4x RF inputs (8x RF channels tuning)**

**One or Multiple DVB-ASI input(s): TS extraction**

## KEY FEATURES

- **QoS ATSC 1.0 TS monitoring:**
  - MDI: **Delay Factor, Media Loss Rate, Delta (min, max, average), Drift & Period Drift**
  - **FEC support (packets recovered/lost), IP jitter**
  - **ETSI TR 101 290 Priority 1, 2, 3**
  - **PSI/SI repetition rates, scrambling**
  - **Bitrates: TS, service & service components, PSI/SI**
- **QoE monitoring:**
  - **Video monitoring: freeze, black screen, missing Intra detection**
    - > **PID codec information: type, pixel format, profile, level, GOP structure and size, image count and weight, width, height, aspect ratio, framerate and type, VB delay**
  - **Audio monitoring: levels, silence detection**
    - > **PID codec information: type, channel number and layout, sample rate and format**
  - **Subtitles DVB and Teletext: decoding and display**
  - **Formats: MPEG-1 audio, MPEG-2 audio/video, H264 SD & HD, 4K, HEVC**
- **Live Thumbnail Mosaic: all services or group filtering, audio levels, subtitles, penalty box**
- **Live service(s) streaming over low bandwidth links (service compression)**
- **TS recording: on error or manually scheduled**
- **CA processing:**
  - **EMM/ECM: presence, repetition, bitrates**
  - **FTA <-> scrambled: transition timing detailed display**
- **Configurable alarming thresholds: general and daily alarm profiles**
- **NMS integration: SNMPv2 support for alarm traps**
- **Monitoring information available via an open API (HTTP/JSON API)**

## KEY FEATURES

- **QoS ATSC 3.0 monitoring: playlist integrity & network performance check**
  - **DASH**
  - **Manifest integrity check, content display & download**
  - **Profile information: availability, type, bitrate statistics, codec, resolution, base and relative URL, playlist content/format, chunk number, media sequence...**
  - **Chunk HTTP information: availability, length, bitrate statistics, playlist format**
  - **HTTP connection time statistics: connection, DNS redirection, upload, download**
- **QoE monitoring:**
  - **Video monitoring: freeze, black screen, missing Intra detection**
    - > **PID codec information: type, pixel format, profile, level, GOP structure and size, image count and weight, width, height, aspect ratio, frame rate and type, VB delay**
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