



QUALITY OF SERVICE (QoS) MONITORING OF TV AND RADIO CHANNELS

TELEPROBE IP Mini

TelePROBE IP system allows communications service providers to ensure QoS monitoring of TV and radio services at all the stages of transmission and delivery of signals over the network

QoS monitoring over network of TV services

TelePROBE IP system provides for QoS monitoring of modern digital video and audio signals within any type of network. At any point of the network TelePROBE analyzer is able to monitor current situation and immediately notify the users when problems occur.

Support of wide range of IP streams

TelePROBE IP system carries out simultaneous analysis of a wide range of professional video and audio streams sent over IP network, including MPEG-TS over IP (IP Multicast), SDI over IP (SMPTE ST 2022-6/7, ST 2110, NDI, SRT), AES67 (LiveWire, Dante), HLS (RFC 8216) and MPEG-DASH (ISO/IEC 23009-1:2012).

Monitoring of quality of web streaming services

TelePROBE analyzers allow controlling parameters of streams transmitted over IP networks with the use of various technologies at the same time. Depending on the requirement, TelePROBE analyzers are able to operate within internal service networks of the operator (IP Multicast), distribution networks (CDN), as well as user network.

Intelligent Data Flow Analysis

Due to integrated stream analyzers, TelePROBE allows not only detecting emergency events and informing on their occurrence on a timely basis, but also helps engineers identify causes of their occurrence thus ensuring rapid troubleshooting.

The system performs collection and retention of measured parameters and allows analyzing changes in time, using both tabular and graphical data representation.

WEB interface

New WEB user interface allows ensuring control over broadcasting from any user device in the Internet. Regular user Internet connection (supported through FireWall, NAT, etc.) is enough for efficient operation of TelePROBE. The interface allows configuring several analyzers into a single operating space and having access to each TelePROBE analyzer in a group within a single user interface.

Emergency notification and logging

TelePROBE analyzers notify about problems within the network, as well as provide various options of distributing alerts by external monitoring systems. All the events identified by TelePROBE are stored in the event log to which each user gets user-friendly access interface. The system supports both traditional standards of event data exchange (SNMP Get/Trap, Syslog) with the systems of other manufacturers and modern high speed integration interface based on HTTP/JSON technology with guaranteed delivery of data.

Signal visualization

TelePROBE system ensures local or remote visual monitoring of streams (requires a separate license).

Video recording

Controlled streams may be recorded, which allows ensuring the recording of the situation and its subsequent comprehensive analysis. Streams may be recorded both manually upon request and automatically in case of fault finding. Additionally, TelePROBE IP analyzer can perform automatic loop compliance recording (requires a separate license).

Virtualization

TelePROBE analyzer itself could be both a real device or cloud based, ensuring monitoring of cloud infrastructure of the client. If necessary, migration from the cloud to the device and backwards is possible.

Scaling and modernization

Based on the possibility to use TelePROBE analyzers of various capacity and functions, operators may optimize configuration and capabilities of the monitoring system and adjust them to current business objectives. Also, using the capabilities of TelePROBE IP system associated with license and hardware modernization, the user may optimize the capabilities of the system as the tasks expand.

Centralized and remote control over distributed systems of signal monitoring of any size

DEVICE DESIGN

Portable

117x128x32mm, external PSU, 2x1000Base-TX, passive cooling



TECHNICAL DATA

Working modes	Static mode (Fixed configuration); Scan mode (Dynamic cycling configuration)
Transport containers	MPEG-2 TS (ISO/IEC 13818-1, MPTS or SPTS) over IP (UDP, RTP, SRT) T2-MI (ETSI TS 102 773, EN 302 755) RTP/RTSP (RFC 1889, 2326, 3550) SDI over IP (SMPTE ST 2022-6/7, ST 2110, NDI) AES67, LiveWire, Dante
Session Protocols	RTSP (RFC 2326, 3550) HLS (IETF Internet-Draft) MPEG-DASH (ISO/IEC 23009-1)
Ethernet interfaces	2 1000Base-TX (ETSI TS 102 034) VLAN support, remote Ethernet-ports configuration

MONITORING AND ANALYSIS

Ethernet	MAC address, VLAN, COS parameters
IP network	IP stream bandwidth, Source IP, TTL, DSCP MDI:DF, MDI:MLR, MLT15/24, MLS15/24, Multicast Rate, IAT (Min., Avg., Max.)
MPEG-2 TS stream	Transport Stream bandwidth; No input data, PID errors; Transport stream errors (ETSI TR 101 290) T2-MI stream errors (DVB A136, A14-1) (additional license)
Transport stream analyzer	Viewing MPEG-2 TS structure; MPEG-TS/PID-s bitrate monitoring, PCR measurement; Viewing PSI/SI tables, decoding descriptors
Metadata	Detecting and logging DPI messages: SCTE 104 (SDI) / SCTE 35 (MPEG-2 TS), DTMF; Teletext monitoring, subtitles (SDI (ETSI EN 300 706), MPEG-2 TS (ETSI EN 300 472)); EPG monitoring
HLS	Protocol errors (HTTP 3xx, 4xx, 5xx), access/data timing parameters, streams bandwidth, data errors, synchronization errors, manifest/play list errors
MPEG-DASH	Protocol errors (HTTP 3xx, 4xx, 5xx), access manifest/data timing parameters, streams bandwidth, data errors, synchronization errors, manifest errors
CAS/DRM	Multistreamed descrambling support; AES128 data descrambling

DATA COLLECTION AND LOGGING

External monitoring system integration protocols	SNMP Get/Trap (RFC 1155, 1212/13, 1157, 3411-18, STDOO62) Syslog (RFC 3164) HTTP/JSON API
Receiving and showing external device traps (IRDs, coders, external stream analyzers, etc.)	SNMP Trap (RFC 3411-3418, STDOO62)
Transport Stream recording (MPEG-2 TS)	Manual mode; Automatic mode (by error detection)
Video Frames Recording	Automatic mode (by error detection) Search and Showing by error (WEB UI)
3rd party monitoring system	Zabbix (Zabbix Sender protocol); Prometheus

VIDEO RECORDING (additional functional module)

Multichannel compliance recording	MPEG-TS (TS container); AES67 (LiveWire, Dante) (PCM data); Automatic loop recording (tunable parameters), Manual recording; WEB User's Interface: date/time navigation, viewing control, recorded data access permissions
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